

The Parma Polyhedra Library

Configured C Language Interface

Developer's Manual*

(version 0.11.2)

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For the most up-to-date information see the Parma Polyhedra Library site:

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1 Main Page

All the declarations needed for using the PPL's C interface (preprocessor symbols, data types, variables and functions) are collected in the header file `ppl_c.h`. This file, which is designed to work with pre-ANSI and ANSI C compilers as well as C99 and C++ compilers, should be included, either directly or via some other header file, with the directive

```
#include <ppl_c.h>
```

If this directive does not work, then your compiler is unable to find the file `ppl_c.h`. So check that the library is installed (if it is not installed, you may want to make `install`, perhaps with root privileges) in the right place (if not you may want to reconfigure the library using the appropriate pathname for the `--prefix` option); and that your compiler knows where it is installed (if not you should add the path to the directory where `ppl_c.h` is located to the compiler's include file search path; this is usually done with the `-I` option).

The name space of the PPL's C interface is `PPL_*` for preprocessor symbols, enumeration values and variables; and `ppl_*` for data types and function names. The interface systematically uses *opaque data types* (generic pointers that completely hide the internal representations from the client code) and provides all required access functions. By using just the interface, the client code can exploit all the functionalities of the library yet avoid directly manipulating the library's data structures. The advantages are that (1) applications do not depend on the internals of the library (these may change from release to release), and (2) the interface invariants can be thoroughly checked (by the access functions).

Note

All functions taking as input argument an opaque pointer datatype assume that such an argument is actually *referring to a valid PPL object*. For instance, a function with an argument having type `ppl_MIP_Problem_t` will expect a valid MIP_Problem object, previously initialized by calling, e.g., `ppl_new_MIP_Problem`. If that is not the case (e.g., if a null pointer is passed in), the behavior is undefined.

The PPL's C interface is initialized by means of the `ppl_initialize` function. This function must be called *before using any other interface of the library*. The application can release the resources allocated by the library by calling the `ppl_finalize` function. After this function is called *no other interface of the library may be used* until the interface is re-initialized using `ppl_initialize`.

Any application using the PPL should make sure that only the intended version(s) of the library are ever used. The version used can be checked at compile-time thanks to the macros `PPL_VERSION_MAJOR`, `PPL_VERSION_MINOR`, `PPL_VERSION_REVISION` and `PPL_VERSION_BETA`, which give, respectively major, minor, revision and beta numbers of the PPL version. This is an example of their use:

```
#if PPL_VERSION_MAJOR == 0 && PPL_VERSION_MINOR < 6
# error "PPL version 0.6 or following is required"
#endif
```

Compile-time checking, however, is not normally enough, particularly in an environment where there is dynamic linking. Run-time checking can be performed by means of the functions `ppl_version_major`, `ppl_version_minor`, `ppl_version_revision`, and `ppl_version_beta`. The PPL's C interface also provides functions `ppl_version`, returning character string containing the full version number, and `ppl_banner`, returning a string that, in addition, provides (pointers to) other useful information for the library user.

All programs using the PPL's C interface must link with the following libraries: `libppl_c` (PPL's C interface), `libppl` (PPL's core), `libgmpxx` (GMP's C++ interface), and `libgmp` (GMP's library core). On most Unix-like systems, this is done by adding `-lppl_c`, `-lppl`, `-lgmpxx`, and `-lgmp` to the compiler's or linker's command line. For example:

```
gcc myprogram.o -lppl_c -lppl -lgmpxx -lgmp
```

If this does not work, it means that your compiler/linker is not finding the libraries where it expects. Again, this could be because you forgot to install the library or you installed it in a non-standard location. In the latter case you will need to use the appropriate options (usually `-L`) and, if you use shared libraries, some sort of run-time path selection mechanisms. Consult your compiler's documentation for details. Notice that the PPL is built using `Libtool` and an application can exploit this fact to significantly simplify the linking phase. See `Libtool`'s documentation for details. Those working under Linux can find a lot of useful information on how to use program libraries (including static, shared, and dynamically loaded libraries) in the `Program Library HOWTO`.

For examples on how to use the functions provided by the C interface, you are referred to the directory `demos/ppl_lpsol/` in the source distribution. It contains a *Mixed Integer (Linear) Programming* solver written in C. In order to use this solver you will need to install `GLPK` (the GNU Linear Programming Kit): this is used to read linear programs in MPS format.

2 GNU General Public License

Version 3, 29 June 2007

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1. Source Code.

The “source code” for a work means the preferred form of the work for making modifications to it. “Object code” means any non-source form of a work.

A “Standard Interface” means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The “System Libraries” of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A “Major Component”, in this context, means a major essential component (kernel, window system, and so on) of

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7.1 File List

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8 Module Documentation

8.1 C Language Interface

The Parma Polyhedra Library comes equipped with an interface for the C language.

8.2 Library Initialization and Finalization

Functions

- `int ppl_initialize (void)`
Initializes the Parma Polyhedra Library. This function must be called before any other function.
- `int ppl_finalize (void)`
Finalizes the Parma Polyhedra Library. This function must be called after any other function.
- `int ppl_set_rounding_for_PPL (void)`
Sets the FPU rounding mode so that the PPL abstractions based on floating point numbers work correctly.
- `int ppl_restore_pre_PPL_rounding (void)`
Sets the FPU rounding mode as it was before initialization of the PPL.
- `int ppl_irrational_precision (unsigned *p)`
Writes to `p` the precision parameter used for irrational calculations.
- `int ppl_set_irrational_precision (unsigned p)`
Sets the precision parameter used for irrational calculations.

8.2.1 Detailed Description

Functions for initialization/finalization of the library, as well as setting/resetting of floating-point rounding mode.

8.2.2 Function Documentation

8.2.2.1 `int ppl_finalize (void)`

Finalizes the Parma Polyhedra Library. This function must be called after any other function.

Returns

`PPL_ERROR_INVALID_ARGUMENT` if the library was already finalized.

Definition at line 243 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::saved_cxx_Variable_output_function`.

8.2.2.2 `int ppl_initialize (void)`

Initializes the Parma Polyhedra Library. This function must be called before any other function.

Returns

`PPL_ERROR_INVALID_ARGUMENT` if the library was already initialized.

Definition at line 181 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::c_variable_default_output_function()`, `Parma_Polyhedra_Library::Interfaces::C::c_variable_output_function`, `Parma_Polyhedra_Library::Interfaces::C::cxx_Variable_output_function()`, and `Parma_Polyhedra_Library::Interfaces::C::saved_cxx_Variable_output_function`.

8.2.2.3 `int ppl_irrational_precision (unsigned * p)`

Writes to `p` the precision parameter used for irrational calculations.

Definition at line 328 of file `ppl_c_implementation_common.cc`.

8.2.2.4 `int ppl_restore_pre_PPL_rounding (void)`

Sets the FPU rounding mode as it was before initialization of the PPL.

After calling this function it is absolutely necessary to call `set_rounding_for_PPL()` before using any PPL abstractions based on floating point numbers. This is performed automatically at finalization-time.

Definition at line 321 of file `ppl_c_implementation_common.cc`.

8.2.2.5 `int ppl_set_irrational_precision (unsigned p)`

Sets the precision parameter used for irrational calculations.

If `p` is less than or equal to `INT_MAX`, sets the precision parameter used for irrational calculations to `p`. Then, in the irrational calculations returning an unbounded rational, (e.g., when computing a square root), the lesser between numerator and denominator will be limited to 2^{**p} .

Definition at line 335 of file `ppl_c_implementation_common.cc`.

8.2.2.6 `int ppl_set_rounding_for_PPL (void)`

Sets the FPU rounding mode so that the PPL abstractions based on floating point numbers work correctly.

This is performed automatically at initialization-time. Calling this function is needed only if `restore_pre_PPL_rounding()` has been previously called.

Definition at line 314 of file `ppl_c_implementation_common.cc`.

8.3 Version Checking

Defines

- `#define PPL_VERSION "0.11.2"`
A string containing the PPL version.

- `#define PPL_VERSION_MAJOR 0`
The major number of the PPL version.
- `#define PPL_VERSION_MINOR 11`
The minor number of the PPL version.
- `#define PPL_VERSION_REVISION 2`
The revision number of the PPL version.
- `#define PPL_VERSION_BETA 0`
The beta number of the PPL version. This is zero for official releases and nonzero for development snapshots.

Functions

- `int ppl_version_major (void)`
Returns the major number of the PPL version.
- `int ppl_version_minor (void)`
Returns the minor number of the PPL version.
- `int ppl_version_revision (void)`
Returns the revision number of the PPL version.
- `int ppl_version_beta (void)`
Returns the beta number of the PPL version.
- `int ppl_version (const char **p)`
*Writes to *p a pointer to a character string containing the PPL version.*
- `int ppl_banner (const char **p)`
*Writes to *p a pointer to a character string containing the PPL banner.*

8.3.1 Detailed Description

Symbolic constants and functions related to library version checking.

8.3.2 Define Documentation

8.3.2.1 `#define PPL_VERSION "0.11.2"`

A string containing the PPL version.

Let M and m denote the numbers associated to `PPL_VERSION_MAJOR` and `PPL_VERSION_MINOR`, respectively. The format of `PPL_VERSION` is M "." m if both `PPL_VERSION_REVISION` (r) and `PPL_VERSION_BETA` (b) are zero, M "." m "pre" b if `PPL_VERSION_REVISION` is zero and `PPL_VERSION_BETA` is not zero, M "." m "." r if `PPL_VERSION_REVISION` is not zero and

PPL_VERSION_BETA is zero, M "." m "." r "pre" b if neither PPL_VERSION_REVISION nor PPL_VERSION_BETA are zero.

Definition at line 262 of file ppl_c.h.

8.3.2.2 #define PPL_VERSION_BETA 0

The beta number of the PPL version. This is zero for official releases and nonzero for development snapshots.

Definition at line 287 of file ppl_c.h.

8.3.2.3 #define PPL_VERSION_MAJOR 0

The major number of the PPL version.

Definition at line 268 of file ppl_c.h.

8.3.2.4 #define PPL_VERSION_MINOR 11

The minor number of the PPL version.

Definition at line 274 of file ppl_c.h.

8.3.2.5 #define PPL_VERSION_REVISION 2

The revision number of the PPL version.

Definition at line 280 of file ppl_c.h.

8.3.3 Function Documentation

8.3.3.1 int ppl_banner (const char ** p)

Writes to *p a pointer to a character string containing the PPL banner.

The banner provides information about the PPL version, the licensing, the lack of any warranty whatsoever, the C++ compiler used to build the library, where to report bugs and where to look for further information.

Definition at line 376 of file ppl_c_implementation_common.cc.

8.3.3.2 int ppl_version (const char ** p)

Writes to *p a pointer to a character string containing the PPL version.

Definition at line 366 of file ppl_c_implementation_common.cc.

8.3.3.3 `int ppl_version_beta (void)`

Returns the beta number of the PPL version.

Definition at line 360 of file ppl_c_implementation_common.cc.

8.3.3.4 `int ppl_version_major (void)`

Returns the major number of the PPL version.

Definition at line 342 of file ppl_c_implementation_common.cc.

8.3.3.5 `int ppl_version_minor (void)`

Returns the minor number of the PPL version.

Definition at line 348 of file ppl_c_implementation_common.cc.

8.3.3.6 `int ppl_version_revision (void)`

Returns the revision number of the PPL version.

Definition at line 354 of file ppl_c_implementation_common.cc.

8.4 Error Handling

Enumerations

- `enum ppl_enum_error_code` {
`PPL_ERROR_OUT_OF_MEMORY`, `PPL_ERROR_INVALID_ARGUMENT`, `PPL_ERROR_`
`DOMAIN_ERROR`, `PPL_ERROR_LENGTH_ERROR`,
`PPL_ARITHMETIC_OVERFLOW`, `PPL_STDIO_ERROR`, `PPL_ERROR_INTERNAL_ERROR`,
`PPL_ERROR_UNKNOWN_STANDARD_EXCEPTION`,
`PPL_ERROR_UNEXPECTED_ERROR`, `PPL_TIMEOUT_EXCEPTION`, `PPL_ERROR_LOGIC_`
`ERROR` }

Defines the error codes that any function may return.

Functions

- `int ppl_set_error_handler (void(*h)(enum ppl_enum_error_code code, const char *description))`
Installs the user-defined error handler pointed at by h.

8.4.1 Detailed Description

Symbolic constants and functions related to error reporting/handling.

8.4.2 Enumeration Type Documentation

8.4.2.1 `enum ppl_enum_error_code`

Defines the error codes that any function may return.

Enumerator:

PPL_ERROR_OUT_OF_MEMORY The virtual memory available to the process has been exhausted.

PPL_ERROR_INVALID_ARGUMENT A function has been invoked with an invalid argument.

PPL_ERROR_DOMAIN_ERROR A function has been invoked outside its domain of definition.

PPL_ERROR_LENGTH_ERROR The construction of an object that would exceed its maximum permitted size was attempted.

PPL_ARITHMETIC_OVERFLOW An arithmetic overflow occurred and the computation was consequently interrupted. This can *only* happen in library's incarnations using bounded integers as coefficients.

PPL_STDIO_ERROR An error occurred during a C input/output operation. A more precise indication of what went wrong is available via `errno`.

PPL_ERROR_INTERNAL_ERROR An internal error that was diagnosed by the PPL itself. This indicates a bug in the PPL.

PPL_ERROR_UNKNOWN_STANDARD_EXCEPTION A standard exception has been raised by the C++ run-time environment. This indicates a bug in the PPL.

PPL_ERROR_UNEXPECTED_ERROR A totally unknown, totally unexpected error happened. This indicates a bug in the PPL.

PPL_TIMEOUT_EXCEPTION An exception has been raised by the PPL as a timeout previously set by the user has expired.

PPL_ERROR_LOGIC_ERROR The client program attempted to use the PPL in a way that violates its internal logic. This happens, for instance, when the client attempts to use the timeout facilities on a system that does not support them.

Definition at line 341 of file `ppl_c.h`.

8.4.3 Function Documentation

8.4.3.1 `int ppl_set_error_handler (void(*) (enum ppl_enum_error_code code, const char *description) h)`

Installs the user-defined error handler pointed at by `h`.

The error handler takes an error code and a textual description that gives further information about the actual error. The C string containing the textual description is read-only and its existence is not guaranteed after the handler has returned.

8.5 Handling

Functions

- `int ppl_set_timeout` (unsigned time)
Sets the timeout for computations whose completion could require an exponential amount of time.
- `int ppl_reset_timeout` (void)
Resets the timeout time so that the computation is not interrupted.
- `int ppl_set_deterministic_timeout` (unsigned weight)
Sets a threshold for computations whose completion could require an exponential amount of time.
- `int ppl_reset_deterministic_timeout` (void)
Resets the deterministic timeout so that the computation is not interrupted.

8.5.1 Detailed Description

Functions for setting and resetting timeouts.

8.5.2 Function Documentation

8.5.2.1 `int ppl_reset_deterministic_timeout` (void)

Resets the deterministic timeout so that the computation is not interrupted.

Definition at line 301 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::reset_deterministic_timeout()`.

8.5.2.2 `int ppl_reset_timeout` (void)

Resets the timeout time so that the computation is not interrupted.

Definition at line 270 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::reset_timeout()`.

8.5.2.3 `int ppl_set_deterministic_timeout` (unsigned *weight*)

Sets a threshold for computations whose completion could require an exponential amount of time.

Parameters

weight The maximum computational weight allowed. It must be strictly greater than zero.

Computations taking exponential time will be interrupted some time after reaching the `weight` complexity threshold. If the computation is interrupted that way, the interrupted function will return error code `PPL_TIMEOUT_EXCEPTION`. Otherwise, if the computation completes without being interrupted, then the deterministic timeout should be reset by calling `ppl_reset_deterministic_timeout()`.

Note

This "timeout" checking functionality is said to be *deterministic* because it is not based on actual elapsed time. Its behavior will only depend on (some of the) computations performed in the PPL library and it will be otherwise independent from the computation environment (CPU, operating system, compiler, etc.).

Warning

The weight mechanism is under alpha testing. In particular, there is still no clear relation between the weight threshold and the actual computational complexity. As a consequence, client applications should be ready to reconsider the tuning of these weight thresholds when upgrading to newer version of the PPL.

Definition at line 283 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::reset_deterministic_timeout()`.

8.5.2.4 `int ppl_set_timeout (unsigned time)`

Sets the timeout for computations whose completion could require an exponential amount of time.

Parameters

time The number of hundredths of seconds. It must be strictly greater than zero.

Computations taking exponential time will be interrupted some time after `time` hundredths of seconds have elapsed since the call to the timeout setting function. If the computation is interrupted that way, the interrupted function will return error code `PPL_TIMEOUT_EXCEPTION`. Otherwise, if the computation completes without being interrupted, then the timeout should be reset by calling `ppl_reset_timeout()`.

Definition at line 252 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::reset_timeout()`.

8.6 Library Datatypes

Typedefs for the library datatypes and related symbolic constants.

Typedefs

- typedef size_t `ppl_dimension_type`
An unsigned integral type for representing space dimensions.
- typedef const char * `ppl_io_variable_output_function_type` (`ppl_dimension_type` var)
The type of output functions used for printing variables.

Enumerations

- enum `ppl_enum_Constraint_Type` {
`PPL_CONSTRAINT_TYPE_LESS_THAN`, `PPL_CONSTRAINT_TYPE_LESS_OR_EQUAL`,
`PPL_CONSTRAINT_TYPE_EQUAL`, `PPL_CONSTRAINT_TYPE_GREATER_OR_EQUAL`,
`PPL_CONSTRAINT_TYPE_GREATER_THAN` }
Describes the relations represented by a constraint.
- enum `ppl_enum_Generator_Type` { `PPL_GENERATOR_TYPE_LINE`, `PPL_GENERATOR_TYPE_RAY`, `PPL_GENERATOR_TYPE_POINT`, `PPL_GENERATOR_TYPE_CLOSURE_POINT` }
Describes the different kinds of generators.
- enum `ppl_enum_Grid_Generator_Type` { `PPL_GRID_GENERATOR_TYPE_LINE`, `PPL_GRID_GENERATOR_TYPE_PARAMETER`, `PPL_GRID_GENERATOR_TYPE_POINT` }
Describes the different kinds of grid generators.
- enum `ppl_enum_Bounded_Integer_Type_Width` {
`PPL_BITS_8`, `PPL_BITS_16`, `PPL_BITS_32`, `PPL_BITS_64`,
`PPL_BITS_128` }
Widths of bounded integer types.
- enum `ppl_enum_Bounded_Integer_Type_Representation` { `PPL_UNSIGNED`, `PPL_SIGNED_2_COMPLEMENT` }
Representation of bounded integer types.
- enum `ppl_enum_Bounded_Integer_Type_Overflow` { `PPL_OVERFLOW_WRAPS`, `PPL_OVERFLOW_UNDEFINED`, `PPL_OVERFLOW_IMPOSSIBLE` }
Overflow behavior of bounded integer types.

Functions

- int `ppl_max_space_dimension` (`ppl_dimension_type` *m)
Writes to `m` the maximum space dimension this library can handle.
- int `ppl_not_a_dimension` (`ppl_dimension_type` *m)
Writes to `m` a value that does not designate a valid dimension.
- int `ppl_io_print_variable` (`ppl_dimension_type` var)
Pretty-prints `var` to `stdout`.
- int `ppl_io_fprint_variable` (FILE *stream, `ppl_dimension_type` var)
Pretty-prints `var` to the given output `stream`.
- int `ppl_io_asprint_variable` (char **strp, `ppl_dimension_type` var)
Pretty-prints `var` to a malloc-allocated string, a pointer to which is returned via `strp`.
- int `ppl_io_set_variable_output_function` (`ppl_io_variable_output_function_type` *p)

Sets the output function to be used for printing variables to `p`.

- `int ppl_io_get_variable_output_function (ppl_io_variable_output_function_type **pp)`
Writes a pointer to the current variable output function to `pp`.
- `char * ppl_io_wrap_string (const char *src, unsigned indent_depth, unsigned preferred_first_line_length, unsigned preferred_line_length)`
Utility function for the wrapping of lines of text.

Variables

- `unsigned int PPL_COMPLEXITY_CLASS_POLYNOMIAL`
Code of the worst-case polynomial complexity class.
- `unsigned int PPL_COMPLEXITY_CLASS_SIMPLEX`
Code of the worst-case exponential but typically polynomial complexity class.
- `unsigned int PPL_COMPLEXITY_CLASS_ANY`
Code of the universal complexity class.
- `unsigned int PPL_POLY_CON_RELATION_IS_DISJOINT`
Individual bit saying that the polyhedron and the set of points satisfying the constraint are disjoint.
- `unsigned int PPL_POLY_CON_RELATION_STRICTLY_INTERSECTS`
Individual bit saying that the polyhedron intersects the set of points satisfying the constraint, but it is not included in it.
- `unsigned int PPL_POLY_CON_RELATION_IS_INCLUDED`
Individual bit saying that the polyhedron is included in the set of points satisfying the constraint.
- `unsigned int PPL_POLY_CON_RELATION_SATURATES`
Individual bit saying that the polyhedron is included in the set of points saturating the constraint.
- `unsigned int PPL_POLY_GEN_RELATION_SUBSUMES`
Individual bit saying that adding the generator would not change the polyhedron.

8.6.1 Detailed Description

Typedefs for the library datatypes and related symbolic constants. The datatypes provided by the library should be manipulated by means of the corresponding opaque pointer types and the functions working on them.

Note

To simplify the detection of common programming mistakes, we provide both pointer-to-const and pointer-to-nonconst opaque pointers, with implicit conversions mapping each pointer-to-nonconst to the corresponding pointer-to-const when needed. The user of the C interface is therefore recommended to adopt the pointer-to-const type whenever read-only access is meant.

8.6.2 Typedef Documentation

8.6.2.1 typedef size_t ppl_dimension_type

An unsigned integral type for representing space dimensions.

Definition at line 497 of file ppl_c.h.

8.6.2.2 typedef const char* ppl_io_variable_output_function_type(ppl_dimension_type var)

The type of output functions used for printing variables.

An output function for variables must write a textual representation for `var` to a character buffer, null-terminate it, and return a pointer to the beginning of the buffer. In case the operation fails, 0 should be returned and perhaps `errno` should be set in a meaningful way. The library does nothing with the buffer, besides printing its contents.

Definition at line 541 of file ppl_c.h.

8.6.3 Enumeration Type Documentation

8.6.3.1 enum ppl_enum_Bounded_Integer_Type_Overflow

Overflow behavior of bounded integer types.

Enumerator:

PPL_OVERFLOW_WRAPS On overflow, wrapping takes place. This means that, for a w -bit bounded integer, the computation happens modulo 2^w .

PPL_OVERFLOW_UNDEFINED On overflow, the result is undefined. This simply means that the result of the operation resulting in an overflow can take any value.

Note

Even though something more serious can happen in the system being analyzed ---due to, e.g., C's undefined behavior---, here we are only concerned with the results of arithmetic operations. It is the responsibility of the analyzer to ensure that other manifestations of undefined behavior are conservatively approximated.

PPL_OVERFLOW_IMPOSSIBLE Overflow is impossible. This is for the analysis of languages where overflow is trapped before it affects the state, for which, thus, any indication that an overflow may have affected the state is necessarily due to the imprecision of the analysis.

Definition at line 2405 of file ppl_c.h.

8.6.3.2 enum ppl_enum_Bounded_Integer_Type_Representation

Representation of bounded integer types.

Enumerator:

PPL_UNSIGNED Unsigned binary.

PPL_SIGNED_2_COMPLEMENT Signed binary where negative values are represented by the two's complement of the absolute value.

Definition at line 2392 of file ppl_c.h.

8.6.3.3 enum ppl_enum_Bounded_Integer_Type_Width

Widths of bounded integer types.

Enumerator:

PPL_BITS_8 8 bits.

PPL_BITS_16 16 bits.

PPL_BITS_32 32 bits.

PPL_BITS_64 64 bits.

PPL_BITS_128 128 bits.

Definition at line 2376 of file ppl_c.h.

8.6.3.4 enum ppl_enum_Constraint_Type

Describes the relations represented by a constraint.

Enumerator:

PPL_CONSTRAINT_TYPE_LESS_THAN The constraint is of the form $e < 0$.

PPL_CONSTRAINT_TYPE_LESS_OR_EQUAL The constraint is of the form $e \leq 0$.

PPL_CONSTRAINT_TYPE_EQUAL The constraint is of the form $e = 0$.

PPL_CONSTRAINT_TYPE_GREATER_OR_EQUAL The constraint is of the form $e \geq 0$.

PPL_CONSTRAINT_TYPE_GREATER_THAN The constraint is of the form $e > 0$.

Definition at line 1125 of file ppl_c.h.

8.6.3.5 enum ppl_enum_Generator_Type

Describes the different kinds of generators.

Enumerator:

PPL_GENERATOR_TYPE_LINE The generator is a line.

PPL_GENERATOR_TYPE_RAY The generator is a ray.

PPL_GENERATOR_TYPE_POINT The generator is a point.

PPL_GENERATOR_TYPE_CLOSURE_POINT The generator is a closure point.

Definition at line 1435 of file ppl_c.h.

8.6.3.6 enum ppl_enum_Grid_Generator_Type

Describes the different kinds of grid generators.

Enumerator:

PPL_GRID_GENERATOR_TYPE_LINE The grid generator is a line.

PPL_GRID_GENERATOR_TYPE_PARAMETER The grid generator is a parameter.

PPL_GRID_GENERATOR_TYPE_POINT The grid generator is a point.

Definition at line 2027 of file ppl_c.h.

8.6.4 Function Documentation

8.6.4.1 int ppl_io_asprint_variable (char ** *strp*, ppl_dimension_type *var*)

Pretty-prints *var* to a malloc-allocated string, a pointer to which is returned via *strp*.

Definition at line 2608 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::c_variable_output_function, PPL_ERROR_OUT_OF_MEMORY, and PPL_STDIO_ERROR.

8.6.4.2 int ppl_io_fprint_variable (FILE * *stream*, ppl_dimension_type *var*)

Pretty-prints *var* to the given output *stream*.

Definition at line 2599 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::c_variable_output_function, and PPL_STDIO_ERROR.

8.6.4.3 int ppl_io_get_variable_output_function (ppl_io_variable_output_function_type ** *pp*)

Writes a pointer to the current variable output function to *pp*.

Definition at line 2672 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::c_variable_output_function.

8.6.4.4 int ppl_io_print_variable (ppl_dimension_type *var*)

Pretty-prints *var* to *stdout*.

Definition at line 2590 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::c_variable_output_function, and PPL_STDIO_ERROR.

8.6.4.5 `int ppl_io_set_variable_output_function (ppl_io_variable_output_function_type * p)`

Sets the output function to be used for printing variables to `p`.

Definition at line 2664 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::c_variable_output_function`.

8.6.4.6 `char* ppl_io_wrap_string (const char * src, unsigned indent_depth, unsigned preferred_first_line_length, unsigned preferred_line_length)`

Utility function for the wrapping of lines of text.

Parameters

src The source string holding the text to wrap.

indent_depth The indentation depth.

preferred_first_line_length The preferred length for the first line of text.

preferred_line_length The preferred length for all the lines but the first one.

Returns

The wrapped string in a malloc-allocated buffer.

Definition at line 2653 of file `ppl_c_implementation_common.cc`.

8.6.4.7 `int ppl_max_space_dimension (ppl_dimension_type * m)`

Writes to `m` the maximum space dimension this library can handle.

Definition at line 383 of file `ppl_c_implementation_common.cc`.

8.6.4.8 `int ppl_not_a_dimension (ppl_dimension_type * m)`

Writes to `m` a value that does not designate a valid dimension.

Definition at line 390 of file `ppl_c_implementation_common.cc`.

8.6.5 Variable Documentation

8.6.5.1 `unsigned int PPL_COMPLEXITY_CLASS_ANY`

Code of the universal complexity class.

Definition at line 149 of file `ppl_c_implementation_common.cc`.

8.6.5.2 unsigned int PPL_COMPLEXITY_CLASS_POLYNOMIAL

Code of the worst-case polynomial complexity class.

Definition at line 147 of file `ppl_c_implementation_common.cc`.

8.6.5.3 unsigned int PPL_COMPLEXITY_CLASS_SIMPLEX

Code of the worst-case exponential but typically polynomial complexity class.

Definition at line 148 of file `ppl_c_implementation_common.cc`.

8.6.5.4 unsigned int PPL_POLY_CON_RELATION_IS_DISJOINT

Individual bit saying that the polyhedron and the set of points satisfying the constraint are disjoint.

Definition at line 140 of file `ppl_c_implementation_common.cc`.

8.6.5.5 unsigned int PPL_POLY_CON_RELATION_IS_INCLUDED

Individual bit saying that the polyhedron is included in the set of points satisfying the constraint.

Definition at line 142 of file `ppl_c_implementation_common.cc`.

8.6.5.6 unsigned int PPL_POLY_CON_RELATION_SATURATES

Individual bit saying that the polyhedron is included in the set of points saturating the constraint.

Definition at line 143 of file `ppl_c_implementation_common.cc`.

8.6.5.7 unsigned int PPL_POLY_CON_RELATION_STRICTLY_INTERSECTS

Individual bit saying that the polyhedron intersects the set of points satisfying the constraint, but it is not included in it.

Definition at line 141 of file `ppl_c_implementation_common.cc`.

8.6.5.8 unsigned int PPL_POLY_GEN_RELATION_SUBSUMES

Individual bit saying that adding the generator would not change the polyhedron.

Definition at line 145 of file `ppl_c_implementation_common.cc`.

9 Namespace Documentation

9.1 Parma_Polyhedra_Library Namespace Reference

Namespaces

- namespace [Interfaces](#)

9.2 Parma_Polyhedra_Library::Interfaces Namespace Reference

Namespaces

- namespace [C](#)

9.3 Parma_Polyhedra_Library::Interfaces::C Namespace Reference

Classes

- class [Array_Partial_Function_Wrapper](#)
A class to wrap an array of fixed length into a partial function interface suitable for the map_space_-dimension() methods.
- class [timeout_exception](#)
- class [deterministic_timeout_exception](#)

Typedefs

- typedef const char * [c_variable_output_function_type](#) ([ppl_dimension_type](#) var)
- typedef void(* [error_handler_type](#)) (enum [ppl_enum_error_code](#) code, const char *description)
- typedef Constraint_System::const_iterator [Constraint_System_const_iterator](#)
- typedef Generator_System::const_iterator [Generator_System_const_iterator](#)
- typedef Congruence_System::const_iterator [Congruence_System_const_iterator](#)
- typedef Grid_Generator_System::const_iterator [Grid_Generator_System_const_iterator](#)
- typedef PIP_Tree_Node::Artificial_Parameter [Artificial_Parameter](#)
- typedef PIP_Tree_Node::Artificial_Parameter_Sequence [Artificial_Parameter_Sequence](#)
- typedef PIP_Tree_Node::Artificial_Parameter_Sequence::const_iterator [Artificial_Parameter_Sequence_const_iterator](#)

Functions

- const char * [c_variable_default_output_function](#) ([ppl_dimension_type](#) var)
- void [cxx_Variable_output_function](#) (std::ostream &s, const Variable &v)
- void [notify_error](#) (enum [ppl_enum_error_code](#) code, const char *description)
- void [reset_timeout](#) ()
- void [reset_deterministic_timeout](#) ()
- Relation_Symbol [relation_symbol](#) (enum [ppl_enum_Constraint_Type](#) t)
- Bounded_Integer_Type_Width [bounded_integer_type_width](#) (enum [ppl_enum_Bounded_Integer_Type_Width](#) w)

- Bounded_Integer_Type_Representation [bounded_integer_type_representation](#) (enum [ppl_enum_Bounded_Integer_Type_Representation](#) r)
- [mpz_class](#) & [reinterpret_mpz_class](#) ([mpz_t](#) n)
Reinterpret an [mpz_t](#) as [mpz_class](#).
- [const Coefficient](#) * [to_const](#) ([ppl_const_Coefficient_t](#) x)
- [Coefficient](#) * [to_nonconst](#) ([ppl_Coefficient_t](#) x)
- [ppl_const_Coefficient_t](#) [to_const](#) ([const Coefficient](#) *x)
- [ppl_Coefficient_t](#) [to_nonconst](#) ([Coefficient](#) *x)
- [const Linear_Expression](#) * [to_const](#) ([ppl_const_Linear_Expression_t](#) x)
- [Linear_Expression](#) * [to_nonconst](#) ([ppl_Linear_Expression_t](#) x)
- [ppl_const_Linear_Expression_t](#) [to_const](#) ([const Linear_Expression](#) *x)
- [ppl_Linear_Expression_t](#) [to_nonconst](#) ([Linear_Expression](#) *x)
- [const Constraint](#) * [to_const](#) ([ppl_const_Constraint_t](#) x)
- [Constraint](#) * [to_nonconst](#) ([ppl_Constraint_t](#) x)
- [ppl_const_Constraint_t](#) [to_const](#) ([const Constraint](#) *x)
- [ppl_Constraint_t](#) [to_nonconst](#) ([Constraint](#) *x)
- [const Constraint_System](#) * [to_const](#) ([ppl_const_Constraint_System_t](#) x)
- [Constraint_System](#) * [to_nonconst](#) ([ppl_Constraint_System_t](#) x)
- [ppl_const_Constraint_System_t](#) [to_const](#) ([const Constraint_System](#) *x)
- [ppl_Constraint_System_t](#) [to_nonconst](#) ([Constraint_System](#) *x)
- [const Constraint_System_const_iterator](#) * [to_const](#) ([ppl_const_Constraint_System_const_iterator_t](#) x)
- [Constraint_System_const_iterator](#) * [to_nonconst](#) ([ppl_Constraint_System_const_iterator_t](#) x)
- [ppl_const_Constraint_System_const_iterator_t](#) [to_const](#) ([const Constraint_System_const_iterator](#) *x)
- [ppl_Constraint_System_const_iterator_t](#) [to_nonconst](#) ([Constraint_System_const_iterator](#) *x)
- [const Generator](#) * [to_const](#) ([ppl_const_Generator_t](#) x)
- [Generator](#) * [to_nonconst](#) ([ppl_Generator_t](#) x)
- [ppl_const_Generator_t](#) [to_const](#) ([const Generator](#) *x)
- [ppl_Generator_t](#) [to_nonconst](#) ([Generator](#) *x)
- [const Generator_System](#) * [to_const](#) ([ppl_const_Generator_System_t](#) x)
- [Generator_System](#) * [to_nonconst](#) ([ppl_Generator_System_t](#) x)
- [ppl_const_Generator_System_t](#) [to_const](#) ([const Generator_System](#) *x)
- [ppl_Generator_System_t](#) [to_nonconst](#) ([Generator_System](#) *x)
- [const Generator_System_const_iterator](#) * [to_const](#) ([ppl_const_Generator_System_const_iterator_t](#) x)
- [Generator_System_const_iterator](#) * [to_nonconst](#) ([ppl_Generator_System_const_iterator_t](#) x)
- [ppl_const_Generator_System_const_iterator_t](#) [to_const](#) ([const Generator_System_const_iterator](#) *x)
- [ppl_Generator_System_const_iterator_t](#) [to_nonconst](#) ([Generator_System_const_iterator](#) *x)
- [const Congruence](#) * [to_const](#) ([ppl_const_Congruence_t](#) x)
- [Congruence](#) * [to_nonconst](#) ([ppl_Congruence_t](#) x)
- [ppl_const_Congruence_t](#) [to_const](#) ([const Congruence](#) *x)
- [ppl_Congruence_t](#) [to_nonconst](#) ([Congruence](#) *x)
- [const Congruence_System](#) * [to_const](#) ([ppl_const_Congruence_System_t](#) x)
- [Congruence_System](#) * [to_nonconst](#) ([ppl_Congruence_System_t](#) x)
- [ppl_const_Congruence_System_t](#) [to_const](#) ([const Congruence_System](#) *x)
- [ppl_Congruence_System_t](#) [to_nonconst](#) ([Congruence_System](#) *x)
- [const Congruence_System_const_iterator](#) * [to_const](#) ([ppl_const_Congruence_System_const_iterator_t](#) x)

- [Congruence_System_const_iterator](#) * [to_nonconst](#) (ppl_Congruence_System_const_iterator_t x)
- ppl_const_Congruence_System_const_iterator_t [to_const](#) (const [Congruence_System_const_iterator](#) *x)
- ppl_Congruence_System_const_iterator_t [to_nonconst](#) ([Congruence_System_const_iterator](#) *x)
- const Grid_Generator * [to_const](#) (ppl_const_Grid_Generator_t x)
- Grid_Generator * [to_nonconst](#) (ppl_Grid_Generator_t x)
- ppl_const_Grid_Generator_t [to_const](#) (const Grid_Generator *x)
- ppl_Grid_Generator_t [to_nonconst](#) (Grid_Generator *x)
- const Grid_Generator_System * [to_const](#) (ppl_const_Grid_Generator_System_t x)
- Grid_Generator_System * [to_nonconst](#) (ppl_Grid_Generator_System_t x)
- ppl_const_Grid_Generator_System_t [to_const](#) (const Grid_Generator_System *x)
- ppl_Grid_Generator_System_t [to_nonconst](#) (Grid_Generator_System *x)
- const [Grid_Generator_System_const_iterator](#) * [to_const](#) (ppl_const_Grid_Generator_System_const_iterator_t x)
- [Grid_Generator_System_const_iterator](#) * [to_nonconst](#) (ppl_Grid_Generator_System_const_iterator_t x)
- ppl_const_Grid_Generator_System_const_iterator_t [to_const](#) (const [Grid_Generator_System_const_iterator](#) *x)
- ppl_Grid_Generator_System_const_iterator_t [to_nonconst](#) ([Grid_Generator_System_const_iterator](#) *x)
- const [Artificial_Parameter](#) * [to_const](#) (ppl_const_Artificial_Parameter_t x)
- [Artificial_Parameter](#) * [to_nonconst](#) (ppl_Artificial_Parameter_t x)
- ppl_const_Artificial_Parameter_t [to_const](#) (const [Artificial_Parameter](#) *x)
- ppl_Artificial_Parameter_t [to_nonconst](#) ([Artificial_Parameter](#) *x)
- const [Artificial_Parameter_Sequence](#) * [to_const](#) (ppl_const_Artificial_Parameter_Sequence_t x)
- [Artificial_Parameter_Sequence](#) * [to_nonconst](#) (ppl_Artificial_Parameter_Sequence_t x)
- ppl_const_Artificial_Parameter_Sequence_t [to_const](#) (const [Artificial_Parameter_Sequence](#) *x)
- ppl_Artificial_Parameter_Sequence_t [to_nonconst](#) ([Artificial_Parameter_Sequence](#) *x)
- const [Artificial_Parameter_Sequence_const_iterator](#) * [to_const](#) (ppl_const_Artificial_Parameter_Sequence_const_iterator_t x)
- [Artificial_Parameter_Sequence_const_iterator](#) * [to_nonconst](#) (ppl_Artificial_Parameter_Sequence_const_iterator_t x)
- ppl_const_Artificial_Parameter_Sequence_const_iterator_t [to_const](#) (const [Artificial_Parameter_Sequence_const_iterator](#) *x)
- ppl_Artificial_Parameter_Sequence_const_iterator_t [to_nonconst](#) ([Artificial_Parameter_Sequence_const_iterator](#) *x)
- const MIP_Problem * [to_const](#) (ppl_const_MIP_Problem_t x)
- MIP_Problem * [to_nonconst](#) (ppl_MIP_Problem_t x)
- ppl_const_MIP_Problem_t [to_const](#) (const MIP_Problem *x)
- ppl_MIP_Problem_t [to_nonconst](#) (MIP_Problem *x)
- const PIP_Problem * [to_const](#) (ppl_const_PIP_Problem_t x)
- PIP_Problem * [to_nonconst](#) (ppl_PIP_Problem_t x)
- ppl_const_PIP_Problem_t [to_const](#) (const PIP_Problem *x)
- ppl_PIP_Problem_t [to_nonconst](#) (PIP_Problem *x)
- const PIP_Tree_Node * [to_const](#) (ppl_const_PIP_Tree_Node_t x)
- PIP_Tree_Node * [to_nonconst](#) (ppl_PIP_Tree_Node_t x)
- ppl_const_PIP_Tree_Node_t [to_const](#) (const PIP_Tree_Node *x)
- ppl_PIP_Tree_Node_t [to_nonconst](#) (PIP_Tree_Node *x)
- const PIP_Decision_Node * [to_const](#) (ppl_const_PIP_Decision_Node_t x)
- PIP_Decision_Node * [to_nonconst](#) (ppl_PIP_Decision_Node_t x)
- ppl_const_PIP_Decision_Node_t [to_const](#) (const PIP_Decision_Node *x)

- `ppl_PIP_Decision_Node_t to_nonconst` (`PIP_Decision_Node *x`)
- `const PIP_Solution_Node * to_const` (`ppl_const_PIP_Solution_Node_t x`)
- `PIP_Solution_Node * to_nonconst` (`ppl_PIP_Solution_Node_t x`)
- `ppl_const_PIP_Solution_Node_t to_const` (`const PIP_Solution_Node *x`)
- `ppl_PIP_Solution_Node_t to_nonconst` (`PIP_Solution_Node *x`)
- `Bounded_Integer_Type_Overflow bounded_integer_type_overflow` (enum `ppl_enum_Bounded_Integer_Type_Overflow` o)

Variables

- `error_handler_type user_error_handler` = 0
- `ppl_io_variable_output_function_type * c_variable_output_function`
- `Variable::output_function_type * saved_cxx_Variable_output_function`

9.3.1 Typedef Documentation

9.3.1.1 `typedef PIP_Tree_Node::Artificial_Parameter Parma_Polyhedra_Library::Interfaces::C::Artificial_Parameter`

Definition at line 80 of file `ppl_c_implementation_common.inlines.hh`.

9.3.1.2 `typedef PIP_Tree_Node::Artificial_Parameter_Sequence Parma_Polyhedra_Library::Interfaces::C::Artificial_Parameter_Sequence`

Definition at line 84 of file `ppl_c_implementation_common.inlines.hh`.

9.3.1.3 `typedef PIP_Tree_Node::Artificial_Parameter_Sequence::const_iterator Parma_Polyhedra_Library::Interfaces::C::Artificial_Parameter_Sequence_const_iterator`

Definition at line 89 of file `ppl_c_implementation_common.inlines.hh`.

9.3.1.4 `typedef const char* Parma_Polyhedra_Library::Interfaces::C::c_variable_output_function_type(ppl_dimension_type var)`

Definition at line 81 of file `ppl_c_implementation_common.cc`.

9.3.1.5 `typedef Congruence_System::const_iterator Parma_Polyhedra_Library::Interfaces::C::Congruence_System_const_iterator`

Definition at line 66 of file `ppl_c_implementation_common.inlines.hh`.

9.3.1.6 `typedef Constraint_System::const_iterator Parma_Polyhedra_Library::Interfaces::C::Constraint_System_const_iterator`

Definition at line 50 of file `ppl_c_implementation_common.inlines.hh`.

9.3.1.7 `typedef void(* Parma_Polyhedra_Library::Interfaces::C::error_handler_type)(enum ppl_enum_error_code code, const char *description)`

Definition at line 42 of file `ppl_c_implementation_common.defs.hh`.

9.3.1.8 `typedef Generator_System::const_iterator Parma_Polyhedra_Library::Interfaces::C::Generator_System_const_iterator`

Definition at line 58 of file `ppl_c_implementation_common.inlines.hh`.

9.3.1.9 `typedef Grid_Generator_System::const_iterator Parma_Polyhedra_Library::Interfaces::C::Grid_Generator_System_const_iterator`

Definition at line 75 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2 Function Documentation

9.3.2.1 `Bounded_Integer_Type_Overflow Parma_Polyhedra_Library::Interfaces::C::bounded_integer_type_overflow (enum ppl_enum_Bounded_Integer_Type_Overflow o) [inline]`

Definition at line 152 of file `ppl_c_implementation_common.inlines.hh`.

References `PPL_OVERFLOW_IMPOSSIBLE`, `PPL_OVERFLOW_UNDEFINED`, and `PPL_OVERFLOW_WRAPS`.

9.3.2.2 `Bounded_Integer_Type_Representation Parma_Polyhedra_Library::Interfaces::C::bounded_integer_type_representation (enum ppl_enum_Bounded_Integer_Type_Representation r) [inline]`

Definition at line 140 of file `ppl_c_implementation_common.inlines.hh`.

References `PPL_SIGNED_2_COMPLEMENT`, and `PPL_UNSIGNED`.

9.3.2.3 Bounded_Integer_Type_Width Parma_Polyhedra_Library::Interfaces::C::bounded_integer_type_width (enum ppl_enum_Bounded_Integer_Type_Width *w*) [inline]

Definition at line 122 of file ppl_c_implementation_common.inlines.hh.

References PPL_BITS_128, PPL_BITS_16, PPL_BITS_32, PPL_BITS_64, and PPL_BITS_8.

9.3.2.4 const char* Parma_Polyhedra_Library::Interfaces::C::c_variable_default_output_function (ppl_dimension_type *var*)

Definition at line 32 of file ppl_c_implementation_common.cc.

References CONVERSION, FORMAT, and user_error_handler.

Referenced by ppl_initialize().

9.3.2.5 void Parma_Polyhedra_Library::Interfaces::C::cxx_Variable_output_function (std::ostream & *s*, const Variable & *v*)

Definition at line 71 of file ppl_c_implementation_common.cc.

References c_variable_output_function.

Referenced by ppl_initialize().

9.3.2.6 void Parma_Polyhedra_Library::Interfaces::C::notify_error (enum ppl_enum_error_code *code*, const char * *description*)

9.3.2.7 mpz_class& Parma_Polyhedra_Library::Interfaces::C::reinterpret_mpz_class (mpz_t *n*) [inline]

Reinterpret an mpz_t as mpz_class.

Definition at line 38 of file ppl_c_implementation_common.inlines.hh.

Referenced by ppl_assign_Coefficient_from_mpz_t(), ppl_Coefficient_max(), ppl_Coefficient_min(), ppl_Coefficient_to_mpz_t(), and ppl_new_Coefficient_from_mpz_t().

9.3.2.8 Relation_Symbol Parma_Polyhedra_Library::Interfaces::C::relation_symbol (enum ppl_enum_Constraint_Type *t*) [inline]

Definition at line 104 of file ppl_c_implementation_common.inlines.hh.

References PPL_CONSTRAINT_TYPE_EQUAL, PPL_CONSTRAINT_TYPE_GREATER_OR_EQUAL, PPL_CONSTRAINT_TYPE_GREATER_THAN, PPL_CONSTRAINT_TYPE_LESS_OR_EQUAL, and PPL_CONSTRAINT_TYPE_LESS_THAN.

9.3.2.9 void Parma_Polyhedra_Library::Interfaces::C::reset_deterministic_timeout ()

Referenced by ppl_reset_deterministic_timeout(), and ppl_set_deterministic_timeout().

9.3.2.10 void Parma_Polyhedra_Library::Interfaces::C::reset_timeout ()

Referenced by ppl_reset_timeout(), and ppl_set_timeout().

9.3.2.11 ppl_const_PIP_Solution_Node_t Parma_Polyhedra_Library::Interfaces::C::to_const (const PIP_Solution_Node * x) [inline]

Definition at line 101 of file ppl_c_implementation_common.inlines.hh.

9.3.2.12 const PIP_Solution_Node* Parma_Polyhedra_Library::Interfaces::C::to_const (ppl_const_PIP_Solution_Node_t x) [inline]

Definition at line 101 of file ppl_c_implementation_common.inlines.hh.

9.3.2.13 ppl_const_PIP_Decision_Node_t Parma_Polyhedra_Library::Interfaces::C::to_const (const PIP_Decision_Node * x) [inline]

Definition at line 99 of file ppl_c_implementation_common.inlines.hh.

9.3.2.14 const PIP_Decision_Node* Parma_Polyhedra_Library::Interfaces::C::to_const (ppl_const_PIP_Decision_Node_t x) [inline]

Definition at line 99 of file ppl_c_implementation_common.inlines.hh.

9.3.2.15 ppl_const_PIP_Tree_Node_t Parma_Polyhedra_Library::Interfaces::C::to_const (const PIP_Tree_Node * x) [inline]

Definition at line 97 of file ppl_c_implementation_common.inlines.hh.

9.3.2.16 `const PIP_Tree_Node* Parma_Polyhedra_Library::Interfaces::C::to_const
(ppl_const_PIP_Tree_Node_t x) [inline]`

Definition at line 97 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.17 `ppl_const_PIP_Problem_t Parma_Polyhedra_Library::Interfaces::C::to_const (const
PIP_Problem * x) [inline]`

Definition at line 95 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.18 `const PIP_Problem* Parma_Polyhedra_Library::Interfaces::C::to_const
(ppl_const_PIP_Problem_t x) [inline]`

Definition at line 95 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.19 `ppl_const_MIP_Problem_t Parma_Polyhedra_Library::Interfaces::C::to_const (const
MIP_Problem * x) [inline]`

Definition at line 93 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.20 `const MIP_Problem* Parma_Polyhedra_Library::Interfaces::C::to_const
(ppl_const_MIP_Problem_t x) [inline]`

Definition at line 93 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.21 `ppl_const_Artificial_Parameter_Sequence_const_iterator_t Parma_Polyhedra_-
Library::Interfaces::C::to_const (const Artificial_Parameter_Sequence_const_iterator *
x) [inline]`

Definition at line 91 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.22 `const Artificial_Parameter_Sequence_const_iterator* Parma_Polyhedra_-
Library::Interfaces::C::to_const (ppl_const_Artificial_Parameter_Sequence_const_-
iterator_t x) [inline]`

Definition at line 91 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.23 `ppl_const_Artificial_Parameter_Sequence_t Parma_Polyhedra_Library::Interfaces::C::to_const (const Artificial_Parameter_Sequence * x) [inline]`

Definition at line 86 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.24 `const Artificial_Parameter_Sequence* Parma_Polyhedra_Library::Interfaces::C::to_const (ppl_const_Artificial_Parameter_Sequence_t x) [inline]`

Definition at line 86 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.25 `ppl_const_Artificial_Parameter_t Parma_Polyhedra_Library::Interfaces::C::to_const (const Artificial_Parameter * x) [inline]`

Definition at line 81 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.26 `const Artificial_Parameter* Parma_Polyhedra_Library::Interfaces::C::to_const (ppl_const_Artificial_Parameter_t x) [inline]`

Definition at line 81 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.27 `ppl_const_Grid_Generator_System_const_iterator_t Parma_Polyhedra_Library::Interfaces::C::to_const (const Grid_Generator_System_const_iterator * x) [inline]`

Definition at line 77 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.28 `const Grid_Generator_System_const_iterator* Parma_Polyhedra_Library::Interfaces::C::to_const (ppl_const_Grid_Generator_System_const_iterator_t x) [inline]`

Definition at line 77 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.29 `ppl_const_Grid_Generator_System_t Parma_Polyhedra_Library::Interfaces::C::to_const (const Grid_Generator_System * x) [inline]`

Definition at line 72 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.30 `const Grid_Generator_System* Parma_Polyhedra_Library::Interfaces::C::to_const
(ppl_const_Grid_Generator_System_t x) [inline]`

Definition at line 72 of file ppl_c_implementation_common.inlines.hh.

9.3.2.31 `ppl_const_Grid_Generator_t Parma_Polyhedra_Library::Interfaces::C::to_const (const
Grid_Generator * x) [inline]`

Definition at line 70 of file ppl_c_implementation_common.inlines.hh.

9.3.2.32 `const Grid_Generator* Parma_Polyhedra_Library::Interfaces::C::to_const
(ppl_const_Grid_Generator_t x) [inline]`

Definition at line 70 of file ppl_c_implementation_common.inlines.hh.

9.3.2.33 `ppl_const_Congruence_System_const_iterator_t Parma_Polyhedra -
Library::Interfaces::C::to_const (const Congruence_System_const_iterator * x)
[inline]`

Definition at line 68 of file ppl_c_implementation_common.inlines.hh.

9.3.2.34 `const Congruence_System_const_iterator* Parma_Polyhedra -
Library::Interfaces::C::to_const (ppl_const_Congruence_System_const_iterator_t x)
[inline]`

Definition at line 68 of file ppl_c_implementation_common.inlines.hh.

9.3.2.35 `ppl_const_Congruence_System_t Parma_Polyhedra_Library::Interfaces::C::to_const
(const Congruence_System * x) [inline]`

Definition at line 64 of file ppl_c_implementation_common.inlines.hh.

9.3.2.36 `const Congruence_System* Parma_Polyhedra_Library::Interfaces::C::to_const
(ppl_const_Congruence_System_t x) [inline]`

Definition at line 64 of file ppl_c_implementation_common.inlines.hh.

9.3.2.37 `ppl_const_Congruence_t Parma_Polyhedra_Library::Interfaces::C::to_const (const Congruence * x) [inline]`

Definition at line 62 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.38 `const Congruence* Parma_Polyhedra_Library::Interfaces::C::to_const (ppl_const_Congruence_t x) [inline]`

Definition at line 62 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.39 `ppl_const_Generator_System_const_iterator_t Parma_Polyhedra_Library::Interfaces::C::to_const (const Generator_System_const_iterator * x) [inline]`

Definition at line 60 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.40 `const Generator_System_const_iterator* Parma_Polyhedra_Library::Interfaces::C::to_const (ppl_const_Generator_System_const_iterator_t x) [inline]`

Definition at line 60 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.41 `ppl_const_Generator_System_t Parma_Polyhedra_Library::Interfaces::C::to_const (const Generator_System * x) [inline]`

Definition at line 56 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.42 `const Generator_System* Parma_Polyhedra_Library::Interfaces::C::to_const (ppl_const_Generator_System_t x) [inline]`

Definition at line 56 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.43 `ppl_const_Generator_t Parma_Polyhedra_Library::Interfaces::C::to_const (const Generator * x) [inline]`

Definition at line 54 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.44 `const Generator* Parma_Polyhedra_Library::Interfaces::C::to_const
(ppl_const_Generator_t x) [inline]`

Definition at line 54 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.45 `ppl_const_Constraint_System_const_iterator_t Parma_Polyhedra_-
Library::Interfaces::C::to_const (const Constraint_System_const_iterator * x)
[inline]`

Definition at line 52 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.46 `const Constraint_System_const_iterator* Parma_Polyhedra_-
Library::Interfaces::C::to_const (ppl_const_Constraint_System_const_iterator_t x)
[inline]`

Definition at line 52 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.47 `ppl_const_Constraint_System_t Parma_Polyhedra_Library::Interfaces::C::to_const
(const Constraint_System * x) [inline]`

Definition at line 48 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.48 `const Constraint_System* Parma_Polyhedra_Library::Interfaces::C::to_const
(ppl_const_Constraint_System_t x) [inline]`

Definition at line 48 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.49 `ppl_const_Constraint_t Parma_Polyhedra_Library::Interfaces::C::to_const (const
Constraint * x) [inline]`

Definition at line 46 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.50 `const Constraint* Parma_Polyhedra_Library::Interfaces::C::to_const
(ppl_const_Constraint_t x) [inline]`

Definition at line 46 of file `ppl_c_implementation_common.inlines.hh`.

**9.3.2.51 `ppl_const_Linear_Expression_t` Parma_Polyhedra_Library::Interfaces::C::to_const
(const Linear_Expression * x) [inline]**

Definition at line 44 of file `ppl_c_implementation_common.inlines.hh`.

**9.3.2.52 `const Linear_Expression*` Parma_Polyhedra_Library::Interfaces::C::to_const
(ppl_const_Linear_Expression_t x) [inline]**

Definition at line 44 of file `ppl_c_implementation_common.inlines.hh`.

**9.3.2.53 `ppl_const_Coefficient_t` Parma_Polyhedra_Library::Interfaces::C::to_const (const
Coefficient * x) [inline]**

Definition at line 42 of file `ppl_c_implementation_common.inlines.hh`.

**9.3.2.54 `const Coefficient*` Parma_Polyhedra_Library::Interfaces::C::to_const
(ppl_const_Coefficient_t x) [inline]**

Definition at line 42 of file `ppl_c_implementation_common.inlines.hh`.

Referenced by `ppl_add_Linear_Expression_to_Linear_Expression()`, `ppl_Artificial_Parameter_-
coefficient()`, `ppl_Artificial_Parameter_denominator()`, `ppl_Artificial_Parameter_get_Linear_-
Expression()`, `ppl_Artificial_Parameter_inhomogeneous_term()`, `ppl_Artificial_Parameter_Sequence_-
const_iterator_dereference()`, `ppl_Artificial_Parameter_Sequence_const_iterator_equal_test()`, `ppl_-
assign_Artificial_Parameter_Sequence_const_iterator_from_Artificial_Parameter_Sequence_const_-
iterator()`, `ppl_assign_Coefficient_from_Coefficient()`, `ppl_assign_Congruence_from_Congruence()`,
`ppl_assign_Congruence_System_const_iterator_from_Congruence_System_const_iterator()`, `ppl_-
assign_Congruence_System_from_Congruence_System()`, `ppl_assign_Constraint_from_Constraint()`,
`ppl_assign_Constraint_System_const_iterator_from_Constraint_System_const_iterator()`, `ppl_assign_-
Constraint_System_from_Constraint_System()`, `ppl_assign_Generator_from_Generator()`, `ppl_assign_-
Generator_System_const_iterator_from_Generator_System_const_iterator()`, `ppl_assign_Generator_-
System_from_Generator_System()`, `ppl_assign_Grid_Generator_from_Grid_Generator()`, `ppl_assign_-
Grid_Generator_System_const_iterator_from_Grid_Generator_System_const_iterator()`, `ppl_assign_-
Grid_Generator_System_from_Grid_Generator_System()`, `ppl_assign_Linear_Expression_from_-
Linear_Expression()`, `ppl_assign_MIP_Problem_from_MIP_Problem()`, `ppl_assign_PIP_Problem_-
from_PIP_Problem()`, `ppl_Coefficient_to_mpz_t()`, `ppl_Congruence_coefficient()`, `ppl_Congruence_-
inhomogeneous_term()`, `ppl_Congruence_modulus()`, `ppl_Congruence_OK()`, `ppl_Congruence_-
space_dimension()`, `ppl_Congruence_System_begin()`, `ppl_Congruence_System_const_iterator_-
dereference()`, `ppl_Congruence_System_const_iterator_equal_test()`, `ppl_Congruence_System_empty()`,
`ppl_Congruence_System_end()`, `ppl_Congruence_System_insert_Congruence()`, `ppl_Congruence_-
System_OK()`, `ppl_Congruence_System_space_dimension()`, `ppl_Constraint_coefficient()`, `ppl_-
Constraint_inhomogeneous_term()`, `ppl_Constraint_OK()`, `ppl_Constraint_space_dimension()`, `ppl_-
Constraint_System_begin()`, `ppl_Constraint_System_const_iterator_dereference()`, `ppl_Constraint_-
System_const_iterator_equal_test()`, `ppl_Constraint_System_empty()`, `ppl_Constraint_System_-
end()`, `ppl_Constraint_System_has_strict_inequalities()`, `ppl_Constraint_System_insert_Constraint()`,
`ppl_Constraint_System_OK()`, `ppl_Constraint_System_space_dimension()`, `ppl_Constraint_type()`,

ppl_delete_Artificial_Parameter_Sequence_const_iterator(), ppl_delete_Coefficient(), ppl_delete_Congruence(), ppl_delete_Congruence_System(), ppl_delete_Congruence_System_const_iterator(), ppl_delete_Constraint(), ppl_delete_Constraint_System(), ppl_delete_Constraint_System_const_iterator(), ppl_delete_Generator(), ppl_delete_Generator_System(), ppl_delete_Generator_System_const_iterator(), ppl_delete_Grid_Generator(), ppl_delete_Grid_Generator_System(), ppl_delete_Grid_Generator_System_const_iterator(), ppl_delete_Linear_Expression(), ppl_delete_MIP_Problem(), ppl_delete_PIP_Problem(), ppl_Generator_coefficient(), ppl_Generator_divisor(), ppl_Generator_OK(), ppl_Generator_space_dimension(), ppl_Generator_System_begin(), ppl_Generator_System_const_iterator_dereference(), ppl_Generator_System_const_iterator_equal_test(), ppl_Generator_System_empty(), ppl_Generator_System_end(), ppl_Generator_System_insert_Generator(), ppl_Generator_System_OK(), ppl_Generator_System_space_dimension(), ppl_Generator_type(), ppl_Grid_Generator_coefficient(), ppl_Grid_Generator_divisor(), ppl_Grid_Generator_OK(), ppl_Grid_Generator_space_dimension(), ppl_Grid_Generator_System_begin(), ppl_Grid_Generator_System_const_iterator_dereference(), ppl_Grid_Generator_System_const_iterator_equal_test(), ppl_Grid_Generator_System_empty(), ppl_Grid_Generator_System_end(), ppl_Grid_Generator_System_insert_Grid_Generator(), ppl_Grid_Generator_System_OK(), ppl_Grid_Generator_System_space_dimension(), ppl_Grid_Generator_type(), ppl_Linear_Expression_add_to_coefficient(), ppl_Linear_Expression_add_to_inhomogeneous(), ppl_Linear_Expression_all_homogeneous_terms_are_zero(), ppl_Linear_Expression_coefficient(), ppl_Linear_Expression_inhomogeneous_term(), ppl_Linear_Expression_is_zero(), ppl_Linear_Expression_OK(), ppl_Linear_Expression_space_dimension(), ppl_MIP_Problem_add_constraint(), ppl_MIP_Problem_add_constraints(), ppl_MIP_Problem_constraint_at_index(), ppl_MIP_Problem_evaluate_objective_function(), ppl_MIP_Problem_external_memory_in_bytes(), ppl_MIP_Problem_feasible_point(), ppl_MIP_Problem_get_control_parameter(), ppl_MIP_Problem_integer_space_dimensions(), ppl_MIP_Problem_is_satisfiable(), ppl_MIP_Problem_number_of_constraints(), ppl_MIP_Problem_number_of_integer_space_dimensions(), ppl_MIP_Problem_objective_function(), ppl_MIP_Problem_OK(), ppl_MIP_Problem_optimal_value(), ppl_MIP_Problem_optimization_mode(), ppl_MIP_Problem_optimizing_point(), ppl_MIP_Problem_set_objective_function(), ppl_MIP_Problem_solve(), ppl_MIP_Problem_space_dimension(), ppl_MIP_Problem_total_memory_in_bytes(), ppl_multiply_Linear_Expression_by_Coefficient(), ppl_new_Artificial_Parameter_Sequence_const_iterator_from_Artificial_Parameter_Sequence_const_iterator(), ppl_new_Coefficient_from_Coefficient(), ppl_new_Congruence(), ppl_new_Congruence_from_Congruence(), ppl_new_Congruence_System_const_iterator_from_Congruence_System_const_iterator(), ppl_new_Congruence_System_from_Congruence(), ppl_new_Congruence_System_from_Congruence_System(), ppl_new_Constraint(), ppl_new_Constraint_from_Constraint(), ppl_new_Constraint_System_const_iterator_from_Constraint_System_const_iterator(), ppl_new_Constraint_System_from_Constraint(), ppl_new_Constraint_System_from_Constraint_System(), ppl_new_Generator(), ppl_new_Generator_from_Generator(), ppl_new_Generator_System_const_iterator_from_Generator_System_const_iterator(), ppl_new_Generator_System_from_Generator(), ppl_new_Generator_System_from_Generator_System(), ppl_new_Grid_Generator(), ppl_new_Grid_Generator_from_Grid_Generator(), ppl_new_Grid_Generator_System_const_iterator_from_Grid_Generator_System_const_iterator(), ppl_new_Grid_Generator_System_from_Grid_Generator(), ppl_new_Grid_Generator_System_from_Grid_Generator_System(), ppl_new_Linear_Expression_from_Congruence(), ppl_new_Linear_Expression_from_Constraint(), ppl_new_Linear_Expression_from_Generator(), ppl_new_Linear_Expression_from_Linear_Expression(), ppl_new_MIP_Problem(), ppl_new_MIP_Problem_from_MIP_Problem(), ppl_new_PIP_Problem_from_constraints(), ppl_new_PIP_Problem_from_PIP_Problem(), ppl_PIP_Decision_Node_get_child_node(), ppl_PIP_Decision_Node_OK(), ppl_PIP_Problem_add_constraint(), ppl_PIP_Problem_add_constraints(), ppl_PIP_Problem_constraint_at_index(), ppl_PIP_Problem_external_memory_in_bytes(), ppl_PIP_Problem_get_big_parameter_dimension(), ppl_PIP_Problem_get_control_parameter(), ppl_PIP_Problem_is_satisfiable(), ppl_PIP_Problem_number_of_constraints(), ppl_PIP_Problem_number_of_parameter_space_dimensions(), ppl_PIP_Problem_OK(), ppl_PIP_Problem_optimizing_solution(), ppl_PIP_Problem_parameter_space_dimensions(), ppl_PIP_Problem_solution(), ppl_PIP_Problem_solve(), ppl_PIP_Problem_space_dimension(), ppl_PIP_Problem_total_memory_in_bytes(), ppl_PIP_Solution_Node_get_parametric_values(), ppl_PIP_Solution_Node_OK(), ppl_PIP_Tree_Node_as_decision(), ppl_PIP_Tree_Node_as_solution(), ppl_PIP_Tree_Node_begin(), ppl_PIP_Tree_Node_end(),

ppl_PIP_Tree_Node_get_constraints(), ppl_PIP_Tree_Node_number_of_artificials(), ppl_PIP_Tree_Node_OK(), and ppl_subtract_Linear_Expression_from_Linear_Expression().

9.3.2.55 `ppl_PIP_Solution_Node_t Parma_Polyhedra_Library::Interfaces::C::to_nonconst (PIP_Solution_Node * x) [inline]`

Definition at line 101 of file ppl_c_implementation_common.inlines.hh.

9.3.2.56 `PIP_Solution_Node* Parma_Polyhedra_Library::Interfaces::C::to_nonconst (ppl_PIP_Solution_Node_t x) [inline]`

Definition at line 101 of file ppl_c_implementation_common.inlines.hh.

9.3.2.57 `ppl_PIP_Decision_Node_t Parma_Polyhedra_Library::Interfaces::C::to_nonconst (PIP_Decision_Node * x) [inline]`

Definition at line 99 of file ppl_c_implementation_common.inlines.hh.

9.3.2.58 `PIP_Decision_Node* Parma_Polyhedra_Library::Interfaces::C::to_nonconst (ppl_PIP_Decision_Node_t x) [inline]`

Definition at line 99 of file ppl_c_implementation_common.inlines.hh.

9.3.2.59 `ppl_PIP_Tree_Node_t Parma_Polyhedra_Library::Interfaces::C::to_nonconst (PIP_Tree_Node * x) [inline]`

Definition at line 97 of file ppl_c_implementation_common.inlines.hh.

9.3.2.60 `PIP_Tree_Node* Parma_Polyhedra_Library::Interfaces::C::to_nonconst (ppl_PIP_Tree_Node_t x) [inline]`

Definition at line 97 of file ppl_c_implementation_common.inlines.hh.

9.3.2.61 `ppl_PIP_Problem_t Parma_Polyhedra_Library::Interfaces::C::to_nonconst (PIP_Problem * x) [inline]`

Definition at line 95 of file ppl_c_implementation_common.inlines.hh.

9.3.2.62 `PIP_Problem* Parma_Polyhedra_Library::Interfaces::C::to_nonconst
(ppl_PIP_Problem_t x) [inline]`

Definition at line 95 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.63 `ppl_MIP_Problem_t Parma_Polyhedra_Library::Interfaces::C::to_nonconst
(MIP_Problem * x) [inline]`

Definition at line 93 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.64 `MIP_Problem* Parma_Polyhedra_Library::Interfaces::C::to_nonconst
(ppl_MIP_Problem_t x) [inline]`

Definition at line 93 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.65 `ppl_Artificial_Parameter_Sequence_const_iterator_t Parma_Polyhedra_-
Library::Interfaces::C::to_nonconst (Artificial_Parameter_Sequence_const_iterator * x)
[inline]`

Definition at line 91 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.66 `Artificial_Parameter_Sequence_const_iterator* Parma_Polyhedra_-
Library::Interfaces::C::to_nonconst (ppl_Artificial_Parameter_Sequence_const_-
iterator_t x) [inline]`

Definition at line 91 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.67 `ppl_Artificial_Parameter_Sequence_t Parma_Polyhedra_Library::Interfaces::C::to_-
nonconst (Artificial_Parameter_Sequence * x) [inline]`

Definition at line 86 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.68 `Artificial_Parameter_Sequence* Parma_Polyhedra_Library::Interfaces::C::to_nonconst
(ppl_Artificial_Parameter_Sequence_t x) [inline]`

Definition at line 86 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.69 `ppl_Artificial_Parameter_t` Parma_Polyhedra_Library::Interfaces::C::to_nonconst
(Artificial_Parameter * x) [inline]

Definition at line 81 of file ppl_c_implementation_common.inlines.hh.

9.3.2.70 `Artificial_Parameter*` Parma_Polyhedra_Library::Interfaces::C::to_nonconst
(ppl_Artificial_Parameter_t x) [inline]

Definition at line 81 of file ppl_c_implementation_common.inlines.hh.

9.3.2.71 `ppl_Grid_Generator_System_const_iterator_t` Parma_Polyhedra_-
Library::Interfaces::C::to_nonconst (Grid_Generator_System_const_iterator * x)
[inline]

Definition at line 77 of file ppl_c_implementation_common.inlines.hh.

9.3.2.72 `Grid_Generator_System_const_iterator*` Parma_Polyhedra_-
Library::Interfaces::C::to_nonconst (ppl_Grid_Generator_System_const_iterator_t x)
[inline]

Definition at line 77 of file ppl_c_implementation_common.inlines.hh.

9.3.2.73 `ppl_Grid_Generator_System_t` Parma_Polyhedra_Library::Interfaces::C::to_nonconst
(Grid_Generator_System * x) [inline]

Definition at line 72 of file ppl_c_implementation_common.inlines.hh.

9.3.2.74 `Grid_Generator_System*` Parma_Polyhedra_Library::Interfaces::C::to_nonconst
(ppl_Grid_Generator_System_t x) [inline]

Definition at line 72 of file ppl_c_implementation_common.inlines.hh.

9.3.2.75 `ppl_Grid_Generator_t` Parma_Polyhedra_Library::Interfaces::C::to_nonconst
(Grid_Generator * x) [inline]

Definition at line 70 of file ppl_c_implementation_common.inlines.hh.

9.3.2.76 Grid_Generator* Parma_Polyhedra_Library::Interfaces::C::to_nonconst (ppl_Grid_Generator_t x) [inline]

Definition at line 70 of file ppl_c_implementation_common.inlines.hh.

9.3.2.77 ppl_Congruence_System_const_iterator_t Parma_Polyhedra_Library::Interfaces::C::to_nonconst (Congruence_System_const_iterator * x) [inline]

Definition at line 68 of file ppl_c_implementation_common.inlines.hh.

9.3.2.78 Congruence_System_const_iterator* Parma_Polyhedra_Library::Interfaces::C::to_nonconst (ppl_Congruence_System_const_iterator_t x) [inline]

Definition at line 68 of file ppl_c_implementation_common.inlines.hh.

9.3.2.79 ppl_Congruence_System_t Parma_Polyhedra_Library::Interfaces::C::to_nonconst (Congruence_System * x) [inline]

Definition at line 64 of file ppl_c_implementation_common.inlines.hh.

9.3.2.80 Congruence_System* Parma_Polyhedra_Library::Interfaces::C::to_nonconst (ppl_Congruence_System_t x) [inline]

Definition at line 64 of file ppl_c_implementation_common.inlines.hh.

9.3.2.81 ppl_Congruence_t Parma_Polyhedra_Library::Interfaces::C::to_nonconst (Congruence * x) [inline]

Definition at line 62 of file ppl_c_implementation_common.inlines.hh.

9.3.2.82 Congruence* Parma_Polyhedra_Library::Interfaces::C::to_nonconst (ppl_Congruence_t x) [inline]

Definition at line 62 of file ppl_c_implementation_common.inlines.hh.

9.3.2.83 `ppl_Generator_System_const_iterator_t Parma_Polyhedra_Library::Interfaces::C::to_nonconst (Generator_System_const_iterator * x) [inline]`

Definition at line 60 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.84 `Generator_System_const_iterator* Parma_Polyhedra_Library::Interfaces::C::to_nonconst (ppl_Generator_System_const_iterator_t x) [inline]`

Definition at line 60 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.85 `ppl_Generator_System_t Parma_Polyhedra_Library::Interfaces::C::to_nonconst (Generator_System * x) [inline]`

Definition at line 56 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.86 `Generator_System* Parma_Polyhedra_Library::Interfaces::C::to_nonconst (ppl_Generator_System_t x) [inline]`

Definition at line 56 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.87 `ppl_Generator_t Parma_Polyhedra_Library::Interfaces::C::to_nonconst (Generator * x) [inline]`

Definition at line 54 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.88 `Generator* Parma_Polyhedra_Library::Interfaces::C::to_nonconst (ppl_Generator_t x) [inline]`

Definition at line 54 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.89 `ppl_Constraint_System_const_iterator_t Parma_Polyhedra_Library::Interfaces::C::to_nonconst (Constraint_System_const_iterator * x) [inline]`

Definition at line 52 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.90 `Constraint_System_const_iterator* Parma_Polyhedra_Library::Interfaces::C::to_nonconst (ppl_Constraint_System_const_iterator_t x) [inline]`

Definition at line 52 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.91 `ppl_Constraint_System_t Parma_Polyhedra_Library::Interfaces::C::to_nonconst (Constraint_System * x) [inline]`

Definition at line 48 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.92 `Constraint_System* Parma_Polyhedra_Library::Interfaces::C::to_nonconst (ppl_Constraint_System_t x) [inline]`

Definition at line 48 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.93 `ppl_Constraint_t Parma_Polyhedra_Library::Interfaces::C::to_nonconst (Constraint * x) [inline]`

Definition at line 46 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.94 `Constraint* Parma_Polyhedra_Library::Interfaces::C::to_nonconst (ppl_Constraint_t x) [inline]`

Definition at line 46 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.95 `ppl_Linear_Expression_t Parma_Polyhedra_Library::Interfaces::C::to_nonconst (Linear_Expression * x) [inline]`

Definition at line 44 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.96 `Linear_Expression* Parma_Polyhedra_Library::Interfaces::C::to_nonconst (ppl_Linear_Expression_t x) [inline]`

Definition at line 44 of file `ppl_c_implementation_common.inlines.hh`.

9.3.2.97 `ppl_Coefficient_t Parma_Polyhedra_Library::Interfaces::C::to_nonconst (Coefficient * x) [inline]`

Definition at line 42 of file ppl_c_implementation_common.inlines.hh.

9.3.2.98 Coefficient* Parma_Polyhedra_Library::Interfaces::C::to_nonconst (ppl_Coefficient_t x) [inline]

Definition at line 42 of file ppl_c_implementation_common.inlines.hh.

Referenced by ppl_add_Linear_Expression_to_Linear_Expression(), ppl_Artificial_Parameter_coefficient(), ppl_Artificial_Parameter_denominator(), ppl_Artificial_Parameter_get_Linear_Expression(), ppl_Artificial_Parameter_inhomogeneous_term(), ppl_Artificial_Parameter_Sequence_const_iterator_increment(), ppl_assign_Artificial_Parameter_Sequence_const_iterator_from_Artificial_Parameter_Sequence_const_iterator(), ppl_assign_Coefficient_from_Coefficient(), ppl_assign_Coefficient_from_mpz_t(), ppl_assign_Congruence_from_Congruence(), ppl_assign_Congruence_System_const_iterator_from_Congruence_System_const_iterator(), ppl_assign_Congruence_System_from_Congruence_System(), ppl_assign_Constraint_from_Constraint(), ppl_assign_Constraint_System_const_iterator_from_Constraint_System_const_iterator(), ppl_assign_Constraint_System_from_Constraint_System(), ppl_assign_Generator_from_Generator(), ppl_assign_Generator_System_const_iterator_from_Generator_System_const_iterator(), ppl_assign_Generator_System_from_Generator_System(), ppl_assign_Grid_Generator_from_Grid_Generator(), ppl_assign_Grid_Generator_System_const_iterator_from_Grid_Generator_System_const_iterator(), ppl_assign_Grid_Generator_System_from_Grid_Generator_System(), ppl_assign_Linear_Expression_from_Linear_Expression(), ppl_assign_MIP_Problem_from_MIP_Problem(), ppl_assign_PIP_Problem_from_PIP_Problem(), ppl_Congruence_coefficient(), ppl_Congruence_inhomogeneous_term(), ppl_Congruence_modulus(), ppl_Congruence_System_begin(), ppl_Congruence_System_clear(), ppl_Congruence_System_const_iterator_increment(), ppl_Congruence_System_end(), ppl_Congruence_System_insert_Congruence(), ppl_Constraint_coefficient(), ppl_Constraint_inhomogeneous_term(), ppl_Constraint_System_begin(), ppl_Constraint_System_clear(), ppl_Constraint_System_const_iterator_increment(), ppl_Constraint_System_end(), ppl_Constraint_System_insert_Constraint(), ppl_Generator_coefficient(), ppl_Generator_divisor(), ppl_Generator_System_begin(), ppl_Generator_System_clear(), ppl_Generator_System_const_iterator_increment(), ppl_Generator_System_end(), ppl_Generator_System_insert_Generator(), ppl_Grid_Generator_coefficient(), ppl_Grid_Generator_divisor(), ppl_Grid_Generator_System_begin(), ppl_Grid_Generator_System_clear(), ppl_Grid_Generator_System_const_iterator_increment(), ppl_Grid_Generator_System_end(), ppl_Grid_Generator_System_insert_Grid_Generator(), ppl_Linear_Expression_add_to_coefficient(), ppl_Linear_Expression_add_to_inhomogeneous(), ppl_Linear_Expression_coefficient(), ppl_Linear_Expression_inhomogeneous_term(), ppl_MIP_Problem_add_constraint(), ppl_MIP_Problem_add_constraints(), ppl_MIP_Problem_add_space_dimensions_and_embed(), ppl_MIP_Problem_add_to_integer_space_dimensions(), ppl_MIP_Problem_clear(), ppl_MIP_Problem_evaluate_objective_function(), ppl_MIP_Problem_optimal_value(), ppl_MIP_Problem_set_control_parameter(), ppl_MIP_Problem_set_objective_function(), ppl_MIP_Problem_set_optimization_mode(), ppl_multiply_Linear_Expression_by_Coefficient(), ppl_new_Artificial_Parameter_Sequence_const_iterator(), ppl_new_Artificial_Parameter_Sequence_const_iterator_from_Artificial_Parameter_Sequence_const_iterator(), ppl_new_Coefficient(), ppl_new_Coefficient_from_Coefficient(), ppl_new_Coefficient_from_mpz_t(), ppl_new_Congruence(), ppl_new_Congruence_from_Congruence(), ppl_new_Congruence_System(), ppl_new_Congruence_System_const_iterator(), ppl_new_Congruence_System_const_iterator_from_Congruence_System_const_iterator(), ppl_new_Congruence_System_from_Congruence(), ppl_new_Congruence_System_from_Congruence_System(), ppl_new_Congruence_System_zero_dim_empty(), ppl_new_Congruence_zero_dim_false(), ppl_new_Congruence_zero_dim_integrality(), ppl_new_Constraint(), ppl_new_Constraint_from_Constraint(), ppl_new_Constraint_System(), ppl_new_Constraint_System_const_iterator(), ppl_new_Constraint_System_const_iterator_from_Constraint_System_const_iterator(), ppl_new_Constraint_System_from_Constraint(), ppl_new_Constraint_System_from_Constraint_System(), ppl_new_Constraint_System_zero_dim_empty(), ppl_new_Constraint_zero_dim_false(), ppl_new_Constraint_zero_dim_

positivity(), ppl_new_Generator(), ppl_new_Generator_from_Generator(), ppl_new_Generator_System(), ppl_new_Generator_System_const_iterator(), ppl_new_Generator_System_const_iterator_from_Generator_System_const_iterator(), ppl_new_Generator_System_from_Generator(), ppl_new_Generator_System_from_Generator_System(), ppl_new_Generator_System_zero_dim_univ(), ppl_new_Generator_zero_dim_closure_point(), ppl_new_Generator_zero_dim_point(), ppl_new_Grid_Generator(), ppl_new_Grid_Generator_from_Grid_Generator(), ppl_new_Grid_Generator_System(), ppl_new_Grid_Generator_System_const_iterator(), ppl_new_Grid_Generator_System_const_iterator_from_Grid_Generator_System_const_iterator(), ppl_new_Grid_Generator_System_from_Grid_Generator(), ppl_new_Grid_Generator_System_from_Grid_Generator_System(), ppl_new_Grid_Generator_System_zero_dim_univ(), ppl_new_Grid_Generator_zero_dim_point(), ppl_new_Linear_Expression(), ppl_new_Linear_Expression_from_Congruence(), ppl_new_Linear_Expression_from_Constraint(), ppl_new_Linear_Expression_from_Generator(), ppl_new_Linear_Expression_from_Linear_Expression(), ppl_new_Linear_Expression_with_dimension(), ppl_new_MIP_Problem(), ppl_new_MIP_Problem_from_MIP_Problem(), ppl_new_MIP_Problem_from_space_dimension(), ppl_new_PIP_Problem_from_constraints(), ppl_new_PIP_Problem_from_PIP_Problem(), ppl_new_PIP_Problem_from_space_dimension(), ppl_PIP_Problem_add_constraint(), ppl_PIP_Problem_add_constraints(), ppl_PIP_Problem_add_space_dimensions_and_embed(), ppl_PIP_Problem_add_to_parameter_space_dimensions(), ppl_PIP_Problem_clear(), ppl_PIP_Problem_set_big_parameter_dimension(), ppl_PIP_Problem_set_control_parameter(), ppl_PIP_Tree_Node_begin(), ppl_PIP_Tree_Node_end(), and ppl_subtract_Linear_Expression_from_Linear_Expression().

9.3.3 Variable Documentation

9.3.3.1 ppl_io_variable_output_function_type* Parma_Polyhedra_Library::Interfaces::C::c_variable_output_function

Definition at line 68 of file ppl_c_implementation_common.cc.

Referenced by cxx_Variable_output_function(), ppl_initialize(), ppl_io_asprint_variable(), ppl_io_fprint_variable(), ppl_io_get_variable_output_function(), ppl_io_print_variable(), and ppl_io_set_variable_output_function().

9.3.3.2 Variable::output_function_type* Parma_Polyhedra_Library::Interfaces::C::saved_cxx_Variable_output_function

Definition at line 84 of file ppl_c_implementation_common.cc.

Referenced by ppl_finalize(), and ppl_initialize().

9.3.3.3 error_handler_type Parma_Polyhedra_Library::Interfaces::C::user_error_handler = 0

Definition at line 29 of file ppl_c_implementation_common.cc.

Referenced by c_variable_default_output_function(), and ppl_set_error_handler().

10 Class Documentation

10.1 Parma_Polyhedra_Library::Interfaces::C::Array_Partial_Function_Wrapper Class Reference

A class to wrap an array of fixed length into a partial function interface suitable for the `map_space_dimension()` methods.

```
#include <ppl_c_implementation_common.defs.hh>
```

Public Member Functions

- [Array_Partial_Function_Wrapper](#) (dimension_type *v, size_t n)
Construct a partial function wrapping the first n positions of v.
- bool [has_empty_codomain](#) () const
Returns true if and only if the represented partial function has an empty codomain (i.e., it is always undefined).
- dimension_type [max_in_codomain](#) () const
Returns the maximum value that belongs to the codomain of the partial function.
- bool [maps](#) (dimension_type i, dimension_type &j) const
*Assigns to j the value associated to i by *this, if any.*

Private Attributes

- dimension_type * [vec](#)
Holds the vector implementing the map.
- size_t [vec_size](#)
Holds the size of vec.
- dimension_type [max_in_codomain_](#)
Cache for computing the maximum dimension in the codomain.
- int [empty](#)

10.1.1 Detailed Description

A class to wrap an array of fixed length into a partial function interface suitable for the `map_space_dimension()` methods.

Definition at line 60 of file `ppl_c_implementation_common.defs.hh`.

10.1.2 Constructor & Destructor Documentation

10.1.2.1 Parma_Polyhedra_Library::Interfaces::C::Array_Partial_Function_Wrapper::Array_Partial_Function_Wrapper (dimension_type * v, size_t n) [inline]

Construct a partial function wrapping the first n positions of v .

Definition at line 167 of file ppl_c_implementation_common.inlines.hh.

10.1.3 Member Function Documentation

10.1.3.1 bool Parma_Polyhedra_Library::Interfaces::C::Array_Partial_Function_Wrapper::has_empty_codomain () const [inline]

Returns `true` if and only if the represented partial function has an empty codomain (i.e., it is always undefined).

Definition at line 172 of file ppl_c_implementation_common.inlines.hh.

References `empty`, `vec`, and `vec_size`.

10.1.3.2 bool Parma_Polyhedra_Library::Interfaces::C::Array_Partial_Function_Wrapper::maps (dimension_type i, dimension_type & j) const [inline]

Assigns to j the value associated to i by `*this`, if any.

Let f be the function represented by `*this` and k be the value of i . If f is defined in k , then $f(k)$ is assigned to j and `true` is returned. If f is undefined in k , then `false` is returned.

Definition at line 199 of file ppl_c_implementation_common.inlines.hh.

References `vec`, and `vec_size`.

10.1.3.3 dimension_type Parma_Polyhedra_Library::Interfaces::C::Array_Partial_Function_Wrapper::max_in_codomain () const [inline]

Returns the maximum value that belongs to the codomain of the partial function.

Definition at line 185 of file ppl_c_implementation_common.inlines.hh.

References `max_in_codomain_`, `vec`, and `vec_size`.

10.1.4 Member Data Documentation

10.1.4.1 `int Parma_Polyhedra_Library::Interfaces::C::Array_Partial_Function_Wrapper::empty` [mutable, private]

Cache for computing emptiness: -1 if we still don't know, 0 if not empty, 1 if empty.

Definition at line 103 of file `ppl_c_implementation_common.defs.hh`.

Referenced by `has_empty_codomain()`.

10.1.4.2 `dimension_type Parma_Polyhedra_Library::Interfaces::C::Array_Partial_Function_Wrapper::max_in_codomain` [mutable, private]

Cache for computing the maximum dimension in the codomain.

Definition at line 99 of file `ppl_c_implementation_common.defs.hh`.

Referenced by `max_in_codomain()`.

10.1.4.3 `dimension_type* Parma_Polyhedra_Library::Interfaces::C::Array_Partial_Function_Wrapper::vec` [private]

Holds the vector implementing the map.

Definition at line 93 of file `ppl_c_implementation_common.defs.hh`.

Referenced by `has_empty_codomain()`, `maps()`, and `max_in_codomain()`.

10.1.4.4 `size_t Parma_Polyhedra_Library::Interfaces::C::Array_Partial_Function_Wrapper::vec_size` [private]

Holds the size of `vec`.

Definition at line 96 of file `ppl_c_implementation_common.defs.hh`.

Referenced by `has_empty_codomain()`, `maps()`, and `max_in_codomain()`.

The documentation for this class was generated from the following files:

- [ppl_c_implementation_common.defs.hh](#)
- [ppl_c_implementation_common.inlines.hh](#)

10.2 Parma_Polyhedra_Library::Interfaces::C::deterministic_timeout_exception Class Reference

```
#include <ppl_c_implementation_common.defs.hh>
```

Public Member Functions

- void [throw_me](#) () const
- int [priority](#) () const

10.2.1 Detailed Description

Definition at line 118 of file `ppl_c_implementation_common.defs.hh`.

10.2.2 Member Function Documentation**10.2.2.1 int Parma_Polyhedra_Library::Interfaces::C::deterministic_timeout_exception::priority () const [inline]**

Definition at line 124 of file `ppl_c_implementation_common.defs.hh`.

10.2.2.2 void Parma_Polyhedra_Library::Interfaces::C::deterministic_timeout_exception::throw_me () const [inline]

Definition at line 121 of file `ppl_c_implementation_common.defs.hh`.

The documentation for this class was generated from the following file:

- [ppl_c_implementation_common.defs.hh](#)

10.3 ppl_Artificial_Parameter_Sequence_const_iterator_tag Interface Reference

Types and functions for iterating on PIP artificial parameters.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

Constructors, Assignment and Destructor

- int [ppl_new_Artificial_Parameter_Sequence_const_iterator](#) (ppl_Artificial_Parameter_Sequence_const_iterator_t *p`apit`)
Builds a new 'const iterator' and writes a handle to it at address p`apit`.
- int [ppl_new_Artificial_Parameter_Sequence_const_iterator_from_Artificial_Parameter_Sequence_const_iterator](#) (ppl_Artificial_Parameter_Sequence_const_iterator_t *p`apit`, ppl_const_Artificial_Parameter_Sequence_const_iterator_t `apit`)
Builds a const iterator that is a copy of `apit`; writes a handle for the newly created const iterator at address p`apit`.

- `int ppl_assign_Artificial_Parameter_Sequence_const_iterator_from_Artificial_Parameter_Sequence_const_iterator` (`ppl_Artificial_Parameter_Sequence_const_iterator_t dst`, `ppl_const_Artificial_Parameter_Sequence_const_iterator_t src`)
Assigns a copy of the const iterator `src` to `dst`.
- `int ppl_delete_Artificial_Parameter_Sequence_const_iterator` (`ppl_const_Artificial_Parameter_Sequence_const_iterator_t apit`)
Invalidates the handle `apit`: this makes sure the corresponding resources will eventually be released.

Dereferencing, Incrementing and Equality Testing

- `int ppl_Artificial_Parameter_Sequence_const_iterator_dereference` (`ppl_const_Artificial_Parameter_Sequence_const_iterator_t apit`, `ppl_const_Artificial_Parameter_t *pap`)
Dereference `apit` writing a const handle to the resulting artificial parameter at address `pap`.
- `int ppl_Artificial_Parameter_Sequence_const_iterator_increment` (`ppl_Artificial_Parameter_Sequence_const_iterator_t apit`)
Increment `apit` so that it "points" to the next artificial parameter.
- `int ppl_Artificial_Parameter_Sequence_const_iterator_equal_test` (`ppl_const_Artificial_Parameter_Sequence_const_iterator_t x`, `ppl_const_Artificial_Parameter_Sequence_const_iterator_t y`)
Returns a positive integer if the iterators corresponding to `x` and `y` are equal; returns 0 if they are different.

10.3.1 Detailed Description

Types and functions for iterating on PIP artificial parameters.

10.3.2 Friends And Related Function Documentation

10.3.2.1 `int ppl_Artificial_Parameter_Sequence_const_iterator_dereference` (`ppl_const_Artificial_Parameter_Sequence_const_iterator_t apit`, `ppl_const_Artificial_Parameter_t *pap`) [**related**]

Dereference `apit` writing a const handle to the resulting artificial parameter at address `pap`.

Definition at line 2561 of file `ppl_c_implementation_common.cc`.

10.3.2.2 `int ppl_Artificial_Parameter_Sequence_const_iterator_equal_test` (`ppl_const_Artificial_Parameter_Sequence_const_iterator_t x`, `ppl_const_Artificial_Parameter_Sequence_const_iterator_t y`) [**related**]

Returns a positive integer if the iterators corresponding to `x` and `y` are equal; returns 0 if they are different.

Definition at line 2581 of file `ppl_c_implementation_common.cc`.

10.3.2.3 `int ppl_Artificial_Parameter_Sequence_const_iterator_increment` (`ppl_Artificial_Parameter_Sequence_const_iterator_t apit`) [**related**]

Increment `apit` so that it "points" to the next artificial parameter.

Definition at line 2572 of file `ppl_c_implementation_common.cc`.

10.3.2.4 `int ppl_assign_Artificial_Parameter_Sequence_const_iterator_from_Artificial_Parameter_Sequence_const_iterator` (`ppl_Artificial_Parameter_Sequence_const_iterator_t dst`, `ppl_const_Artificial_Parameter_Sequence_const_iterator_t src`) [**related**]

Assigns a copy of the const iterator `src` to `dst`.

Definition at line 2550 of file `ppl_c_implementation_common.cc`.

10.3.2.5 `int ppl_delete_Artificial_Parameter_Sequence_const_iterator` (`ppl_const_Artificial_Parameter_Sequence_const_iterator_t apit`) [**related**]

Invalidates the handle `apit`: this makes sure the corresponding resources will eventually be released.

Definition at line 2541 of file `ppl_c_implementation_common.cc`.

10.3.2.6 `int ppl_new_Artificial_Parameter_Sequence_const_iterator` (`ppl_Artificial_Parameter_Sequence_const_iterator_t * papit`) [**related**]

Builds a new 'const iterator' and writes a handle to it at address `papit`.

Definition at line 2524 of file `ppl_c_implementation_common.cc`.

10.3.2.7 `int ppl_new_Artificial_Parameter_Sequence_const_iterator_from_Artificial_Parameter_Sequence_const_iterator` (`ppl_Artificial_Parameter_Sequence_const_iterator_t * papit`, `ppl_const_Artificial_Parameter_Sequence_const_iterator_t apit`) [**related**]

Builds a const iterator that is a copy of `apit`; writes a handle for the newly created const iterator at address `papit`.

Definition at line 2532 of file `ppl_c_implementation_common.cc`.

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.4 ppl_Artificial_Parameter_tag Interface Reference

Types and functions for PIP artificial parameters.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_Artificial_Parameter_get_Linear_Expression` (`ppl_const_Artificial_Parameter_t ap`, `ppl_Linear_Expression_t le`)
Copies into `le` the linear expression in artificial parameter `ap`.
- `int ppl_Artificial_Parameter_coefficient` (`ppl_const_Artificial_Parameter_t ap`, `ppl_dimension_type var`, `ppl_Coefficient_t n`)
Copies into `n` the coefficient of variable `var` in the artificial parameter `ap`.
- `int ppl_Artificial_Parameter_get_inhomogeneous_term` (`ppl_const_Artificial_Parameter_t ap`, `ppl_Coefficient_t n`)
Copies into `n` the inhomogeneous term of the artificial parameter `ap`.
- `int ppl_Artificial_Parameter_denominator` (`ppl_const_Artificial_Parameter_t ap`, `ppl_Coefficient_t n`)
Copies into `n` the denominator in artificial parameter `ap`.

10.4.1 Detailed Description

Types and functions for PIP artificial parameters. The types and functions for PIP artificial parameters provide an interface towards *Artificial_Parameter*.

10.4.2 Friends And Related Function Documentation

10.4.2.1 `int ppl_Artificial_Parameter_coefficient` (`ppl_const_Artificial_Parameter_t ap`, `ppl_dimension_type var`, `ppl_Coefficient_t n`) [related]

Copies into `n` the coefficient of variable `var` in the artificial parameter `ap`.

Definition at line 2488 of file `ppl_c_implementation_common.cc`.

10.4.2.2 `int ppl_Artificial_Parameter_denominator` (`ppl_const_Artificial_Parameter_t ap`, `ppl_Coefficient_t n`) [related]

Copies into `n` the denominator in artificial parameter `ap`.

Definition at line 2510 of file `ppl_c_implementation_common.cc`.

10.4.2.3 `int ppl_Artificial_Parameter_get_inhomogeneous_term` (`ppl_const_Artificial_Parameter_t ap`, `ppl_Coefficient_t n`) [related]

Copies into `n` the inhomogeneous term of the artificial parameter `ap`.

10.4.2.4 int ppl_Artificial_Parameter_get_Linear_Expression (ppl_const_Artificial_Parameter_t *ap*, ppl_Linear_Expression_t *le*) [related]

Copies into `le` the linear expression in artificial parameter `ap`.

Definition at line 2478 of file `ppl_c_implementation_common.cc`.

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.5 ppl_BD_Shape_double_tag Interface Reference

Types and functions for [ppl_BD_Shape_double_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- int [ppl_delete_BD_Shape_double](#) (ppl_const_BD_Shape_double_t *ph*)
- int [ppl_new_BD_Shape_double_from_space_dimension](#) (ppl_BD_Shape_double_t **pph*, [ppl_dimension_type](#) *d*, int *empty*)
- int [ppl_new_BD_Shape_double_from_Int8_Box](#) (ppl_BD_Shape_double_t **pph*, ppl_const_Int8_Box_t *ph*)
- int [ppl_new_BD_Shape_double_from_Int16_Box](#) (ppl_BD_Shape_double_t **pph*, ppl_const_Int16_Box_t *ph*)
- int [ppl_new_BD_Shape_double_from_Int32_Box](#) (ppl_BD_Shape_double_t **pph*, ppl_const_Int32_Box_t *ph*)
- int [ppl_new_BD_Shape_double_from_Int64_Box](#) (ppl_BD_Shape_double_t **pph*, ppl_const_Int64_Box_t *ph*)
- int [ppl_new_BD_Shape_double_from_Uint8_Box](#) (ppl_BD_Shape_double_t **pph*, ppl_const_Uint8_Box_t *ph*)
- int [ppl_new_BD_Shape_double_from_Uint16_Box](#) (ppl_BD_Shape_double_t **pph*, ppl_const_Uint16_Box_t *ph*)
- int [ppl_new_BD_Shape_double_from_Uint32_Box](#) (ppl_BD_Shape_double_t **pph*, ppl_const_Uint32_Box_t *ph*)
- int [ppl_new_BD_Shape_double_from_Uint64_Box](#) (ppl_BD_Shape_double_t **pph*, ppl_const_Uint64_Box_t *ph*)
- int [ppl_new_BD_Shape_double_from_Z_Box](#) (ppl_BD_Shape_double_t **pph*, ppl_const_Z_Box_t *ph*)
- int [ppl_new_BD_Shape_double_from_Rational_Box](#) (ppl_BD_Shape_double_t **pph*, ppl_const_Rational_Box_t *ph*)
- int [ppl_new_BD_Shape_double_from_BD_Shape_int8_t](#) (ppl_BD_Shape_double_t **pph*, ppl_const_BD_Shape_int8_t *ph*)
- int [ppl_new_BD_Shape_double_from_BD_Shape_int16_t](#) (ppl_BD_Shape_double_t **pph*, ppl_const_BD_Shape_int16_t *ph*)

- int [ppl_new_BD_Shape_double_from_BD_Shape_int32_t](#) (ppl_BD_Shape_double_t *pph, ppl_const_BD_Shape_int32_t_t ph)
- int [ppl_new_BD_Shape_double_from_BD_Shape_int64_t](#) (ppl_BD_Shape_double_t *pph, ppl_const_BD_Shape_int64_t_t ph)
- int [ppl_new_BD_Shape_double_from_BD_Shape_mpz_class](#) (ppl_BD_Shape_double_t *pph, ppl_const_BD_Shape_mpz_class_t ph)
- int [ppl_new_BD_Shape_double_from_BD_Shape_mpq_class](#) (ppl_BD_Shape_double_t *pph, ppl_const_BD_Shape_mpq_class_t ph)
- int [ppl_new_BD_Shape_double_from_Octagonal_Shape_int8_t](#) (ppl_BD_Shape_double_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph)
- int [ppl_new_BD_Shape_double_from_Octagonal_Shape_int16_t](#) (ppl_BD_Shape_double_t *pph, ppl_const_Octagonal_Shape_int16_t_t_t ph)
- int [ppl_new_BD_Shape_double_from_Octagonal_Shape_int32_t](#) (ppl_BD_Shape_double_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph)
- int [ppl_new_BD_Shape_double_from_Octagonal_Shape_int64_t](#) (ppl_BD_Shape_double_t *pph, ppl_const_Octagonal_Shape_int64_t_t_t ph)
- int [ppl_new_BD_Shape_double_from_Octagonal_Shape_mpz_class](#) (ppl_BD_Shape_double_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph)
- int [ppl_new_BD_Shape_double_from_Octagonal_Shape_mpq_class](#) (ppl_BD_Shape_double_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph)
- int [ppl_new_BD_Shape_double_from_C_Polyhedron](#) (ppl_BD_Shape_double_t *pph, ppl_const_Polyhedron_t ph)
- int [ppl_new_BD_Shape_double_from_NNC_Polyhedron](#) (ppl_BD_Shape_double_t *pph, ppl_const_Polyhedron_t ph)
- int [ppl_new_BD_Shape_double_from_Grid](#) (ppl_BD_Shape_double_t *pph, ppl_const_Grid_t ph)
- int [ppl_new_BD_Shape_double_from_Float_Box](#) (ppl_BD_Shape_double_t *pph, ppl_const_Float_Box_t ph)
- int [ppl_new_BD_Shape_double_from_BD_Shape_float](#) (ppl_BD_Shape_double_t *pph, ppl_const_BD_Shape_float_t_t ph)
- int [ppl_new_BD_Shape_double_from_Octagonal_Shape_float](#) (ppl_BD_Shape_double_t *pph, ppl_const_Octagonal_Shape_float_t_t ph)
- int [ppl_new_BD_Shape_double_from_Double_Box](#) (ppl_BD_Shape_double_t *pph, ppl_const_Double_Box_t ph)
- int [ppl_new_BD_Shape_double_from_BD_Shape_double](#) (ppl_BD_Shape_double_t *pph, ppl_const_BD_Shape_double_t_t ph)
- int [ppl_new_BD_Shape_double_from_Octagonal_Shape_double](#) (ppl_BD_Shape_double_t *pph, ppl_const_Octagonal_Shape_double_t_t ph)
- int [ppl_new_BD_Shape_double_from_Long_Double_Box](#) (ppl_BD_Shape_double_t *pph, ppl_const_Long_Double_Box_t ph)
- int [ppl_new_BD_Shape_double_from_BD_Shape_long_double](#) (ppl_BD_Shape_double_t *pph, ppl_const_BD_Shape_long_double_t_t ph)
- int [ppl_new_BD_Shape_double_from_Octagonal_Shape_long_double](#) (ppl_BD_Shape_double_t *pph, ppl_const_Octagonal_Shape_long_double_t_t ph)
- int [ppl_new_BD_Shape_double_from_Int8_Box_with_complexity](#) (ppl_BD_Shape_double_t *pph, ppl_const_Int8_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_double_from_Int16_Box_with_complexity](#) (ppl_BD_Shape_double_t *pph, ppl_const_Int16_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_double_from_Int32_Box_with_complexity](#) (ppl_BD_Shape_double_t *pph, ppl_const_Int32_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_double_from_Int64_Box_with_complexity](#) (ppl_BD_Shape_double_t *pph, ppl_const_Int64_Box_t ph, int complexity)

- `int ppl_new_BD_Shape_double_from_Uint8_Box_with_complexity` (`ppl_BD_Shape_double_t *pph, ppl_const_Uint8_Box_t ph, int complexity`)
- `int ppl_new_BD_Shape_double_from_Uint16_Box_with_complexity` (`ppl_BD_Shape_double_t *pph, ppl_const_Uint16_Box_t ph, int complexity`)
- `int ppl_new_BD_Shape_double_from_Uint32_Box_with_complexity` (`ppl_BD_Shape_double_t *pph, ppl_const_Uint32_Box_t ph, int complexity`)
- `int ppl_new_BD_Shape_double_from_Uint64_Box_with_complexity` (`ppl_BD_Shape_double_t *pph, ppl_const_Uint64_Box_t ph, int complexity`)
- `int ppl_new_BD_Shape_double_from_Z_Box_with_complexity` (`ppl_BD_Shape_double_t *pph, ppl_const_Z_Box_t ph, int complexity`)
- `int ppl_new_BD_Shape_double_from_Rational_Box_with_complexity` (`ppl_BD_Shape_double_t *pph, ppl_const_Rational_Box_t ph, int complexity`)
- `int ppl_new_BD_Shape_double_from_BD_Shape_int8_t_with_complexity` (`ppl_BD_Shape_double_t *pph, ppl_const_BD_Shape_int8_t_t ph, int complexity`)
- `int ppl_new_BD_Shape_double_from_BD_Shape_int16_t_with_complexity` (`ppl_BD_Shape_double_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity`)
- `int ppl_new_BD_Shape_double_from_BD_Shape_int32_t_with_complexity` (`ppl_BD_Shape_double_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity`)
- `int ppl_new_BD_Shape_double_from_BD_Shape_int64_t_with_complexity` (`ppl_BD_Shape_double_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity`)
- `int ppl_new_BD_Shape_double_from_BD_Shape_mpz_class_with_complexity` (`ppl_BD_Shape_double_t *pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity`)
- `int ppl_new_BD_Shape_double_from_BD_Shape_mpq_class_with_complexity` (`ppl_BD_Shape_double_t *pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity`)
- `int ppl_new_BD_Shape_double_from_Octagonal_Shape_int8_t_with_complexity` (`ppl_BD_Shape_double_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity`)
- `int ppl_new_BD_Shape_double_from_Octagonal_Shape_int16_t_with_complexity` (`ppl_BD_Shape_double_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity`)
- `int ppl_new_BD_Shape_double_from_Octagonal_Shape_int32_t_with_complexity` (`ppl_BD_Shape_double_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity`)
- `int ppl_new_BD_Shape_double_from_Octagonal_Shape_int64_t_with_complexity` (`ppl_BD_Shape_double_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity`)
- `int ppl_new_BD_Shape_double_from_Octagonal_Shape_mpz_class_with_complexity` (`ppl_BD_Shape_double_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity`)
- `int ppl_new_BD_Shape_double_from_Octagonal_Shape_mpq_class_with_complexity` (`ppl_BD_Shape_double_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity`)
- `int ppl_new_BD_Shape_double_from_C_Polyhedron_with_complexity` (`ppl_BD_Shape_double_t *pph, ppl_const_Polyhedron_t ph, int complexity`)
- `int ppl_new_BD_Shape_double_from_NNC_Polyhedron_with_complexity` (`ppl_BD_Shape_double_t *pph, ppl_const_Polyhedron_t ph, int complexity`)
- `int ppl_new_BD_Shape_double_from_Grid_with_complexity` (`ppl_BD_Shape_double_t *pph, ppl_const_Grid_t ph, int complexity`)
- `int ppl_new_BD_Shape_double_from_Float_Box_with_complexity` (`ppl_BD_Shape_double_t *pph, ppl_const_Float_Box_t ph, int complexity`)
- `int ppl_new_BD_Shape_double_from_BD_Shape_float_with_complexity` (`ppl_BD_Shape_double_t *pph, ppl_const_BD_Shape_float_t ph, int complexity`)
- `int ppl_new_BD_Shape_double_from_Octagonal_Shape_float_with_complexity` (`ppl_BD_Shape_double_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity`)
- `int ppl_new_BD_Shape_double_from_Double_Box_with_complexity` (`ppl_BD_Shape_double_t *pph, ppl_const_Double_Box_t ph, int complexity`)
- `int ppl_new_BD_Shape_double_from_BD_Shape_double_with_complexity` (`ppl_BD_Shape_double_t *pph, ppl_const_BD_Shape_double_t ph, int complexity`)

- [int ppl_new_BD_Shape_double_from_Octagonal_Shape_double_with_complexity](#) (ppl_BD_Shape_double_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)
- [int ppl_new_BD_Shape_double_from_Long_Double_Box_with_complexity](#) (ppl_BD_Shape_double_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_double_from_BD_Shape_long_double_with_complexity](#) (ppl_BD_Shape_double_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity)
- [int ppl_new_BD_Shape_double_from_Octagonal_Shape_long_double_with_complexity](#) (ppl_BD_Shape_double_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)
- [int ppl_new_BD_Shape_double_from_Constraint_System](#) (ppl_BD_Shape_double_t *pph, ppl_const_Constraint_System_t cs)
- [int ppl_new_BD_Shape_double_from_Congruence_System](#) (ppl_BD_Shape_double_t *pph, ppl_const_Congruence_System_t cs)
- [int ppl_new_BD_Shape_double_from_Generator_System](#) (ppl_BD_Shape_double_t *pph, ppl_const_Generator_System_t cs)
- [int ppl_BD_Shape_double_space_dimension](#) (ppl_const_BD_Shape_double_t ph, [ppl_dimension_type](#) *m)
- [int ppl_BD_Shape_double_affine_dimension](#) (ppl_const_BD_Shape_double_t ph, [ppl_dimension_type](#) *m)
- [int ppl_BD_Shape_double_relation_with_Constraint](#) (ppl_const_BD_Shape_double_t ph, ppl_const_Constraint_t c)
- [int ppl_BD_Shape_double_relation_with_Generator](#) (ppl_const_BD_Shape_double_t ph, ppl_const_Generator_t c)
- [int ppl_BD_Shape_double_relation_with_Congruence](#) (ppl_const_BD_Shape_double_t ph, ppl_const_Congruence_t c)
- [int ppl_BD_Shape_double_get_constraints](#) (ppl_const_BD_Shape_double_t ph, ppl_const_Constraint_System_t *pcs)
- [int ppl_BD_Shape_double_get_congruences](#) (ppl_const_BD_Shape_double_t ph, ppl_const_Congruence_System_t *pcs)
- [int ppl_BD_Shape_double_get_minimized_constraints](#) (ppl_const_BD_Shape_double_t ph, ppl_const_Constraint_System_t *pcs)
- [int ppl_BD_Shape_double_get_minimized_congruences](#) (ppl_const_BD_Shape_double_t ph, ppl_const_Congruence_System_t *pcs)
- [int ppl_BD_Shape_double_is_empty](#) (ppl_const_BD_Shape_double_t ph)
- [int ppl_BD_Shape_double_is_universe](#) (ppl_const_BD_Shape_double_t ph)
- [int ppl_BD_Shape_double_is_bounded](#) (ppl_const_BD_Shape_double_t ph)
- [int ppl_BD_Shape_double_contains_integer_point](#) (ppl_const_BD_Shape_double_t ph)
- [int ppl_BD_Shape_double_is_topologically_closed](#) (ppl_const_BD_Shape_double_t ph)
- [int ppl_BD_Shape_double_is_discrete](#) (ppl_const_BD_Shape_double_t ph)
- [int ppl_BD_Shape_double_topological_closure_assign](#) (ppl_BD_Shape_double_t ph)
- [int ppl_BD_Shape_double_bounds_from_above](#) (ppl_const_BD_Shape_double_t ph, ppl_const_Linear_Expression_t le)
- [int ppl_BD_Shape_double_bounds_from_below](#) (ppl_const_BD_Shape_double_t ph, ppl_const_Linear_Expression_t le)
- [int ppl_BD_Shape_double_maximize](#) (ppl_const_BD_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- [int ppl_BD_Shape_double_minimize](#) (ppl_const_BD_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- [int ppl_BD_Shape_double_maximize_with_point](#) (ppl_const_BD_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)

- int [ppl_BD_Shape_double_minimize_with_point](#) (ppl_const_BD_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_BD_Shape_double_frequency](#) (ppl_const_BD_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)
- int [ppl_BD_Shape_double_contains_BD_Shape_double](#) (ppl_const_BD_Shape_double_t x, ppl_const_BD_Shape_double_t y)
- int [ppl_BD_Shape_double_strictly_contains_BD_Shape_double](#) (ppl_const_BD_Shape_double_t x, ppl_const_BD_Shape_double_t y)
- int [ppl_BD_Shape_double_is_disjoint_from_BD_Shape_double](#) (ppl_const_BD_Shape_double_t x, ppl_const_BD_Shape_double_t y)
- int [ppl_BD_Shape_double_equals_BD_Shape_double](#) (ppl_const_BD_Shape_double_t x, ppl_const_BD_Shape_double_t y)
- int [ppl_BD_Shape_double_OK](#) (ppl_const_BD_Shape_double_t ph)
- int [ppl_BD_Shape_double_add_constraint](#) (ppl_BD_Shape_double_t ph, ppl_const_Constraint_t c)
- int [ppl_BD_Shape_double_add_congruence](#) (ppl_BD_Shape_double_t ph, ppl_const_Congruence_t c)
- int [ppl_BD_Shape_double_add_constraints](#) (ppl_BD_Shape_double_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_BD_Shape_double_add_congruences](#) (ppl_BD_Shape_double_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_BD_Shape_double_refine_with_constraint](#) (ppl_BD_Shape_double_t ph, ppl_const_Constraint_t c)
- int [ppl_BD_Shape_double_refine_with_congruence](#) (ppl_BD_Shape_double_t ph, ppl_const_Congruence_t c)
- int [ppl_BD_Shape_double_refine_with_constraints](#) (ppl_BD_Shape_double_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_BD_Shape_double_refine_with_congruences](#) (ppl_BD_Shape_double_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_BD_Shape_double_intersection_assign](#) (ppl_BD_Shape_double_t x, ppl_const_BD_Shape_double_t y)
- int [ppl_BD_Shape_double_upper_bound_assign](#) (ppl_BD_Shape_double_t x, ppl_const_BD_Shape_double_t y)
- int [ppl_BD_Shape_double_difference_assign](#) (ppl_BD_Shape_double_t x, ppl_const_BD_Shape_double_t y)
- int [ppl_BD_Shape_double_concatenate_assign](#) (ppl_BD_Shape_double_t x, ppl_const_BD_Shape_double_t y)
- int [ppl_BD_Shape_double_time_elapse_assign](#) (ppl_BD_Shape_double_t x, ppl_const_BD_Shape_double_t y)
- int [ppl_BD_Shape_double_upper_bound_assign_if_exact](#) (ppl_BD_Shape_double_t x, ppl_const_BD_Shape_double_t y)
- int [ppl_BD_Shape_double_simplify_using_context_assign](#) (ppl_BD_Shape_double_t x, ppl_const_BD_Shape_double_t y)
- int [ppl_BD_Shape_double_constrains](#) (ppl_BD_Shape_double_t ph, [ppl_dimension_type](#) var)
- int [ppl_BD_Shape_double_unconstrain_space_dimension](#) (ppl_BD_Shape_double_t ph, [ppl_dimension_type](#) var)
- int [ppl_BD_Shape_double_unconstrain_space_dimensions](#) (ppl_BD_Shape_double_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_BD_Shape_double_affine_image](#) (ppl_BD_Shape_double_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)

- int `ppl_BD_Shape_double_affine_preimage` (`ppl_BD_Shape_double_t` ph, `ppl_dimension_type` var, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- int `ppl_BD_Shape_double_bounded_affine_image` (`ppl_BD_Shape_double_t` ph, `ppl_dimension_type` var, `ppl_const_Linear_Expression_t` lb, `ppl_const_Linear_Expression_t` ub, `ppl_const_Coefficient_t` d)
- int `ppl_BD_Shape_double_bounded_affine_preimage` (`ppl_BD_Shape_double_t` ph, `ppl_dimension_type` var, `ppl_const_Linear_Expression_t` lb, `ppl_const_Linear_Expression_t` ub, `ppl_const_Coefficient_t` d)
- int `ppl_BD_Shape_double_generalized_affine_image` (`ppl_BD_Shape_double_t` ph, `ppl_dimension_type` var, enum `ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- int `ppl_BD_Shape_double_generalized_affine_preimage` (`ppl_BD_Shape_double_t` ph, `ppl_dimension_type` var, enum `ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- int `ppl_BD_Shape_double_generalized_affine_image_lhs_rhs` (`ppl_BD_Shape_double_t` ph, `ppl_const_Linear_Expression_t` lhs, enum `ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` rhs)
- int `ppl_BD_Shape_double_generalized_affine_preimage_lhs_rhs` (`ppl_BD_Shape_double_t` ph, `ppl_const_Linear_Expression_t` lhs, enum `ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` rhs)
- int `ppl_BD_Shape_double_add_space_dimensions_and_embed` (`ppl_BD_Shape_double_t` ph, `ppl_dimension_type` d)
- int `ppl_BD_Shape_double_add_space_dimensions_and_project` (`ppl_BD_Shape_double_t` ph, `ppl_dimension_type` d)
- int `ppl_BD_Shape_double_remove_space_dimensions` (`ppl_BD_Shape_double_t` ph, `ppl_dimension_type` ds[], `size_t` n)
- int `ppl_BD_Shape_double_remove_higher_space_dimensions` (`ppl_BD_Shape_double_t` ph, `ppl_dimension_type` d)
- int `ppl_BD_Shape_double_expand_space_dimension` (`ppl_BD_Shape_double_t` ph, `ppl_dimension_type` d, `ppl_dimension_type` m)
- int `ppl_BD_Shape_double_fold_space_dimensions` (`ppl_BD_Shape_double_t` ph, `ppl_dimension_type` ds[], `size_t` n, `ppl_dimension_type` d)
- int `ppl_BD_Shape_double_map_space_dimensions` (`ppl_BD_Shape_double_t` ph, `ppl_dimension_type` maps[], `size_t` n)
- int `ppl_BD_Shape_double_drop_some_non_integer_points` (`ppl_BD_Shape_double_t` ph, int complexity)
- int `ppl_BD_Shape_double_drop_some_non_integer_points_2` (`ppl_BD_Shape_double_t` ph, `ppl_dimension_type` ds[], `size_t` n, int complexity)
- int `ppl_BD_Shape_double_external_memory_in_bytes` (`ppl_const_BD_Shape_double_t` ps, `size_t` *sz)
- int `ppl_BD_Shape_double_total_memory_in_bytes` (`ppl_const_BD_Shape_double_t` ps, `size_t` *sz)
- int `ppl_BD_Shape_double_BHMZ05_widening_assign_with_tokens` (`ppl_BD_Shape_double_t` x, `ppl_const_BD_Shape_double_t` y, unsigned *tp)
- int `ppl_BD_Shape_double_H79_widening_assign_with_tokens` (`ppl_BD_Shape_double_t` x, `ppl_const_BD_Shape_double_t` y, unsigned *tp)
- int `ppl_BD_Shape_double_BHMZ05_widening_assign` (`ppl_BD_Shape_double_t` x, `ppl_const_BD_Shape_double_t` y)
- int `ppl_BD_Shape_double_H79_widening_assign` (`ppl_BD_Shape_double_t` x, `ppl_const_BD_Shape_double_t` y)
- int `ppl_BD_Shape_double_widening_assign_with_tokens` (`ppl_BD_Shape_double_t` x, `ppl_const_BD_Shape_double_t` y, unsigned *tp)

- `int ppl_BD_Shape_double_widening_assign` (`ppl_BD_Shape_double_t x`, `ppl_const_BD_Shape_double_t y`)
- `int ppl_BD_Shape_double_limited_BHMZ05_extrapolation_assign_with_tokens` (`ppl_BD_Shape_double_t x`, `ppl_const_BD_Shape_double_t y`, `ppl_const_Constraint_System_t cs`, `unsigned *tp`)
- `int ppl_BD_Shape_double_limited_H79_extrapolation_assign_with_tokens` (`ppl_BD_Shape_double_t x`, `ppl_const_BD_Shape_double_t y`, `ppl_const_Constraint_System_t cs`, `unsigned *tp`)
- `int ppl_BD_Shape_double_limited_CC76_extrapolation_assign_with_tokens` (`ppl_BD_Shape_double_t x`, `ppl_const_BD_Shape_double_t y`, `ppl_const_Constraint_System_t cs`, `unsigned *tp`)
- `int ppl_BD_Shape_double_limited_BHMZ05_extrapolation_assign` (`ppl_BD_Shape_double_t x`, `ppl_const_BD_Shape_double_t y`, `ppl_const_Constraint_System_t cs`)
- `int ppl_BD_Shape_double_limited_H79_extrapolation_assign` (`ppl_BD_Shape_double_t x`, `ppl_const_BD_Shape_double_t y`, `ppl_const_Constraint_System_t cs`)
- `int ppl_BD_Shape_double_limited_CC76_extrapolation_assign` (`ppl_BD_Shape_double_t x`, `ppl_const_BD_Shape_double_t y`, `ppl_const_Constraint_System_t cs`)
- `int ppl_BD_Shape_double_CC76_extrapolation_assign_with_tokens` (`ppl_BD_Shape_double_t x`, `ppl_const_BD_Shape_double_t y`, `unsigned *tp`)
- `int ppl_BD_Shape_double_CC76_extrapolation_assign` (`ppl_BD_Shape_double_t x`, `ppl_const_BD_Shape_double_t y`)
- `int ppl_BD_Shape_double_CC76_narrowing_assign` (`ppl_BD_Shape_double_t x`, `ppl_const_BD_Shape_double_t y`)
- `int ppl_BD_Shape_double_linear_partition` (`ppl_const_BD_Shape_double_t x`, `ppl_const_BD_Shape_double_t y`, `ppl_BD_Shape_double_t *p_inters`, `ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest`)
- `int ppl_BD_Shape_double_wrap_assign` (`ppl_BD_Shape_double_t ph`, `ppl_dimension_type ds[]`, `size_t n`, `enum ppl_enum_Bounded_Integer_Type_Width w`, `enum ppl_enum_Bounded_Integer_Type_Representation r`, `enum ppl_enum_Bounded_Integer_Type_Overflow o`, `const ppl_const_Constraint_System_t *pcs`, `unsigned complexity_threshold`, `int wrap_individually`)
- `int ppl_new_BD_Shape_double_recycle_Constraint_System` (`ppl_BD_Shape_double_t *pph`, `ppl_Constraint_System_t cs`)
- `int ppl_new_BD_Shape_double_recycle_Congruence_System` (`ppl_BD_Shape_double_t *pph`, `ppl_Congruence_System_t cs`)
- `int ppl_new_BD_Shape_double_recycle_Generator_System` (`ppl_BD_Shape_double_t *pph`, `ppl_Generator_System_t cs`)
- `int ppl_assign_BD_Shape_double_from_BD_Shape_double` (`ppl_BD_Shape_double_t dst`, `ppl_const_BD_Shape_double_t src`)
- `int ppl_BD_Shape_double_add_recycled_constraints` (`ppl_BD_Shape_double_t ph`, `ppl_Constraint_System_t cs`)
- `int ppl_BD_Shape_double_add_recycled_congruences` (`ppl_BD_Shape_double_t ph`, `ppl_Congruence_System_t cs`)
- `int ppl_termination_test_MS_BD_Shape_double` (`ppl_const_BD_Shape_double_t pset`)
- `int ppl_termination_test_PR_BD_Shape_double` (`ppl_const_BD_Shape_double_t pset`)
- `int ppl_one_affine_ranking_function_MS_BD_Shape_double` (`ppl_const_BD_Shape_double_t pset`, `ppl_Generator_t point`)
- `int ppl_one_affine_ranking_function_PR_BD_Shape_double` (`ppl_const_BD_Shape_double_t pset`, `ppl_Generator_t point`)
- `int ppl_all_affine_ranking_functions_MS_BD_Shape_double` (`ppl_const_BD_Shape_double_t pset`, `ppl_Polyhedron_t ph`)
- `int ppl_all_affine_ranking_functions_PR_BD_Shape_double` (`ppl_const_BD_Shape_double_t pset`, `ppl_Polyhedron_t ph`)

- int [ppl_termination_test_MS_BD_Shape_double_2](#) (ppl_const_BD_Shape_double_t pset_before, ppl_const_BD_Shape_double_t pset_after)
- int [ppl_termination_test_PR_BD_Shape_double_2](#) (ppl_const_BD_Shape_double_t pset_before, ppl_const_BD_Shape_double_t pset_after)
- int [ppl_one_affine_ranking_function_MS_BD_Shape_double_2](#) (ppl_const_BD_Shape_double_t pset_before, ppl_const_BD_Shape_double_t pset_after, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_BD_Shape_double_2](#) (ppl_const_BD_Shape_double_t pset_before, ppl_const_BD_Shape_double_t pset_after, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_BD_Shape_double_2](#) (ppl_const_BD_Shape_double_t pset_before, ppl_const_BD_Shape_double_t pset_after, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_BD_Shape_double_2](#) (ppl_const_BD_Shape_double_t pset_before, ppl_const_BD_Shape_double_t pset_after, ppl_Polyhedron_t ph)

10.5.1 Detailed Description

Types and functions for [ppl_BD_Shape_double_tag](#).

10.5.2 Friends And Related Function Documentation

- 10.5.2.1** int [ppl_all_affine_ranking_functions_MS_BD_Shape_double](#) (ppl_const_BD_Shape_double_t *pset*, ppl_Polyhedron_t *ph*) [[related](#)]
- 10.5.2.2** int [ppl_all_affine_ranking_functions_MS_BD_Shape_double_2](#) (ppl_const_BD_Shape_double_t *pset_before*, ppl_const_BD_Shape_double_t *pset_after*, ppl_Polyhedron_t *ph*) [[related](#)]
- 10.5.2.3** int [ppl_all_affine_ranking_functions_PR_BD_Shape_double](#) (ppl_const_BD_Shape_double_t *pset*, ppl_Polyhedron_t *ph*) [[related](#)]
- 10.5.2.4** int [ppl_all_affine_ranking_functions_PR_BD_Shape_double_2](#) (ppl_const_BD_Shape_double_t *pset_before*, ppl_const_BD_Shape_double_t *pset_after*, ppl_Polyhedron_t *ph*) [[related](#)]
- 10.5.2.5** int [ppl_assign_BD_Shape_double_from_BD_Shape_double](#) (ppl_BD_Shape_double_t *dst*, ppl_const_BD_Shape_double_t *src*) [[related](#)]

- 10.5.2.6 `int ppl_BD_Shape_double_add_congruence (ppl_BD_Shape_double_t ph,
ppl_const_Congruence_t c)` [`related`]
- 10.5.2.7 `int ppl_BD_Shape_double_add_congruences (ppl_BD_Shape_double_t ph,
ppl_const_Congruence_System_t cs)` [`related`]
- 10.5.2.8 `int ppl_BD_Shape_double_add_constraint (ppl_BD_Shape_double_t ph,
ppl_const_Constraint_t c)` [`related`]
- 10.5.2.9 `int ppl_BD_Shape_double_add_constraints (ppl_BD_Shape_double_t ph,
ppl_const_Constraint_System_t cs)` [`related`]
- 10.5.2.10 `int ppl_BD_Shape_double_add_recycled_congruences (ppl_BD_Shape_double_t ph,
ppl_Congruence_System_t cs)` [`related`]
- 10.5.2.11 `int ppl_BD_Shape_double_add_recycled_constraints (ppl_BD_Shape_double_t ph,
ppl_Constraint_System_t cs)` [`related`]
- 10.5.2.12 `int ppl_BD_Shape_double_add_space_dimensions_and_embed
(ppl_BD_Shape_double_t ph, ppl_dimension_type d)` [`related`]
- 10.5.2.13 `int ppl_BD_Shape_double_add_space_dimensions_and_project
(ppl_BD_Shape_double_t ph, ppl_dimension_type d)` [`related`]
- 10.5.2.14 `int ppl_BD_Shape_double_affine_dimension (ppl_const_BD_Shape_double_t ph,
ppl_dimension_type * m)` [`related`]

- 10.5.2.15 `int ppl_BD_Shape_double_affine_image (ppl_BD_Shape_double_t ph,
ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)`
[related]
- 10.5.2.16 `int ppl_BD_Shape_double_affine_preimage (ppl_BD_Shape_double_t ph,
ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)`
[related]
- 10.5.2.17 `int ppl_BD_Shape_double_BHMZ05_widening_assign (ppl_BD_Shape_double_t x,
ppl_const_BD_Shape_double_t y)` [related]
- 10.5.2.18 `int ppl_BD_Shape_double_BHMZ05_widening_assign_with_tokens
(ppl_BD_Shape_double_t x, ppl_const_BD_Shape_double_t y, unsigned * tp)`
[related]
- 10.5.2.19 `int ppl_BD_Shape_double_bounded_affine_image (ppl_BD_Shape_double_t
ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb,
ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [related]
- 10.5.2.20 `int ppl_BD_Shape_double_bounded_affine_preimage (ppl_BD_Shape_double_t
ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb,
ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [related]
- 10.5.2.21 `int ppl_BD_Shape_double_bounds_from_above (ppl_const_BD_Shape_double_t ph,
ppl_const_Linear_Expression_t le)` [related]
- 10.5.2.22 `int ppl_BD_Shape_double_bounds_from_below (ppl_const_BD_Shape_double_t ph,
ppl_const_Linear_Expression_t le)` [related]

- 10.5.2.23** `int ppl_BD_Shape_double_CC76_extrapolation_assign (ppl_BD_Shape_double_t x,
ppl_const_BD_Shape_double_t y)` [**related**]
- 10.5.2.24** `int ppl_BD_Shape_double_CC76_extrapolation_assign_with_tokens
(ppl_BD_Shape_double_t x, ppl_const_BD_Shape_double_t y, unsigned * tp)`
[**related**]
- 10.5.2.25** `int ppl_BD_Shape_double_CC76_narrowing_assign (ppl_BD_Shape_double_t x,
ppl_const_BD_Shape_double_t y)` [**related**]
- 10.5.2.26** `int ppl_BD_Shape_double_concatenate_assign (ppl_BD_Shape_double_t x,
ppl_const_BD_Shape_double_t y)` [**related**]
- 10.5.2.27** `int ppl_BD_Shape_double_constrains (ppl_BD_Shape_double_t ph,
ppl_dimension_type var)` [**related**]
- 10.5.2.28** `int ppl_BD_Shape_double_contains_BD_Shape_double (ppl_const_BD_Shape_double_t
x, ppl_const_BD_Shape_double_t y)` [**related**]
- 10.5.2.29** `int ppl_BD_Shape_double_contains_integer_point (ppl_const_BD_Shape_double_t ph)`
[**related**]
- 10.5.2.30** `int ppl_BD_Shape_double_difference_assign (ppl_BD_Shape_double_t x,
ppl_const_BD_Shape_double_t y)` [**related**]
- 10.5.2.31** `int ppl_BD_Shape_double_drop_some_non_integer_points (ppl_BD_Shape_double_t
ph, int complexity)` [**related**]

- 10.5.2.32 `int ppl_BD_Shape_double_drop_some_non_integer_points_2 (ppl_BD_Shape_double_t ph, ppl_dimension_type ds[], size_t n, int complexity)` [**related**]
- 10.5.2.33 `int ppl_BD_Shape_double_equals_BD_Shape_double (ppl_const_BD_Shape_double_t x, ppl_const_BD_Shape_double_t y)` [**related**]
- 10.5.2.34 `int ppl_BD_Shape_double_expand_space_dimension (ppl_BD_Shape_double_t ph, ppl_dimension_type d, ppl_dimension_type m)` [**related**]
- 10.5.2.35 `int ppl_BD_Shape_double_external_memory_in_bytes (ppl_const_BD_Shape_double_t ps, size_t * sz)` [**related**]
- 10.5.2.36 `int ppl_BD_Shape_double_fold_space_dimensions (ppl_BD_Shape_double_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [**related**]
- 10.5.2.37 `int ppl_BD_Shape_double_frequency (ppl_const_BD_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)` [**related**]
- 10.5.2.38 `int ppl_BD_Shape_double_generalized_affine_image (ppl_BD_Shape_double_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.5.2.39 `int ppl_BD_Shape_double_generalized_affine_image_lhs_rhs (ppl_BD_Shape_double_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t rhs)` [**related**]
- 10.5.2.40 `int ppl_BD_Shape_double_generalized_affine_preimage (ppl_BD_Shape_double_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]

- 10.5.2.41 `int ppl_BD_Shape_double_generalized_affine_preimage_lhs_rhs`
 (`ppl_BD_Shape_double_t ph`, `ppl_const_Linear_Expression_t lhs`, `enum`
`ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`) [`related`]
- 10.5.2.42 `int ppl_BD_Shape_double_get_congruences` (`ppl_const_BD_Shape_double_t ph`,
`ppl_const_Congruence_System_t * pcs`) [`related`]
- 10.5.2.43 `int ppl_BD_Shape_double_get_constraints` (`ppl_const_BD_Shape_double_t ph`,
`ppl_const_Constraint_System_t * pcs`) [`related`]
- 10.5.2.44 `int ppl_BD_Shape_double_get_minimized_congruences` (`ppl_const_BD_Shape_double_t`
`ph`, `ppl_const_Congruence_System_t * pcs`) [`related`]
- 10.5.2.45 `int ppl_BD_Shape_double_get_minimized_constraints` (`ppl_const_BD_Shape_double_t`
`ph`, `ppl_const_Constraint_System_t * pcs`) [`related`]
- 10.5.2.46 `int ppl_BD_Shape_double_H79_widening_assign` (`ppl_BD_Shape_double_t x`,
`ppl_const_BD_Shape_double_t y`) [`related`]
- 10.5.2.47 `int ppl_BD_Shape_double_H79_widening_assign_with_tokens`
 (`ppl_BD_Shape_double_t x`, `ppl_const_BD_Shape_double_t y`, `unsigned * tp`)
 [`related`]
- 10.5.2.48 `int ppl_BD_Shape_double_intersection_assign` (`ppl_BD_Shape_double_t x`,
`ppl_const_BD_Shape_double_t y`) [`related`]
- 10.5.2.49 `int ppl_BD_Shape_double_is_bounded` (`ppl_const_BD_Shape_double_t ph`)
 [`related`]

- 10.5.2.50 `int ppl_BD_Shape_double_is_discrete (ppl_const_BD_Shape_double_t ph)`
[related]
- 10.5.2.51 `int ppl_BD_Shape_double_is_disjoint_from_BD_Shape_double`
`(ppl_const_BD_Shape_double_t x, ppl_const_BD_Shape_double_t y)` [related]
- 10.5.2.52 `int ppl_BD_Shape_double_is_empty (ppl_const_BD_Shape_double_t ph)` [related]
- 10.5.2.53 `int ppl_BD_Shape_double_is_topologically_closed (ppl_const_BD_Shape_double_t ph)`
[related]
- 10.5.2.54 `int ppl_BD_Shape_double_is_universe (ppl_const_BD_Shape_double_t ph)`
[related]
- 10.5.2.55 `int ppl_BD_Shape_double_limited_BHMZ05_extrapolation_assign (ppl_BD_Shape_-`
`double_t x, ppl_const_BD_Shape_double_t y, ppl_const_Constraint_System_t cs)`
[related]
- 10.5.2.56 `int ppl_BD_Shape_double_limited_BHMZ05_extrapolation_assign_with_tokens`
`(ppl_BD_Shape_double_t x, ppl_const_BD_Shape_double_t y,`
`ppl_const_Constraint_System_t cs, unsigned * tp)` [related]
- 10.5.2.57 `int ppl_BD_Shape_double_limited_CC76_extrapolation_assign (ppl_BD_Shape_-`
`double_t x, ppl_const_BD_Shape_double_t y, ppl_const_Constraint_System_t cs)`
[related]
- 10.5.2.58 `int ppl_BD_Shape_double_limited_CC76_extrapolation_assign_with_tokens`
`(ppl_BD_Shape_double_t x, ppl_const_BD_Shape_double_t y,`
`ppl_const_Constraint_System_t cs, unsigned * tp)` [related]

- 10.5.2.59** `int ppl_BD_Shape_double_limited_H79_extrapolation_assign (ppl_BD_Shape_double_t x, ppl_const_BD_Shape_double_t y, ppl_const_Constraint_System_t cs)` [**related**]
- 10.5.2.60** `int ppl_BD_Shape_double_limited_H79_extrapolation_assign_with_tokens (ppl_BD_Shape_double_t x, ppl_const_BD_Shape_double_t y, ppl_const_Constraint_System_t cs, unsigned * tp)` [**related**]
- 10.5.2.61** `int ppl_BD_Shape_double_linear_partition (ppl_const_BD_Shape_double_t x, ppl_const_BD_Shape_double_t y, ppl_BD_Shape_double_t * p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t * p_rest)` [**related**]
- 10.5.2.62** `int ppl_BD_Shape_double_map_space_dimensions (ppl_BD_Shape_double_t ph, ppl_dimension_type maps[], size_t n)` [**related**]
- 10.5.2.63** `int ppl_BD_Shape_double_maximize (ppl_const_BD_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [**related**]
- 10.5.2.64** `int ppl_BD_Shape_double_maximize_with_point (ppl_const_BD_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` [**related**]
- 10.5.2.65** `int ppl_BD_Shape_double_minimize (ppl_const_BD_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [**related**]
- 10.5.2.66** `int ppl_BD_Shape_double_minimize_with_point (ppl_const_BD_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` [**related**]

- 10.5.2.67 `int ppl_BD_Shape_double_OK (ppl_const_BD_Shape_double_t ph)` [**related**]

- 10.5.2.68 `int ppl_BD_Shape_double_refine_with_congruence (ppl_BD_Shape_double_t ph,
ppl_const_Congruence_t c)` [**related**]

- 10.5.2.69 `int ppl_BD_Shape_double_refine_with_congruences (ppl_BD_Shape_double_t ph,
ppl_const_Congruence_System_t cs)` [**related**]

- 10.5.2.70 `int ppl_BD_Shape_double_refine_with_constraint (ppl_BD_Shape_double_t ph,
ppl_const_Constraint_t c)` [**related**]

- 10.5.2.71 `int ppl_BD_Shape_double_refine_with_constraints (ppl_BD_Shape_double_t ph,
ppl_const_Constraint_System_t cs)` [**related**]

- 10.5.2.72 `int ppl_BD_Shape_double_relation_with_Congruence (ppl_const_BD_Shape_double_t
ph, ppl_const_Congruence_t c)` [**related**]

- 10.5.2.73 `int ppl_BD_Shape_double_relation_with_Constraint (ppl_const_BD_Shape_double_t
ph, ppl_const_Constraint_t c)` [**related**]

- 10.5.2.74 `int ppl_BD_Shape_double_relation_with_Generator (ppl_const_BD_Shape_double_t
ph, ppl_const_Generator_t c)` [**related**]

- 10.5.2.75 `int ppl_BD_Shape_double_remove_higher_space_dimensions (ppl_BD_Shape_double_t
ph, ppl_dimension_type d)` [**related**]

- 10.5.2.76 `int ppl_BD_Shape_double_remove_space_dimensions (ppl_BD_Shape_double_t ph,
ppl_dimension_type ds[], size_t n)` [**related**]

10.5.2.77 `int ppl_BD_Shape_double_simplify_using_context_assign (ppl_BD_Shape_double_t x, ppl_const_BD_Shape_double_t y)` [**related**]

10.5.2.78 `int ppl_BD_Shape_double_space_dimension (ppl_const_BD_Shape_double_t ph, ppl_dimension_type * m)` [**related**]

10.5.2.79 `int ppl_BD_Shape_double_strictly_contains_BD_Shape_double (ppl_const_BD_Shape_double_t x, ppl_const_BD_Shape_double_t y)` [**related**]

10.5.2.80 `int ppl_BD_Shape_double_time_elapse_assign (ppl_BD_Shape_double_t x, ppl_const_BD_Shape_double_t y)` [**related**]

10.5.2.81 `int ppl_BD_Shape_double_topological_closure_assign (ppl_BD_Shape_double_t ph)` [**related**]

10.5.2.82 `int ppl_BD_Shape_double_total_memory_in_bytes (ppl_const_BD_Shape_double_t ps, size_t * sz)` [**related**]

10.5.2.83 `int ppl_BD_Shape_double_unconstrain_space_dimension (ppl_BD_Shape_double_t ph, ppl_dimension_type var)` [**related**]

10.5.2.84 `int ppl_BD_Shape_double_unconstrain_space_dimensions (ppl_BD_Shape_double_t ph, ppl_dimension_type ds[], size_t n)` [**related**]

10.5.2.85 `int ppl_BD_Shape_double_upper_bound_assign (ppl_BD_Shape_double_t x, ppl_const_BD_Shape_double_t y)` [**related**]

- 10.5.2.86** `int ppl_BD_Shape_double_upper_bound_assign_if_exact (ppl_BD_Shape_double_t x, ppl_const_BD_Shape_double_t y) [related]`
- 10.5.2.87** `int ppl_BD_Shape_double_widening_assign (ppl_BD_Shape_double_t x, ppl_const_BD_Shape_double_t y) [related]`
- 10.5.2.88** `int ppl_BD_Shape_double_widening_assign_with_tokens (ppl_BD_Shape_double_t x, ppl_const_BD_Shape_double_t y, unsigned * tp) [related]`
- 10.5.2.89** `int ppl_BD_Shape_double_wrap_assign (ppl_BD_Shape_double_t ph, ppl_dimension_type ds[], size_t n, enum ppl_enum_Bounded_Integer_Type_Width w, enum ppl_enum_Bounded_Integer_Type_Representation r, enum ppl_enum_Bounded_Integer_Type_Overflow o, const ppl_const_Constraint_System_t * pcs, unsigned complexity_threshold, int wrap_individually) [related]`
- 10.5.2.90** `int ppl_delete_BD_Shape_double (ppl_const_BD_Shape_double_t ph) [related]`
- 10.5.2.91** `int ppl_new_BD_Shape_double_from_BD_Shape_double (ppl_BD_Shape_double_t * pph, ppl_const_BD_Shape_double_t ph) [related]`
- 10.5.2.92** `int ppl_new_BD_Shape_double_from_BD_Shape_double_with_complexity (ppl_BD_Shape_double_t * pph, ppl_const_BD_Shape_double_t ph, int complexity) [related]`
- 10.5.2.93** `int ppl_new_BD_Shape_double_from_BD_Shape_float (ppl_BD_Shape_double_t * pph, ppl_const_BD_Shape_float_t ph) [related]`
- 10.5.2.94** `int ppl_new_BD_Shape_double_from_BD_Shape_float_with_complexity (ppl_BD_Shape_double_t * pph, ppl_const_BD_Shape_float_t ph, int complexity) [related]`

10.5.2.95 int ppl_new_BD_Shape_double_from_BD_Shape_int16_t (ppl_BD_Shape_double_t * *pph*, ppl_const_BD_Shape_int16_t_t *ph*) [related]

10.5.2.96 int ppl_new_BD_Shape_double_from_BD_Shape_int16_t_with_complexity (ppl_BD_Shape_double_t * *pph*, ppl_const_BD_Shape_int16_t_t *ph*, int *complexity*) [related]

10.5.2.97 int ppl_new_BD_Shape_double_from_BD_Shape_int32_t (ppl_BD_Shape_double_t * *pph*, ppl_const_BD_Shape_int32_t_t *ph*) [related]

10.5.2.98 int ppl_new_BD_Shape_double_from_BD_Shape_int32_t_with_complexity (ppl_BD_Shape_double_t * *pph*, ppl_const_BD_Shape_int32_t_t *ph*, int *complexity*) [related]

10.5.2.99 int ppl_new_BD_Shape_double_from_BD_Shape_int64_t (ppl_BD_Shape_double_t * *pph*, ppl_const_BD_Shape_int64_t_t *ph*) [related]

10.5.2.100 int ppl_new_BD_Shape_double_from_BD_Shape_int64_t_with_complexity (ppl_BD_Shape_double_t * *pph*, ppl_const_BD_Shape_int64_t_t *ph*, int *complexity*) [related]

10.5.2.101 int ppl_new_BD_Shape_double_from_BD_Shape_int8_t (ppl_BD_Shape_double_t * *pph*, ppl_const_BD_Shape_int8_t_t *ph*) [related]

10.5.2.102 int ppl_new_BD_Shape_double_from_BD_Shape_int8_t_with_complexity (ppl_BD_Shape_double_t * *pph*, ppl_const_BD_Shape_int8_t_t *ph*, int *complexity*) [related]

- 10.5.2.103** `int ppl_new_BD_Shape_double_from_BD_Shape_long_double`
`(ppl_BD_Shape_double_t * pph, ppl_const_BD_Shape_long_double_t ph)`
`[related]`
- 10.5.2.104** `int ppl_new_BD_Shape_double_from_BD_Shape_long_double_with_complexity`
`(ppl_BD_Shape_double_t * pph, ppl_const_BD_Shape_long_double_t ph, int`
`complexity) [related]`
- 10.5.2.105** `int ppl_new_BD_Shape_double_from_BD_Shape_mpq_class` `(ppl_BD_Shape_double_t`
`* pph, ppl_const_BD_Shape_mpq_class_t ph) [related]`
- 10.5.2.106** `int ppl_new_BD_Shape_double_from_BD_Shape_mpq_class_with_complexity`
`(ppl_BD_Shape_double_t * pph, ppl_const_BD_Shape_mpq_class_t ph, int`
`complexity) [related]`
- 10.5.2.107** `int ppl_new_BD_Shape_double_from_BD_Shape_mpz_class` `(ppl_BD_Shape_double_t`
`* pph, ppl_const_BD_Shape_mpz_class_t ph) [related]`
- 10.5.2.108** `int ppl_new_BD_Shape_double_from_BD_Shape_mpz_class_with_complexity`
`(ppl_BD_Shape_double_t * pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)`
`[related]`
- 10.5.2.109** `int ppl_new_BD_Shape_double_from_C_Polyhedron` `(ppl_BD_Shape_double_t * pph,`
`ppl_const_Polyhedron_t ph) [related]`
- 10.5.2.110** `int ppl_new_BD_Shape_double_from_C_Polyhedron_with_complexity`
`(ppl_BD_Shape_double_t * pph, ppl_const_Polyhedron_t ph, int complexity)`
`[related]`

- 10.5.2.111 `int ppl_new_BD_Shape_double_from_Congruence_System (ppl_BD_Shape_double_t * pph, ppl_const_Congruence_System_t cs)` [**related**]
- 10.5.2.112 `int ppl_new_BD_Shape_double_from_Constraint_System (ppl_BD_Shape_double_t * pph, ppl_const_Constraint_System_t cs)` [**related**]
- 10.5.2.113 `int ppl_new_BD_Shape_double_from_Double_Box (ppl_BD_Shape_double_t * pph, ppl_const_Double_Box_t ph)` [**related**]
- 10.5.2.114 `int ppl_new_BD_Shape_double_from_Double_Box_with_complexity (ppl_BD_Shape_double_t * pph, ppl_const_Double_Box_t ph, int complexity)` [**related**]
- 10.5.2.115 `int ppl_new_BD_Shape_double_from_Float_Box (ppl_BD_Shape_double_t * pph, ppl_const_Float_Box_t ph)` [**related**]
- 10.5.2.116 `int ppl_new_BD_Shape_double_from_Float_Box_with_complexity (ppl_BD_Shape_double_t * pph, ppl_const_Float_Box_t ph, int complexity)` [**related**]
- 10.5.2.117 `int ppl_new_BD_Shape_double_from_Generator_System (ppl_BD_Shape_double_t * pph, ppl_const_Generator_System_t cs)` [**related**]
- 10.5.2.118 `int ppl_new_BD_Shape_double_from_Grid (ppl_BD_Shape_double_t * pph, ppl_const_Grid_t ph)` [**related**]
- 10.5.2.119 `int ppl_new_BD_Shape_double_from_Grid_with_complexity (ppl_BD_Shape_double_t * pph, ppl_const_Grid_t ph, int complexity)` [**related**]

- 10.5.2.120 `int ppl_new_BD_Shape_double_from_Int16_Box (ppl_BD_Shape_double_t * pph,
ppl_const_Int16_Box_t ph)` [`related`]
- 10.5.2.121 `int ppl_new_BD_Shape_double_from_Int16_Box_with_complexity
(ppl_BD_Shape_double_t * pph, ppl_const_Int16_Box_t ph, int complexity)`
[`related`]
- 10.5.2.122 `int ppl_new_BD_Shape_double_from_Int32_Box (ppl_BD_Shape_double_t * pph,
ppl_const_Int32_Box_t ph)` [`related`]
- 10.5.2.123 `int ppl_new_BD_Shape_double_from_Int32_Box_with_complexity
(ppl_BD_Shape_double_t * pph, ppl_const_Int32_Box_t ph, int complexity)`
[`related`]
- 10.5.2.124 `int ppl_new_BD_Shape_double_from_Int64_Box (ppl_BD_Shape_double_t * pph,
ppl_const_Int64_Box_t ph)` [`related`]
- 10.5.2.125 `int ppl_new_BD_Shape_double_from_Int64_Box_with_complexity
(ppl_BD_Shape_double_t * pph, ppl_const_Int64_Box_t ph, int complexity)`
[`related`]
- 10.5.2.126 `int ppl_new_BD_Shape_double_from_Int8_Box (ppl_BD_Shape_double_t * pph,
ppl_const_Int8_Box_t ph)` [`related`]
- 10.5.2.127 `int ppl_new_BD_Shape_double_from_Int8_Box_with_complexity
(ppl_BD_Shape_double_t * pph, ppl_const_Int8_Box_t ph, int complexity)`
[`related`]
- 10.5.2.128 `int ppl_new_BD_Shape_double_from_Long_Double_Box (ppl_BD_Shape_double_t *
pph, ppl_const_Long_Double_Box_t ph)` [`related`]

- 10.5.2.129** `int ppl_new_BD_Shape_double_from_Long_Double_Box_with_complexity`
(`ppl_BD_Shape_double_t * pph`, `ppl_const_Long_Double_Box_t ph`, `int complexity`)
[related]
- 10.5.2.130** `int ppl_new_BD_Shape_double_from_NNC_Polyhedron` (`ppl_BD_Shape_double_t *`
`pph`, `ppl_const_Polyhedron_t ph`) [related]
- 10.5.2.131** `int ppl_new_BD_Shape_double_from_NNC_Polyhedron_with_complexity`
(`ppl_BD_Shape_double_t * pph`, `ppl_const_Polyhedron_t ph`, `int complexity`)
[related]
- 10.5.2.132** `int ppl_new_BD_Shape_double_from_Octagonal_Shape_double`
(`ppl_BD_Shape_double_t * pph`, `ppl_const_Octagonal_Shape_double_t ph`)
[related]
- 10.5.2.133** `int ppl_new_BD_Shape_double_from_Octagonal_Shape_double_with_complexity`
(`ppl_BD_Shape_double_t * pph`, `ppl_const_Octagonal_Shape_double_t ph`, `int`
`complexity`) [related]
- 10.5.2.134** `int ppl_new_BD_Shape_double_from_Octagonal_Shape_float`
(`ppl_BD_Shape_double_t * pph`, `ppl_const_Octagonal_Shape_float_t ph`)
[related]
- 10.5.2.135** `int ppl_new_BD_Shape_double_from_Octagonal_Shape_float_with_complexity`
(`ppl_BD_Shape_double_t * pph`, `ppl_const_Octagonal_Shape_float_t ph`, `int`
`complexity`) [related]
- 10.5.2.136** `int ppl_new_BD_Shape_double_from_Octagonal_Shape_int16_t`
(`ppl_BD_Shape_double_t * pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`)
[related]

- 10.5.2.137 `int ppl_new_BD_Shape_double_from_Octagonal_Shape_int16_t_with_complexity`
 (`ppl_BD_Shape_double_t * pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`, `int complexity`) [`related`]
- 10.5.2.138 `int ppl_new_BD_Shape_double_from_Octagonal_Shape_int32_t`
 (`ppl_BD_Shape_double_t * pph`, `ppl_const_Octagonal_Shape_int32_t_t ph`)
 [`related`]
- 10.5.2.139 `int ppl_new_BD_Shape_double_from_Octagonal_Shape_int32_t_with_complexity`
 (`ppl_BD_Shape_double_t * pph`, `ppl_const_Octagonal_Shape_int32_t_t ph`, `int complexity`) [`related`]
- 10.5.2.140 `int ppl_new_BD_Shape_double_from_Octagonal_Shape_int64_t`
 (`ppl_BD_Shape_double_t * pph`, `ppl_const_Octagonal_Shape_int64_t_t ph`)
 [`related`]
- 10.5.2.141 `int ppl_new_BD_Shape_double_from_Octagonal_Shape_int64_t_with_complexity`
 (`ppl_BD_Shape_double_t * pph`, `ppl_const_Octagonal_Shape_int64_t_t ph`, `int complexity`) [`related`]
- 10.5.2.142 `int ppl_new_BD_Shape_double_from_Octagonal_Shape_int8_t`
 (`ppl_BD_Shape_double_t * pph`, `ppl_const_Octagonal_Shape_int8_t_t ph`)
 [`related`]
- 10.5.2.143 `int ppl_new_BD_Shape_double_from_Octagonal_Shape_int8_t_with_complexity`
 (`ppl_BD_Shape_double_t * pph`, `ppl_const_Octagonal_Shape_int8_t_t ph`, `int complexity`) [`related`]
- 10.5.2.144 `int ppl_new_BD_Shape_double_from_Octagonal_Shape_long_double`
 (`ppl_BD_Shape_double_t * pph`, `ppl_const_Octagonal_Shape_long_double_t_t ph`)
 [`related`]

- 10.5.2.145** `int ppl_new_BD_Shape_double_from_Octagonal_Shape_-long_double_with_complexity (ppl_BD_Shape_double_t * pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)` [**related**]
- 10.5.2.146** `int ppl_new_BD_Shape_double_from_Octagonal_Shape_mpq_class (ppl_BD_Shape_double_t * pph, ppl_const_Octagonal_Shape_mpq_class_t ph)` [**related**]
- 10.5.2.147** `int ppl_new_BD_Shape_double_from_Octagonal_Shape_mpq_class_with_complexity (ppl_BD_Shape_double_t * pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)` [**related**]
- 10.5.2.148** `int ppl_new_BD_Shape_double_from_Octagonal_Shape_mpz_class (ppl_BD_Shape_double_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph)` [**related**]
- 10.5.2.149** `int ppl_new_BD_Shape_double_from_Octagonal_Shape_mpz_class_with_complexity (ppl_BD_Shape_double_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)` [**related**]
- 10.5.2.150** `int ppl_new_BD_Shape_double_from_Rational_Box (ppl_BD_Shape_double_t * pph, ppl_const_Rational_Box_t ph)` [**related**]
- 10.5.2.151** `int ppl_new_BD_Shape_double_from_Rational_Box_with_complexity (ppl_BD_Shape_double_t * pph, ppl_const_Rational_Box_t ph, int complexity)` [**related**]
- 10.5.2.152** `int ppl_new_BD_Shape_double_from_space_dimension (ppl_BD_Shape_double_t * pph, ppl_dimension_type d, int empty)` [**related**]

- 10.5.2.153** `int ppl_new_BD_Shape_double_from_Uint16_Box (ppl_BD_Shape_double_t * pph,
ppl_const_Uint16_Box_t ph)` [**related**]
- 10.5.2.154** `int ppl_new_BD_Shape_double_from_Uint16_Box_with_complexity
(ppl_BD_Shape_double_t * pph, ppl_const_Uint16_Box_t ph, int complexity)`
[**related**]
- 10.5.2.155** `int ppl_new_BD_Shape_double_from_Uint32_Box (ppl_BD_Shape_double_t * pph,
ppl_const_Uint32_Box_t ph)` [**related**]
- 10.5.2.156** `int ppl_new_BD_Shape_double_from_Uint32_Box_with_complexity
(ppl_BD_Shape_double_t * pph, ppl_const_Uint32_Box_t ph, int complexity)`
[**related**]
- 10.5.2.157** `int ppl_new_BD_Shape_double_from_Uint64_Box (ppl_BD_Shape_double_t * pph,
ppl_const_Uint64_Box_t ph)` [**related**]
- 10.5.2.158** `int ppl_new_BD_Shape_double_from_Uint64_Box_with_complexity
(ppl_BD_Shape_double_t * pph, ppl_const_Uint64_Box_t ph, int complexity)`
[**related**]
- 10.5.2.159** `int ppl_new_BD_Shape_double_from_Uint8_Box (ppl_BD_Shape_double_t * pph,
ppl_const_Uint8_Box_t ph)` [**related**]
- 10.5.2.160** `int ppl_new_BD_Shape_double_from_Uint8_Box_with_complexity
(ppl_BD_Shape_double_t * pph, ppl_const_Uint8_Box_t ph, int complexity)`
[**related**]
- 10.5.2.161** `int ppl_new_BD_Shape_double_from_Z_Box (ppl_BD_Shape_double_t * pph,
ppl_const_Z_Box_t ph)` [**related**]

- 10.5.2.162** `int ppl_new_BD_Shape_double_from_Z_Box_with_complexity`
 (`ppl_BD_Shape_double_t *pph`, `ppl_const_Z_Box_t ph`, `int complexity`) [**related**]
- 10.5.2.163** `int ppl_new_BD_Shape_double_recycle_Congruence_System`
 (`ppl_BD_Shape_double_t *pph`, `ppl_Congruence_System_t cs`) [**related**]
- 10.5.2.164** `int ppl_new_BD_Shape_double_recycle_Constraint_System` (`ppl_BD_Shape_double_t`
 * `pph`, `ppl_Constraint_System_t cs`) [**related**]
- 10.5.2.165** `int ppl_new_BD_Shape_double_recycle_Generator_System` (`ppl_BD_Shape_double_t`
 * `pph`, `ppl_Generator_System_t cs`) [**related**]
- 10.5.2.166** `int ppl_one_affine_ranking_function_MS_BD_Shape_double`
 (`ppl_const_BD_Shape_double_t pset`, `ppl_Generator_t point`) [**related**]
- 10.5.2.167** `int ppl_one_affine_ranking_function_MS_BD_Shape_double_2`
 (`ppl_const_BD_Shape_double_t pset_before`, `ppl_const_BD_Shape_double_t pset_after`,
`ppl_Generator_t point`) [**related**]
- 10.5.2.168** `int ppl_one_affine_ranking_function_PR_BD_Shape_double`
 (`ppl_const_BD_Shape_double_t pset`, `ppl_Generator_t point`) [**related**]
- 10.5.2.169** `int ppl_one_affine_ranking_function_PR_BD_Shape_double_2`
 (`ppl_const_BD_Shape_double_t pset_before`, `ppl_const_BD_Shape_double_t pset_after`,
`ppl_Generator_t point`) [**related**]
- 10.5.2.170** `int ppl_termination_test_MS_BD_Shape_double` (`ppl_const_BD_Shape_double_t pset`)
 [**related**]

10.5.2.171 `int ppl_termination_test_MS_BD_Shape_double_2 (ppl_const_BD_Shape_double_t pset_before, ppl_const_BD_Shape_double_t pset_after)` [**related**]

10.5.2.172 `int ppl_termination_test_PR_BD_Shape_double (ppl_const_BD_Shape_double_t pset)` [**related**]

10.5.2.173 `int ppl_termination_test_PR_BD_Shape_double_2 (ppl_const_BD_Shape_double_t pset_before, ppl_const_BD_Shape_double_t pset_after)` [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.6 ppl_BD_Shape_float_tag Interface Reference

Types and functions for [ppl_BD_Shape_float_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_BD_Shape_float (ppl_const_BD_Shape_float_t ph)`
- `int ppl_new_BD_Shape_float_from_space_dimension (ppl_BD_Shape_float_t *pph, ppl_dimension_type d, int empty)`
- `int ppl_new_BD_Shape_float_from_Int8_Box (ppl_BD_Shape_float_t *pph, ppl_const_Int8_Box_t ph)`
- `int ppl_new_BD_Shape_float_from_Int16_Box (ppl_BD_Shape_float_t *pph, ppl_const_Int16_Box_t ph)`
- `int ppl_new_BD_Shape_float_from_Int32_Box (ppl_BD_Shape_float_t *pph, ppl_const_Int32_Box_t ph)`
- `int ppl_new_BD_Shape_float_from_Int64_Box (ppl_BD_Shape_float_t *pph, ppl_const_Int64_Box_t ph)`
- `int ppl_new_BD_Shape_float_from_UInt8_Box (ppl_BD_Shape_float_t *pph, ppl_const_UInt8_Box_t ph)`
- `int ppl_new_BD_Shape_float_from_UInt16_Box (ppl_BD_Shape_float_t *pph, ppl_const_UInt16_Box_t ph)`
- `int ppl_new_BD_Shape_float_from_UInt32_Box (ppl_BD_Shape_float_t *pph, ppl_const_UInt32_Box_t ph)`
- `int ppl_new_BD_Shape_float_from_UInt64_Box (ppl_BD_Shape_float_t *pph, ppl_const_UInt64_Box_t ph)`
- `int ppl_new_BD_Shape_float_from_Z_Box (ppl_BD_Shape_float_t *pph, ppl_const_Z_Box_t ph)`
- `int ppl_new_BD_Shape_float_from_Rational_Box (ppl_BD_Shape_float_t *pph, ppl_const_Rational_Box_t ph)`

- int [ppl_new_BD_Shape_float_from_BD_Shape_int8_t](#) (ppl_BD_Shape_float_t *pph, ppl_const_BD_Shape_int8_t_t ph)
- int [ppl_new_BD_Shape_float_from_BD_Shape_int16_t](#) (ppl_BD_Shape_float_t *pph, ppl_const_BD_Shape_int16_t_t ph)
- int [ppl_new_BD_Shape_float_from_BD_Shape_int32_t](#) (ppl_BD_Shape_float_t *pph, ppl_const_BD_Shape_int32_t_t ph)
- int [ppl_new_BD_Shape_float_from_BD_Shape_int64_t](#) (ppl_BD_Shape_float_t *pph, ppl_const_BD_Shape_int64_t_t ph)
- int [ppl_new_BD_Shape_float_from_BD_Shape_mpz_class](#) (ppl_BD_Shape_float_t *pph, ppl_const_BD_Shape_mpz_class_t ph)
- int [ppl_new_BD_Shape_float_from_BD_Shape_mpq_class](#) (ppl_BD_Shape_float_t *pph, ppl_const_BD_Shape_mpq_class_t ph)
- int [ppl_new_BD_Shape_float_from_Octagonal_Shape_int8_t](#) (ppl_BD_Shape_float_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph)
- int [ppl_new_BD_Shape_float_from_Octagonal_Shape_int16_t](#) (ppl_BD_Shape_float_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph)
- int [ppl_new_BD_Shape_float_from_Octagonal_Shape_int32_t](#) (ppl_BD_Shape_float_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph)
- int [ppl_new_BD_Shape_float_from_Octagonal_Shape_int64_t](#) (ppl_BD_Shape_float_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph)
- int [ppl_new_BD_Shape_float_from_Octagonal_Shape_mpz_class](#) (ppl_BD_Shape_float_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph)
- int [ppl_new_BD_Shape_float_from_Octagonal_Shape_mpq_class](#) (ppl_BD_Shape_float_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph)
- int [ppl_new_BD_Shape_float_from_C_Polyhedron](#) (ppl_BD_Shape_float_t *pph, ppl_const_Polyhedron_t ph)
- int [ppl_new_BD_Shape_float_from_NNC_Polyhedron](#) (ppl_BD_Shape_float_t *pph, ppl_const_Polyhedron_t ph)
- int [ppl_new_BD_Shape_float_from_Grid](#) (ppl_BD_Shape_float_t *pph, ppl_const_Grid_t ph)
- int [ppl_new_BD_Shape_float_from_Float_Box](#) (ppl_BD_Shape_float_t *pph, ppl_const_Float_Box_t ph)
- int [ppl_new_BD_Shape_float_from_BD_Shape_float](#) (ppl_BD_Shape_float_t *pph, ppl_const_BD_Shape_float_t ph)
- int [ppl_new_BD_Shape_float_from_Octagonal_Shape_float](#) (ppl_BD_Shape_float_t *pph, ppl_const_Octagonal_Shape_float_t ph)
- int [ppl_new_BD_Shape_float_from_Double_Box](#) (ppl_BD_Shape_float_t *pph, ppl_const_Double_Box_t ph)
- int [ppl_new_BD_Shape_float_from_BD_Shape_double](#) (ppl_BD_Shape_float_t *pph, ppl_const_BD_Shape_double_t ph)
- int [ppl_new_BD_Shape_float_from_Octagonal_Shape_double](#) (ppl_BD_Shape_float_t *pph, ppl_const_Octagonal_Shape_double_t ph)
- int [ppl_new_BD_Shape_float_from_Long_Double_Box](#) (ppl_BD_Shape_float_t *pph, ppl_const_Long_Double_Box_t ph)
- int [ppl_new_BD_Shape_float_from_BD_Shape_long_double](#) (ppl_BD_Shape_float_t *pph, ppl_const_BD_Shape_long_double_t ph)
- int [ppl_new_BD_Shape_float_from_Octagonal_Shape_long_double](#) (ppl_BD_Shape_float_t *pph, ppl_const_Octagonal_Shape_long_double_t ph)
- int [ppl_new_BD_Shape_float_from_Int8_Box_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_Int8_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_float_from_Int16_Box_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_Int16_Box_t ph, int complexity)

- [int ppl_new_BD_Shape_float_from_Int32_Box_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_Int32_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_float_from_Int64_Box_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_Int64_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_float_from_Uint8_Box_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_Uint8_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_float_from_Uint16_Box_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_Uint16_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_float_from_Uint32_Box_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_Uint32_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_float_from_Uint64_Box_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_Uint64_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_float_from_Z_Box_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_Z_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_float_from_Rational_Box_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_Rational_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_float_from_BD_Shape_int8_t_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)
- [int ppl_new_BD_Shape_float_from_BD_Shape_int16_t_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)
- [int ppl_new_BD_Shape_float_from_BD_Shape_int32_t_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)
- [int ppl_new_BD_Shape_float_from_BD_Shape_int64_t_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)
- [int ppl_new_BD_Shape_float_from_BD_Shape_mpz_class_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)
- [int ppl_new_BD_Shape_float_from_BD_Shape_mpq_class_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)
- [int ppl_new_BD_Shape_float_from_Octagonal_Shape_int8_t_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)
- [int ppl_new_BD_Shape_float_from_Octagonal_Shape_int16_t_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)
- [int ppl_new_BD_Shape_float_from_Octagonal_Shape_int32_t_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)
- [int ppl_new_BD_Shape_float_from_Octagonal_Shape_int64_t_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)
- [int ppl_new_BD_Shape_float_from_Octagonal_Shape_mpz_class_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)
- [int ppl_new_BD_Shape_float_from_Octagonal_Shape_mpq_class_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)
- [int ppl_new_BD_Shape_float_from_C_Polyhedron_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- [int ppl_new_BD_Shape_float_from_NNC_Polyhedron_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- [int ppl_new_BD_Shape_float_from_Grid_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_Grid_t ph, int complexity)
- [int ppl_new_BD_Shape_float_from_Float_Box_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_Float_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_float_from_BD_Shape_float_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_BD_Shape_float_t ph, int complexity)
- [int ppl_new_BD_Shape_float_from_Octagonal_Shape_float_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)

- int [ppl_new_BD_Shape_float_from_Double_Box_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_Double_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_float_from_BD_Shape_double_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_BD_Shape_double_t ph, int complexity)
- int [ppl_new_BD_Shape_float_from_Octagonal_Shape_double_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)
- int [ppl_new_BD_Shape_float_from_Long_Double_Box_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_float_from_BD_Shape_long_double_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity)
- int [ppl_new_BD_Shape_float_from_Octagonal_Shape_long_double_with_complexity](#) (ppl_BD_Shape_float_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)
- int [ppl_new_BD_Shape_float_from_Constraint_System](#) (ppl_BD_Shape_float_t *pph, ppl_const_Constraint_System_t cs)
- int [ppl_new_BD_Shape_float_from_Congruence_System](#) (ppl_BD_Shape_float_t *pph, ppl_const_Congruence_System_t cs)
- int [ppl_new_BD_Shape_float_from_Generator_System](#) (ppl_BD_Shape_float_t *pph, ppl_const_Generator_System_t cs)
- int [ppl_BD_Shape_float_space_dimension](#) (ppl_const_BD_Shape_float_t ph, [ppl_dimension_type](#) *m)
- int [ppl_BD_Shape_float_affine_dimension](#) (ppl_const_BD_Shape_float_t ph, [ppl_dimension_type](#) *m)
- int [ppl_BD_Shape_float_relation_with_Constraint](#) (ppl_const_BD_Shape_float_t ph, ppl_const_Constraint_t c)
- int [ppl_BD_Shape_float_relation_with_Generator](#) (ppl_const_BD_Shape_float_t ph, ppl_const_Generator_t c)
- int [ppl_BD_Shape_float_relation_with_Congruence](#) (ppl_const_BD_Shape_float_t ph, ppl_const_Congruence_t c)
- int [ppl_BD_Shape_float_get_constraints](#) (ppl_const_BD_Shape_float_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_BD_Shape_float_get_congruences](#) (ppl_const_BD_Shape_float_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_BD_Shape_float_get_minimized_constraints](#) (ppl_const_BD_Shape_float_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_BD_Shape_float_get_minimized_congruences](#) (ppl_const_BD_Shape_float_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_BD_Shape_float_is_empty](#) (ppl_const_BD_Shape_float_t ph)
- int [ppl_BD_Shape_float_is_universe](#) (ppl_const_BD_Shape_float_t ph)
- int [ppl_BD_Shape_float_is_bounded](#) (ppl_const_BD_Shape_float_t ph)
- int [ppl_BD_Shape_float_contains_integer_point](#) (ppl_const_BD_Shape_float_t ph)
- int [ppl_BD_Shape_float_is_topologically_closed](#) (ppl_const_BD_Shape_float_t ph)
- int [ppl_BD_Shape_float_is_discrete](#) (ppl_const_BD_Shape_float_t ph)
- int [ppl_BD_Shape_float_topological_closure_assign](#) (ppl_BD_Shape_float_t ph)
- int [ppl_BD_Shape_float_bounds_from_above](#) (ppl_const_BD_Shape_float_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_BD_Shape_float_bounds_from_below](#) (ppl_const_BD_Shape_float_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_BD_Shape_float_maximize](#) (ppl_const_BD_Shape_float_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_BD_Shape_float_minimize](#) (ppl_const_BD_Shape_float_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)

- int [ppl_BD_Shape_float_maximize_with_point](#) (ppl_const_BD_Shape_float_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_BD_Shape_float_minimize_with_point](#) (ppl_const_BD_Shape_float_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_BD_Shape_float_frequency](#) (ppl_const_BD_Shape_float_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)
- int [ppl_BD_Shape_float_contains_BD_Shape_float](#) (ppl_const_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y)
- int [ppl_BD_Shape_float_strictly_contains_BD_Shape_float](#) (ppl_const_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y)
- int [ppl_BD_Shape_float_is_disjoint_from_BD_Shape_float](#) (ppl_const_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y)
- int [ppl_BD_Shape_float_equals_BD_Shape_float](#) (ppl_const_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y)
- int [ppl_BD_Shape_float_OK](#) (ppl_const_BD_Shape_float_t ph)
- int [ppl_BD_Shape_float_add_constraint](#) (ppl_BD_Shape_float_t ph, ppl_const_Constraint_t c)
- int [ppl_BD_Shape_float_add_congruence](#) (ppl_BD_Shape_float_t ph, ppl_const_Congruence_t c)
- int [ppl_BD_Shape_float_add_constraints](#) (ppl_BD_Shape_float_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_BD_Shape_float_add_congruences](#) (ppl_BD_Shape_float_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_BD_Shape_float_refine_with_constraint](#) (ppl_BD_Shape_float_t ph, ppl_const_Constraint_t c)
- int [ppl_BD_Shape_float_refine_with_congruence](#) (ppl_BD_Shape_float_t ph, ppl_const_Congruence_t c)
- int [ppl_BD_Shape_float_refine_with_constraints](#) (ppl_BD_Shape_float_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_BD_Shape_float_refine_with_congruences](#) (ppl_BD_Shape_float_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_BD_Shape_float_intersection_assign](#) (ppl_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y)
- int [ppl_BD_Shape_float_upper_bound_assign](#) (ppl_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y)
- int [ppl_BD_Shape_float_difference_assign](#) (ppl_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y)
- int [ppl_BD_Shape_float_concatenate_assign](#) (ppl_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y)
- int [ppl_BD_Shape_float_time_elapse_assign](#) (ppl_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y)
- int [ppl_BD_Shape_float_upper_bound_assign_if_exact](#) (ppl_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y)
- int [ppl_BD_Shape_float_simplify_using_context_assign](#) (ppl_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y)
- int [ppl_BD_Shape_float_constrains](#) (ppl_BD_Shape_float_t ph, [ppl_dimension_type](#) var)
- int [ppl_BD_Shape_float_unconstrain_space_dimension](#) (ppl_BD_Shape_float_t ph, [ppl_dimension_type](#) var)
- int [ppl_BD_Shape_float_unconstrain_space_dimensions](#) (ppl_BD_Shape_float_t ph, [ppl_dimension_type](#) ds[], size_t n)

- int [ppl_BD_Shape_float_affine_image](#) (ppl_BD_Shape_float_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_BD_Shape_float_affine_preimage](#) (ppl_BD_Shape_float_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_BD_Shape_float_bounded_affine_image](#) (ppl_BD_Shape_float_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_BD_Shape_float_bounded_affine_preimage](#) (ppl_BD_Shape_float_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_BD_Shape_float_generalized_affine_image](#) (ppl_BD_Shape_float_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_BD_Shape_float_generalized_affine_preimage](#) (ppl_BD_Shape_float_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_BD_Shape_float_generalized_affine_image_lhs_rhs](#) (ppl_BD_Shape_float_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_BD_Shape_float_generalized_affine_preimage_lhs_rhs](#) (ppl_BD_Shape_float_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_BD_Shape_float_add_space_dimensions_and_embed](#) (ppl_BD_Shape_float_t ph, [ppl_dimension_type](#) d)
- int [ppl_BD_Shape_float_add_space_dimensions_and_project](#) (ppl_BD_Shape_float_t ph, [ppl_dimension_type](#) d)
- int [ppl_BD_Shape_float_remove_space_dimensions](#) (ppl_BD_Shape_float_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_BD_Shape_float_remove_higher_space_dimensions](#) (ppl_BD_Shape_float_t ph, [ppl_dimension_type](#) d)
- int [ppl_BD_Shape_float_expand_space_dimension](#) (ppl_BD_Shape_float_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_BD_Shape_float_fold_space_dimensions](#) (ppl_BD_Shape_float_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_BD_Shape_float_map_space_dimensions](#) (ppl_BD_Shape_float_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_BD_Shape_float_drop_some_non_integer_points](#) (ppl_BD_Shape_float_t ph, int complexity)
- int [ppl_BD_Shape_float_drop_some_non_integer_points_2](#) (ppl_BD_Shape_float_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_BD_Shape_float_external_memory_in_bytes](#) (ppl_const_BD_Shape_float_t ps, size_t *sz)
- int [ppl_BD_Shape_float_total_memory_in_bytes](#) (ppl_const_BD_Shape_float_t ps, size_t *sz)
- int [ppl_BD_Shape_float_BHMZ05_widening_assign_with_tokens](#) (ppl_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y, unsigned *tp)
- int [ppl_BD_Shape_float_H79_widening_assign_with_tokens](#) (ppl_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y, unsigned *tp)
- int [ppl_BD_Shape_float_BHMZ05_widening_assign](#) (ppl_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y)
- int [ppl_BD_Shape_float_H79_widening_assign](#) (ppl_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y)
- int [ppl_BD_Shape_float_widening_assign_with_tokens](#) (ppl_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y, unsigned *tp)

- int [ppl_BD_Shape_float_widening_assign](#) (ppl_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y)
- int [ppl_BD_Shape_float_limited_BHMZ05_extrapolation_assign_with_tokens](#) (ppl_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- int [ppl_BD_Shape_float_limited_H79_extrapolation_assign_with_tokens](#) (ppl_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- int [ppl_BD_Shape_float_limited_CC76_extrapolation_assign_with_tokens](#) (ppl_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- int [ppl_BD_Shape_float_limited_BHMZ05_extrapolation_assign](#) (ppl_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y, ppl_const_Constraint_System_t cs)
- int [ppl_BD_Shape_float_limited_H79_extrapolation_assign](#) (ppl_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y, ppl_const_Constraint_System_t cs)
- int [ppl_BD_Shape_float_limited_CC76_extrapolation_assign](#) (ppl_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y, ppl_const_Constraint_System_t cs)
- int [ppl_BD_Shape_float_CC76_extrapolation_assign_with_tokens](#) (ppl_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y, unsigned *tp)
- int [ppl_BD_Shape_float_CC76_extrapolation_assign](#) (ppl_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y)
- int [ppl_BD_Shape_float_CC76_narrowing_assign](#) (ppl_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y)
- int [ppl_BD_Shape_float_linear_partition](#) (ppl_const_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y, ppl_BD_Shape_float_t *p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest)
- int [ppl_BD_Shape_float_wrap_assign](#) (ppl_BD_Shape_float_t ph, [ppl_dimension_type](#) ds[], size_t n, enum [ppl_enum_Bounded_Integer_Type_Width](#) w, enum [ppl_enum_Bounded_Integer_Type_Representation](#) r, enum [ppl_enum_Bounded_Integer_Type_Overflow](#) o, const ppl_const_Constraint_System_t *pcs, unsigned complexity_threshold, int wrap_individually)
- int [ppl_new_BD_Shape_float_recycle_Constraint_System](#) (ppl_BD_Shape_float_t *pph, ppl_Constraint_System_t cs)
- int [ppl_new_BD_Shape_float_recycle_Congruence_System](#) (ppl_BD_Shape_float_t *pph, ppl_Congruence_System_t cs)
- int [ppl_new_BD_Shape_float_recycle_Generator_System](#) (ppl_BD_Shape_float_t *pph, ppl_Generator_System_t cs)
- int [ppl_assign_BD_Shape_float_from_BD_Shape_float](#) (ppl_BD_Shape_float_t dst, ppl_const_BD_Shape_float_t src)
- int [ppl_BD_Shape_float_add_recycled_constraints](#) (ppl_BD_Shape_float_t ph, ppl_Constraint_System_t cs)
- int [ppl_BD_Shape_float_add_recycled_congruences](#) (ppl_BD_Shape_float_t ph, ppl_Congruence_System_t cs)
- int [ppl_termination_test_MS_BD_Shape_float](#) (ppl_const_BD_Shape_float_t pset)
- int [ppl_termination_test_PR_BD_Shape_float](#) (ppl_const_BD_Shape_float_t pset)
- int [ppl_one_affine_ranking_function_MS_BD_Shape_float](#) (ppl_const_BD_Shape_float_t pset, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_BD_Shape_float](#) (ppl_const_BD_Shape_float_t pset, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_BD_Shape_float](#) (ppl_const_BD_Shape_float_t pset, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_BD_Shape_float](#) (ppl_const_BD_Shape_float_t pset, ppl_Polyhedron_t ph)
- int [ppl_termination_test_MS_BD_Shape_float_2](#) (ppl_const_BD_Shape_float_t pset_before, ppl_const_BD_Shape_float_t pset_after)
- int [ppl_termination_test_PR_BD_Shape_float_2](#) (ppl_const_BD_Shape_float_t pset_before, ppl_const_BD_Shape_float_t pset_after)

- int [ppl_one_affine_ranking_function_MS_BD_Shape_float_2](#) (ppl_const_BD_Shape_float_t pset_before, ppl_const_BD_Shape_float_t pset_after, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_BD_Shape_float_2](#) (ppl_const_BD_Shape_float_t pset_before, ppl_const_BD_Shape_float_t pset_after, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_BD_Shape_float_2](#) (ppl_const_BD_Shape_float_t pset_before, ppl_const_BD_Shape_float_t pset_after, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_BD_Shape_float_2](#) (ppl_const_BD_Shape_float_t pset_before, ppl_const_BD_Shape_float_t pset_after, ppl_Polyhedron_t ph)

10.6.1 Detailed Description

Types and functions for [ppl_BD_Shape_float_tag](#).

10.6.2 Friends And Related Function Documentation

10.6.2.1 int [ppl_all_affine_ranking_functions_MS_BD_Shape_float](#) (ppl_const_BD_Shape_float_t *pset*, ppl_Polyhedron_t *ph*) [[related](#)]

10.6.2.2 int [ppl_all_affine_ranking_functions_MS_BD_Shape_float_2](#) (ppl_const_BD_Shape_float_t *pset_before*, ppl_const_BD_Shape_float_t *pset_after*, ppl_Polyhedron_t *ph*) [[related](#)]

10.6.2.3 int [ppl_all_affine_ranking_functions_PR_BD_Shape_float](#) (ppl_const_BD_Shape_float_t *pset*, ppl_Polyhedron_t *ph*) [[related](#)]

10.6.2.4 int [ppl_all_affine_ranking_functions_PR_BD_Shape_float_2](#) (ppl_const_BD_Shape_float_t *pset_before*, ppl_const_BD_Shape_float_t *pset_after*, ppl_Polyhedron_t *ph*) [[related](#)]

10.6.2.5 int [ppl_assign_BD_Shape_float_from_BD_Shape_float](#) (ppl_BD_Shape_float_t *dst*, ppl_const_BD_Shape_float_t *src*) [[related](#)]

10.6.2.6 int [ppl_BD_Shape_float_add_congruence](#) (ppl_BD_Shape_float_t *ph*, ppl_const_Congruence_t *c*) [[related](#)]

- 10.6.2.7 `int ppl_BD_Shape_float_add_congruences (ppl_BD_Shape_float_t ph,
ppl_const_Congruence_System_t cs)` [`related`]

- 10.6.2.8 `int ppl_BD_Shape_float_add_constraint (ppl_BD_Shape_float_t ph,
ppl_const_Constraint_t c)` [`related`]

- 10.6.2.9 `int ppl_BD_Shape_float_add_constraints (ppl_BD_Shape_float_t ph,
ppl_const_Constraint_System_t cs)` [`related`]

- 10.6.2.10 `int ppl_BD_Shape_float_add_recycled_congruences (ppl_BD_Shape_float_t ph,
ppl_Congruence_System_t cs)` [`related`]

- 10.6.2.11 `int ppl_BD_Shape_float_add_recycled_constraints (ppl_BD_Shape_float_t ph,
ppl_Constraint_System_t cs)` [`related`]

- 10.6.2.12 `int ppl_BD_Shape_float_add_space_dimensions_and_embed (ppl_BD_Shape_float_t ph,
ppl_dimension_type d)` [`related`]

- 10.6.2.13 `int ppl_BD_Shape_float_add_space_dimensions_and_project (ppl_BD_Shape_float_t
ph, ppl_dimension_type d)` [`related`]

- 10.6.2.14 `int ppl_BD_Shape_float_affine_dimension (ppl_const_BD_Shape_float_t ph,
ppl_dimension_type * m)` [`related`]

- 10.6.2.15 `int ppl_BD_Shape_float_affine_image (ppl_BD_Shape_float_t ph, ppl_dimension_type
var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]

10.6.2.16 `int ppl_BD_Shape_float_affine_preimage (ppl_BD_Shape_float_t ph,
ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)`
[related]

10.6.2.17 `int ppl_BD_Shape_float_BHMZ05_widening_assign (ppl_BD_Shape_float_t x,
ppl_const_BD_Shape_float_t y)` [related]

10.6.2.18 `int ppl_BD_Shape_float_BHMZ05_widening_assign_with_tokens
(ppl_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y, unsigned * tp)` [related]

10.6.2.19 `int ppl_BD_Shape_float_bounded_affine_image (ppl_BD_Shape_float_t
ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb,
ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [related]

10.6.2.20 `int ppl_BD_Shape_float_bounded_affine_preimage (ppl_BD_Shape_float_t
ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb,
ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [related]

10.6.2.21 `int ppl_BD_Shape_float_bounds_from_above (ppl_const_BD_Shape_float_t ph,
ppl_const_Linear_Expression_t le)` [related]

10.6.2.22 `int ppl_BD_Shape_float_bounds_from_below (ppl_const_BD_Shape_float_t ph,
ppl_const_Linear_Expression_t le)` [related]

10.6.2.23 `int ppl_BD_Shape_float_CC76_extrapolation_assign (ppl_BD_Shape_float_t x,
ppl_const_BD_Shape_float_t y)` [related]

10.6.2.24 `int ppl_BD_Shape_float_CC76_extrapolation_assign_with_tokens
(ppl_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y, unsigned * tp)` [related]

- 10.6.2.25 `int ppl_BD_Shape_float_CC76_narrowing_assign (ppl_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y)` [**related**]
- 10.6.2.26 `int ppl_BD_Shape_float_concatenate_assign (ppl_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y)` [**related**]
- 10.6.2.27 `int ppl_BD_Shape_float_constrains (ppl_BD_Shape_float_t ph, ppl_dimension_type var)` [**related**]
- 10.6.2.28 `int ppl_BD_Shape_float_contains_BD_Shape_float (ppl_const_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y)` [**related**]
- 10.6.2.29 `int ppl_BD_Shape_float_contains_integer_point (ppl_const_BD_Shape_float_t ph)` [**related**]
- 10.6.2.30 `int ppl_BD_Shape_float_difference_assign (ppl_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y)` [**related**]
- 10.6.2.31 `int ppl_BD_Shape_float_drop_some_non_integer_points (ppl_BD_Shape_float_t ph, int complexity)` [**related**]
- 10.6.2.32 `int ppl_BD_Shape_float_drop_some_non_integer_points_2 (ppl_BD_Shape_float_t ph, ppl_dimension_type ds[], size_t n, int complexity)` [**related**]
- 10.6.2.33 `int ppl_BD_Shape_float_equals_BD_Shape_float (ppl_const_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y)` [**related**]

- 10.6.2.34 `int ppl_BD_Shape_float_expand_space_dimension (ppl_BD_Shape_float_t ph,
ppl_dimension_type d, ppl_dimension_type m)` [**related**]
- 10.6.2.35 `int ppl_BD_Shape_float_external_memory_in_bytes (ppl_const_BD_Shape_float_t ps,
size_t * sz)` [**related**]
- 10.6.2.36 `int ppl_BD_Shape_float_fold_space_dimensions (ppl_BD_Shape_float_t ph,
ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [**related**]
- 10.6.2.37 `int ppl_BD_Shape_float_frequency (ppl_const_BD_Shape_float_t ph,
ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd,
ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)` [**related**]
- 10.6.2.38 `int ppl_BD_Shape_float_generalized_affine_image (ppl_BD_Shape_float_t
ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.6.2.39 `int ppl_BD_Shape_float_generalized_affine_image_lhs_rhs (ppl_BD_Shape_float_t
ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym,
ppl_const_Linear_Expression_t rhs)` [**related**]
- 10.6.2.40 `int ppl_BD_Shape_float_generalized_affine_preimage (ppl_BD_Shape_float_t
ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.6.2.41 `int ppl_BD_Shape_float_generalized_affine_preimage_lhs_rhs (ppl_BD_Shape_float_t
ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym,
ppl_const_Linear_Expression_t rhs)` [**related**]

- 10.6.2.42 `int ppl_BD_Shape_float_get_congruences (ppl_const_BD_Shape_float_t ph,
ppl_const_Congruence_System_t * pcs)` [**related**]

- 10.6.2.43 `int ppl_BD_Shape_float_get_constraints (ppl_const_BD_Shape_float_t ph,
ppl_const_Constraint_System_t * pcs)` [**related**]

- 10.6.2.44 `int ppl_BD_Shape_float_get_minimized_congruences (ppl_const_BD_Shape_float_t ph,
ppl_const_Congruence_System_t * pcs)` [**related**]

- 10.6.2.45 `int ppl_BD_Shape_float_get_minimized_constraints (ppl_const_BD_Shape_float_t ph,
ppl_const_Constraint_System_t * pcs)` [**related**]

- 10.6.2.46 `int ppl_BD_Shape_float_H79_widening_assign (ppl_BD_Shape_float_t x,
ppl_const_BD_Shape_float_t y)` [**related**]

- 10.6.2.47 `int ppl_BD_Shape_float_H79_widening_assign_with_tokens (ppl_BD_Shape_float_t x,
ppl_const_BD_Shape_float_t y, unsigned * tp)` [**related**]

- 10.6.2.48 `int ppl_BD_Shape_float_intersection_assign (ppl_BD_Shape_float_t x,
ppl_const_BD_Shape_float_t y)` [**related**]

- 10.6.2.49 `int ppl_BD_Shape_float_is_bounded (ppl_const_BD_Shape_float_t ph)` [**related**]

- 10.6.2.50 `int ppl_BD_Shape_float_is_discrete (ppl_const_BD_Shape_float_t ph)` [**related**]

- 10.6.2.51 `int ppl_BD_Shape_float_is_disjoint_from_BD_Shape_float
(ppl_const_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y)` [**related**]

10.6.2.52 `int ppl_BD_Shape_float_is_empty (ppl_const_BD_Shape_float_t ph)` [**related**]

10.6.2.53 `int ppl_BD_Shape_float_is_topologically_closed (ppl_const_BD_Shape_float_t ph)`
[**related**]

10.6.2.54 `int ppl_BD_Shape_float_is_universe (ppl_const_BD_Shape_float_t ph)` [**related**]

10.6.2.55 `int ppl_BD_Shape_float_limited_BHMZ05_extrapolation_assign (ppl_BD_Shape_float_t x,
ppl_const_BD_Shape_float_t y, ppl_const_Constraint_System_t cs)` [**related**]

10.6.2.56 `int ppl_BD_Shape_float_limited_BHMZ05_extrapolation_assign_with_tokens (ppl_BD_Shape_float_t x,
ppl_const_BD_Shape_float_t y, ppl_const_Constraint_System_t cs, unsigned * tp)` [**related**]

10.6.2.57 `int ppl_BD_Shape_float_limited_CC76_extrapolation_assign (ppl_BD_Shape_float_t x,
ppl_const_BD_Shape_float_t y, ppl_const_Constraint_System_t cs)` [**related**]

10.6.2.58 `int ppl_BD_Shape_float_limited_CC76_extrapolation_assign_with_tokens (ppl_BD_Shape_float_t x,
ppl_const_BD_Shape_float_t y, ppl_const_Constraint_System_t cs, unsigned * tp)` [**related**]

10.6.2.59 `int ppl_BD_Shape_float_limited_H79_extrapolation_assign (ppl_BD_Shape_float_t x,
ppl_const_BD_Shape_float_t y, ppl_const_Constraint_System_t cs)` [**related**]

10.6.2.60 `int ppl_BD_Shape_float_limited_H79_extrapolation_assign_with_tokens (ppl_BD_Shape_float_t x,
ppl_const_BD_Shape_float_t y, ppl_const_Constraint_System_t cs, unsigned * tp)` [**related**]

- 10.6.2.61 `int ppl_BD_Shape_float_linear_partition (ppl_const_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y, ppl_BD_Shape_float_t * p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t * p_rest)` [**related**]
- 10.6.2.62 `int ppl_BD_Shape_float_map_space_dimensions (ppl_BD_Shape_float_t ph, ppl_dimension_type maps[], size_t n)` [**related**]
- 10.6.2.63 `int ppl_BD_Shape_float_maximize (ppl_const_BD_Shape_float_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [**related**]
- 10.6.2.64 `int ppl_BD_Shape_float_maximize_with_point (ppl_const_BD_Shape_float_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` [**related**]
- 10.6.2.65 `int ppl_BD_Shape_float_minimize (ppl_const_BD_Shape_float_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [**related**]
- 10.6.2.66 `int ppl_BD_Shape_float_minimize_with_point (ppl_const_BD_Shape_float_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` [**related**]
- 10.6.2.67 `int ppl_BD_Shape_float_OK (ppl_const_BD_Shape_float_t ph)` [**related**]
- 10.6.2.68 `int ppl_BD_Shape_float_refine_with_congruence (ppl_BD_Shape_float_t ph, ppl_const_Congruence_t c)` [**related**]
- 10.6.2.69 `int ppl_BD_Shape_float_refine_with_congruences (ppl_BD_Shape_float_t ph, ppl_const_Congruence_System_t cs)` [**related**]

- 10.6.2.70** `int ppl_BD_Shape_float_refine_with_constraint (ppl_BD_Shape_float_t ph,
ppl_const_Constraint_t c)` [**related**]
- 10.6.2.71** `int ppl_BD_Shape_float_refine_with_constraints (ppl_BD_Shape_float_t ph,
ppl_const_Constraint_System_t cs)` [**related**]
- 10.6.2.72** `int ppl_BD_Shape_float_relation_with_Congruence (ppl_const_BD_Shape_float_t ph,
ppl_const_Congruence_t c)` [**related**]
- 10.6.2.73** `int ppl_BD_Shape_float_relation_with_Constraint (ppl_const_BD_Shape_float_t ph,
ppl_const_Constraint_t c)` [**related**]
- 10.6.2.74** `int ppl_BD_Shape_float_relation_with_Generator (ppl_const_BD_Shape_float_t ph,
ppl_const_Generator_t c)` [**related**]
- 10.6.2.75** `int ppl_BD_Shape_float_remove_higher_space_dimensions (ppl_BD_Shape_float_t ph,
ppl_dimension_type d)` [**related**]
- 10.6.2.76** `int ppl_BD_Shape_float_remove_space_dimensions (ppl_BD_Shape_float_t ph,
ppl_dimension_type ds[], size_t n)` [**related**]
- 10.6.2.77** `int ppl_BD_Shape_float_simplify_using_context_assign (ppl_BD_Shape_float_t x,
ppl_const_BD_Shape_float_t y)` [**related**]
- 10.6.2.78** `int ppl_BD_Shape_float_space_dimension (ppl_const_BD_Shape_float_t ph,
ppl_dimension_type * m)` [**related**]

- 10.6.2.79 `int ppl_BD_Shape_float_strictly_contains_BD_Shape_float`
`(ppl_const_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y) [related]`
- 10.6.2.80 `int ppl_BD_Shape_float_time_elapse_assign (ppl_BD_Shape_float_t x,`
`ppl_const_BD_Shape_float_t y) [related]`
- 10.6.2.81 `int ppl_BD_Shape_float_topological_closure_assign (ppl_BD_Shape_float_t ph)`
`[related]`
- 10.6.2.82 `int ppl_BD_Shape_float_total_memory_in_bytes (ppl_const_BD_Shape_float_t ps,`
`size_t * sz) [related]`
- 10.6.2.83 `int ppl_BD_Shape_float_unconstrain_space_dimension (ppl_BD_Shape_float_t ph,`
`ppl_dimension_type var) [related]`
- 10.6.2.84 `int ppl_BD_Shape_float_unconstrain_space_dimensions (ppl_BD_Shape_float_t ph,`
`ppl_dimension_type ds[], size_t n) [related]`
- 10.6.2.85 `int ppl_BD_Shape_float_upper_bound_assign (ppl_BD_Shape_float_t x,`
`ppl_const_BD_Shape_float_t y) [related]`
- 10.6.2.86 `int ppl_BD_Shape_float_upper_bound_assign_if_exact (ppl_BD_Shape_float_t x,`
`ppl_const_BD_Shape_float_t y) [related]`
- 10.6.2.87 `int ppl_BD_Shape_float_widening_assign (ppl_BD_Shape_float_t x,`
`ppl_const_BD_Shape_float_t y) [related]`

- 10.6.2.88 `int ppl_BD_Shape_float_widening_assign_with_tokens (ppl_BD_Shape_float_t x, ppl_const_BD_Shape_float_t y, unsigned * tp)` [related]
- 10.6.2.89 `int ppl_BD_Shape_float_wrap_assign (ppl_BD_Shape_float_t ph, ppl_dimension_type ds[], size_t n, enum ppl_enum_Bounded_Integer_Type_Width w, enum ppl_enum_Bounded_Integer_Type_Representation r, enum ppl_enum_Bounded_Integer_Type_Overflow o, const ppl_const_Constraint_System_t * pcs, unsigned complexity_threshold, int wrap_individually)` [related]
- 10.6.2.90 `int ppl_delete_BD_Shape_float (ppl_const_BD_Shape_float_t ph)` [related]
- 10.6.2.91 `int ppl_new_BD_Shape_float_from_BD_Shape_double (ppl_BD_Shape_float_t * pph, ppl_const_BD_Shape_double_t ph)` [related]
- 10.6.2.92 `int ppl_new_BD_Shape_float_from_BD_Shape_double_with_complexity (ppl_BD_Shape_float_t * pph, ppl_const_BD_Shape_double_t ph, int complexity)` [related]
- 10.6.2.93 `int ppl_new_BD_Shape_float_from_BD_Shape_float (ppl_BD_Shape_float_t * pph, ppl_const_BD_Shape_float_t ph)` [related]
- 10.6.2.94 `int ppl_new_BD_Shape_float_from_BD_Shape_float_with_complexity (ppl_BD_Shape_float_t * pph, ppl_const_BD_Shape_float_t ph, int complexity)` [related]
- 10.6.2.95 `int ppl_new_BD_Shape_float_from_BD_Shape_int16_t (ppl_BD_Shape_float_t * pph, ppl_const_BD_Shape_int16_t_t ph)` [related]

- 10.6.2.96 `int ppl_new_BD_Shape_float_from_BD_Shape_int16_t_with_complexity`
 (`ppl_BD_Shape_float_t * pph`, `ppl_const_BD_Shape_int16_t_t ph`, `int complexity`)
 [related]
- 10.6.2.97 `int ppl_new_BD_Shape_float_from_BD_Shape_int32_t` (`ppl_BD_Shape_float_t * pph`,
`ppl_const_BD_Shape_int32_t_t ph`) [related]
- 10.6.2.98 `int ppl_new_BD_Shape_float_from_BD_Shape_int32_t_with_complexity`
 (`ppl_BD_Shape_float_t * pph`, `ppl_const_BD_Shape_int32_t_t ph`, `int complexity`)
 [related]
- 10.6.2.99 `int ppl_new_BD_Shape_float_from_BD_Shape_int64_t` (`ppl_BD_Shape_float_t * pph`,
`ppl_const_BD_Shape_int64_t_t ph`) [related]
- 10.6.2.100 `int ppl_new_BD_Shape_float_from_BD_Shape_int64_t_with_complexity`
 (`ppl_BD_Shape_float_t * pph`, `ppl_const_BD_Shape_int64_t_t ph`, `int complexity`)
 [related]
- 10.6.2.101 `int ppl_new_BD_Shape_float_from_BD_Shape_int8_t` (`ppl_BD_Shape_float_t * pph`,
`ppl_const_BD_Shape_int8_t_t ph`) [related]
- 10.6.2.102 `int ppl_new_BD_Shape_float_from_BD_Shape_int8_t_with_complexity`
 (`ppl_BD_Shape_float_t * pph`, `ppl_const_BD_Shape_int8_t_t ph`, `int complexity`)
 [related]
- 10.6.2.103 `int ppl_new_BD_Shape_float_from_BD_Shape_long_double` (`ppl_BD_Shape_float_t *`
`pph`, `ppl_const_BD_Shape_long_double_t_t ph`) [related]

- 10.6.2.104** `int ppl_new_BD_Shape_float_from_BD_Shape_long_double_with_complexity`
 (`ppl_BD_Shape_float_t * pph`, `ppl_const_BD_Shape_long_double_t ph`, `int complexity`)
 [`related`]
- 10.6.2.105** `int ppl_new_BD_Shape_float_from_BD_Shape_mpq_class` (`ppl_BD_Shape_float_t *`
`pph`, `ppl_const_BD_Shape_mpq_class_t ph`) [`related`]
- 10.6.2.106** `int ppl_new_BD_Shape_float_from_BD_Shape_mpq_class_with_complexity`
 (`ppl_BD_Shape_float_t * pph`, `ppl_const_BD_Shape_mpq_class_t ph`, `int complexity`)
 [`related`]
- 10.6.2.107** `int ppl_new_BD_Shape_float_from_BD_Shape_mpz_class` (`ppl_BD_Shape_float_t *`
`pph`, `ppl_const_BD_Shape_mpz_class_t ph`) [`related`]
- 10.6.2.108** `int ppl_new_BD_Shape_float_from_BD_Shape_mpz_class_with_complexity`
 (`ppl_BD_Shape_float_t * pph`, `ppl_const_BD_Shape_mpz_class_t ph`, `int complexity`)
 [`related`]
- 10.6.2.109** `int ppl_new_BD_Shape_float_from_C_Polyhedron` (`ppl_BD_Shape_float_t * pph`,
`ppl_const_Polyhedron_t ph`) [`related`]
- 10.6.2.110** `int ppl_new_BD_Shape_float_from_C_Polyhedron_with_complexity`
 (`ppl_BD_Shape_float_t * pph`, `ppl_const_Polyhedron_t ph`, `int complexity`)
 [`related`]
- 10.6.2.111** `int ppl_new_BD_Shape_float_from_Congruence_System` (`ppl_BD_Shape_float_t * pph`,
`ppl_const_Congruence_System_t cs`) [`related`]
- 10.6.2.112** `int ppl_new_BD_Shape_float_from_Constraint_System` (`ppl_BD_Shape_float_t * pph`,
`ppl_const_Constraint_System_t cs`) [`related`]

- 10.6.2.113 `int ppl_new_BD_Shape_float_from_Double_Box (ppl_BD_Shape_float_t * pph,
ppl_const_Double_Box_t ph)` [`related`]
- 10.6.2.114 `int ppl_new_BD_Shape_float_from_Double_Box_with_complexity
(ppl_BD_Shape_float_t * pph, ppl_const_Double_Box_t ph, int complexity)`
[`related`]
- 10.6.2.115 `int ppl_new_BD_Shape_float_from_Float_Box (ppl_BD_Shape_float_t * pph,
ppl_const_Float_Box_t ph)` [`related`]
- 10.6.2.116 `int ppl_new_BD_Shape_float_from_Float_Box_with_complexity
(ppl_BD_Shape_float_t * pph, ppl_const_Float_Box_t ph, int complexity)`
[`related`]
- 10.6.2.117 `int ppl_new_BD_Shape_float_from_Generator_System (ppl_BD_Shape_float_t * pph,
ppl_const_Generator_System_t cs)` [`related`]
- 10.6.2.118 `int ppl_new_BD_Shape_float_from_Grid (ppl_BD_Shape_float_t * pph,
ppl_const_Grid_t ph)` [`related`]
- 10.6.2.119 `int ppl_new_BD_Shape_float_from_Grid_with_complexity (ppl_BD_Shape_float_t *
pph, ppl_const_Grid_t ph, int complexity)` [`related`]
- 10.6.2.120 `int ppl_new_BD_Shape_float_from_Int16_Box (ppl_BD_Shape_float_t * pph,
ppl_const_Int16_Box_t ph)` [`related`]
- 10.6.2.121 `int ppl_new_BD_Shape_float_from_Int16_Box_with_complexity
(ppl_BD_Shape_float_t * pph, ppl_const_Int16_Box_t ph, int complexity)`
[`related`]

- 10.6.2.122 `int ppl_new_BD_Shape_float_from_Int32_Box (ppl_BD_Shape_float_t * pph,
ppl_const_Int32_Box_t ph)` [`related`]
- 10.6.2.123 `int ppl_new_BD_Shape_float_from_Int32_Box_with_complexity
(ppl_BD_Shape_float_t * pph, ppl_const_Int32_Box_t ph, int complexity)`
[`related`]
- 10.6.2.124 `int ppl_new_BD_Shape_float_from_Int64_Box (ppl_BD_Shape_float_t * pph,
ppl_const_Int64_Box_t ph)` [`related`]
- 10.6.2.125 `int ppl_new_BD_Shape_float_from_Int64_Box_with_complexity
(ppl_BD_Shape_float_t * pph, ppl_const_Int64_Box_t ph, int complexity)`
[`related`]
- 10.6.2.126 `int ppl_new_BD_Shape_float_from_Int8_Box (ppl_BD_Shape_float_t * pph,
ppl_const_Int8_Box_t ph)` [`related`]
- 10.6.2.127 `int ppl_new_BD_Shape_float_from_Int8_Box_with_complexity (ppl_BD_Shape_float_t
* pph, ppl_const_Int8_Box_t ph, int complexity)` [`related`]
- 10.6.2.128 `int ppl_new_BD_Shape_float_from_Long_Double_Box (ppl_BD_Shape_float_t * pph,
ppl_const_Long_Double_Box_t ph)` [`related`]
- 10.6.2.129 `int ppl_new_BD_Shape_float_from_Long_Double_Box_with_complexity
(ppl_BD_Shape_float_t * pph, ppl_const_Long_Double_Box_t ph, int complexity)`
[`related`]
- 10.6.2.130 `int ppl_new_BD_Shape_float_from_NNC_Polyhedron (ppl_BD_Shape_float_t * pph,
ppl_const_Polyhedron_t ph)` [`related`]

- 10.6.2.131 `int ppl_new_BD_Shape_float_from_NNC_Polyhedron_with_complexity`
 (`ppl_BD_Shape_float_t *pph`, `ppl_const_Polyhedron_t ph`, `int complexity`)
 [related]
- 10.6.2.132 `int ppl_new_BD_Shape_float_from_Octagonal_Shape_double` (`ppl_BD_Shape_float_t`
 * `pph`, `ppl_const_Octagonal_Shape_double_t ph`) [related]
- 10.6.2.133 `int ppl_new_BD_Shape_float_from_Octagonal_Shape_double_with_complexity`
 (`ppl_BD_Shape_float_t *pph`, `ppl_const_Octagonal_Shape_double_t ph`, `int`
complexity) [related]
- 10.6.2.134 `int ppl_new_BD_Shape_float_from_Octagonal_Shape_float` (`ppl_BD_Shape_float_t` *
pph, `ppl_const_Octagonal_Shape_float_t ph`) [related]
- 10.6.2.135 `int ppl_new_BD_Shape_float_from_Octagonal_Shape_float_with_complexity`
 (`ppl_BD_Shape_float_t *pph`, `ppl_const_Octagonal_Shape_float_t ph`, `int complexity`)
 [related]
- 10.6.2.136 `int ppl_new_BD_Shape_float_from_Octagonal_Shape_int16_t` (`ppl_BD_Shape_float_t`
 * `pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`) [related]
- 10.6.2.137 `int ppl_new_BD_Shape_float_from_Octagonal_Shape_int16_t_with_complexity`
 (`ppl_BD_Shape_float_t *pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`, `int`
complexity) [related]
- 10.6.2.138 `int ppl_new_BD_Shape_float_from_Octagonal_Shape_int32_t` (`ppl_BD_Shape_float_t`
 * `pph`, `ppl_const_Octagonal_Shape_int32_t_t ph`) [related]

- 10.6.2.139** `int ppl_new_BD_Shape_float_from_Octagonal_Shape_int32_t_with_complexity`
 (`ppl_BD_Shape_float_t * pph`, `ppl_const_Octagonal_Shape_int32_t_t ph`, `int complexity`) [**related**]
- 10.6.2.140** `int ppl_new_BD_Shape_float_from_Octagonal_Shape_int64_t` (`ppl_BD_Shape_float_t * pph`, `ppl_const_Octagonal_Shape_int64_t_t ph`) [**related**]
- 10.6.2.141** `int ppl_new_BD_Shape_float_from_Octagonal_Shape_int64_t_with_complexity`
 (`ppl_BD_Shape_float_t * pph`, `ppl_const_Octagonal_Shape_int64_t_t ph`, `int complexity`) [**related**]
- 10.6.2.142** `int ppl_new_BD_Shape_float_from_Octagonal_Shape_int8_t` (`ppl_BD_Shape_float_t * pph`, `ppl_const_Octagonal_Shape_int8_t_t ph`) [**related**]
- 10.6.2.143** `int ppl_new_BD_Shape_float_from_Octagonal_Shape_int8_t_with_complexity`
 (`ppl_BD_Shape_float_t * pph`, `ppl_const_Octagonal_Shape_int8_t_t ph`, `int complexity`) [**related**]
- 10.6.2.144** `int ppl_new_BD_Shape_float_from_Octagonal_Shape_long_double`
 (`ppl_BD_Shape_float_t * pph`, `ppl_const_Octagonal_Shape_long_double_t ph`) [**related**]
- 10.6.2.145** `int ppl_new_BD_Shape_float_from_Octagonal_Shape_long_double_with_complexity`
 (`ppl_BD_Shape_float_t * pph`, `ppl_const_Octagonal_Shape_long_double_t ph`, `int complexity`) [**related**]
- 10.6.2.146** `int ppl_new_BD_Shape_float_from_Octagonal_Shape_mpq_class`
 (`ppl_BD_Shape_float_t * pph`, `ppl_const_Octagonal_Shape_mpq_class_t ph`) [**related**]

- 10.6.2.147 `int ppl_new_BD_Shape_float_from_Octagonal_Shape_mpq_class_with_complexity`
 (`ppl_BD_Shape_float_t * pph`, `ppl_const_Octagonal_Shape_mpq_class_t ph`, `int complexity`) [`related`]
- 10.6.2.148 `int ppl_new_BD_Shape_float_from_Octagonal_Shape_mpz_class`
 (`ppl_BD_Shape_float_t * pph`, `ppl_const_Octagonal_Shape_mpz_class_t ph`)
 [`related`]
- 10.6.2.149 `int ppl_new_BD_Shape_float_from_Octagonal_Shape_mpz_class_with_complexity`
 (`ppl_BD_Shape_float_t * pph`, `ppl_const_Octagonal_Shape_mpz_class_t ph`, `int complexity`) [`related`]
- 10.6.2.150 `int ppl_new_BD_Shape_float_from_Rational_Box` (`ppl_BD_Shape_float_t * pph`,
`ppl_const_Rational_Box_t ph`) [`related`]
- 10.6.2.151 `int ppl_new_BD_Shape_float_from_Rational_Box_with_complexity`
 (`ppl_BD_Shape_float_t * pph`, `ppl_const_Rational_Box_t ph`, `int complexity`)
 [`related`]
- 10.6.2.152 `int ppl_new_BD_Shape_float_from_space_dimension` (`ppl_BD_Shape_float_t * pph`,
`ppl_dimension_type d`, `int empty`) [`related`]
- 10.6.2.153 `int ppl_new_BD_Shape_float_from_Uint16_Box` (`ppl_BD_Shape_float_t * pph`,
`ppl_const_Uint16_Box_t ph`) [`related`]
- 10.6.2.154 `int ppl_new_BD_Shape_float_from_Uint16_Box_with_complexity`
 (`ppl_BD_Shape_float_t * pph`, `ppl_const_Uint16_Box_t ph`, `int complexity`)
 [`related`]

10.6.2.155 `int ppl_new_BD_Shape_float_from_Uint32_Box (ppl_BD_Shape_float_t * pph,
ppl_const_Uint32_Box_t ph)` [**related**]

10.6.2.156 `int ppl_new_BD_Shape_float_from_Uint32_Box_with_complexity
(ppl_BD_Shape_float_t * pph, ppl_const_Uint32_Box_t ph, int complexity)`
[**related**]

10.6.2.157 `int ppl_new_BD_Shape_float_from_Uint64_Box (ppl_BD_Shape_float_t * pph,
ppl_const_Uint64_Box_t ph)` [**related**]

10.6.2.158 `int ppl_new_BD_Shape_float_from_Uint64_Box_with_complexity
(ppl_BD_Shape_float_t * pph, ppl_const_Uint64_Box_t ph, int complexity)`
[**related**]

10.6.2.159 `int ppl_new_BD_Shape_float_from_Uint8_Box (ppl_BD_Shape_float_t * pph,
ppl_const_Uint8_Box_t ph)` [**related**]

10.6.2.160 `int ppl_new_BD_Shape_float_from_Uint8_Box_with_complexity
(ppl_BD_Shape_float_t * pph, ppl_const_Uint8_Box_t ph, int complexity)`
[**related**]

10.6.2.161 `int ppl_new_BD_Shape_float_from_Z_Box (ppl_BD_Shape_float_t * pph,
ppl_const_Z_Box_t ph)` [**related**]

10.6.2.162 `int ppl_new_BD_Shape_float_from_Z_Box_with_complexity (ppl_BD_Shape_float_t *
pph, ppl_const_Z_Box_t ph, int complexity)` [**related**]

10.6.2.163 `int ppl_new_BD_Shape_float_recycle_Congruence_System (ppl_BD_Shape_float_t *
pph, ppl_Congruence_System_t cs)` [**related**]

- 10.6.2.164 `int ppl_new_BD_Shape_float_recycle_Constraint_System (ppl_BD_Shape_float_t *
pph, ppl_Constraint_System_t cs) [related]`
- 10.6.2.165 `int ppl_new_BD_Shape_float_recycle_Generator_System (ppl_BD_Shape_float_t *
pph, ppl_Generator_System_t cs) [related]`
- 10.6.2.166 `int ppl_one_affine_ranking_function_MS_BD_Shape_float
(ppl_const_BD_Shape_float_t pset, ppl_Generator_t point) [related]`
- 10.6.2.167 `int ppl_one_affine_ranking_function_MS_BD_Shape_float_2 (ppl_const_BD_Shape_
float_t pset_before, ppl_const_BD_Shape_float_t pset_after, ppl_Generator_t point)
[related]`
- 10.6.2.168 `int ppl_one_affine_ranking_function_PR_BD_Shape_float
(ppl_const_BD_Shape_float_t pset, ppl_Generator_t point) [related]`
- 10.6.2.169 `int ppl_one_affine_ranking_function_PR_BD_Shape_float_2 (ppl_const_BD_Shape_
float_t pset_before, ppl_const_BD_Shape_float_t pset_after, ppl_Generator_t point)
[related]`
- 10.6.2.170 `int ppl_termination_test_MS_BD_Shape_float (ppl_const_BD_Shape_float_t pset)
[related]`
- 10.6.2.171 `int ppl_termination_test_MS_BD_Shape_float_2 (ppl_const_BD_Shape_float_t
pset_before, ppl_const_BD_Shape_float_t pset_after) [related]`
- 10.6.2.172 `int ppl_termination_test_PR_BD_Shape_float (ppl_const_BD_Shape_float_t pset)
[related]`

10.6.2.173 `int ppl_termination_test_PR_BD_Shape_float_2 (ppl_const_BD_Shape_float_t pset_before, ppl_const_BD_Shape_float_t pset_after)` **[related]**

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.7 ppl_BD_Shape_int16_t_tag Interface Reference

Types and functions for [ppl_BD_Shape_int16_t_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_BD_Shape_int16_t (ppl_const_BD_Shape_int16_t_t ph)`
- `int ppl_new_BD_Shape_int16_t_from_space_dimension (ppl_BD_Shape_int16_t_t *pph, ppl_dimension_type d, int empty)`
- `int ppl_new_BD_Shape_int16_t_from_Int8_Box (ppl_BD_Shape_int16_t_t *pph, ppl_const_Int8_Box_t ph)`
- `int ppl_new_BD_Shape_int16_t_from_Int16_Box (ppl_BD_Shape_int16_t_t *pph, ppl_const_Int16_Box_t ph)`
- `int ppl_new_BD_Shape_int16_t_from_Int32_Box (ppl_BD_Shape_int16_t_t *pph, ppl_const_Int32_Box_t ph)`
- `int ppl_new_BD_Shape_int16_t_from_Int64_Box (ppl_BD_Shape_int16_t_t *pph, ppl_const_Int64_Box_t ph)`
- `int ppl_new_BD_Shape_int16_t_from_UInt8_Box (ppl_BD_Shape_int16_t_t *pph, ppl_const_UInt8_Box_t ph)`
- `int ppl_new_BD_Shape_int16_t_from_UInt16_Box (ppl_BD_Shape_int16_t_t *pph, ppl_const_UInt16_Box_t ph)`
- `int ppl_new_BD_Shape_int16_t_from_UInt32_Box (ppl_BD_Shape_int16_t_t *pph, ppl_const_UInt32_Box_t ph)`
- `int ppl_new_BD_Shape_int16_t_from_UInt64_Box (ppl_BD_Shape_int16_t_t *pph, ppl_const_UInt64_Box_t ph)`
- `int ppl_new_BD_Shape_int16_t_from_Z_Box (ppl_BD_Shape_int16_t_t *pph, ppl_const_Z_Box_t ph)`
- `int ppl_new_BD_Shape_int16_t_from_Rational_Box (ppl_BD_Shape_int16_t_t *pph, ppl_const_Rational_Box_t ph)`
- `int ppl_new_BD_Shape_int16_t_from_BD_Shape_int8_t (ppl_BD_Shape_int16_t_t *pph, ppl_const_BD_Shape_int8_t_t ph)`
- `int ppl_new_BD_Shape_int16_t_from_BD_Shape_int16_t (ppl_BD_Shape_int16_t_t *pph, ppl_const_BD_Shape_int16_t_t ph)`
- `int ppl_new_BD_Shape_int16_t_from_BD_Shape_int32_t (ppl_BD_Shape_int16_t_t *pph, ppl_const_BD_Shape_int32_t_t ph)`
- `int ppl_new_BD_Shape_int16_t_from_BD_Shape_int64_t (ppl_BD_Shape_int16_t_t *pph, ppl_const_BD_Shape_int64_t_t ph)`
- `int ppl_new_BD_Shape_int16_t_from_BD_Shape_mpz_class (ppl_BD_Shape_int16_t_t *pph, ppl_const_BD_Shape_mpz_class_t ph)`

- int [ppl_new_BD_Shape_int16_t_from_BD_Shape_mpq_class](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_BD_Shape_mpq_class_t ph)
- int [ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_int8_t](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph)
- int [ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_int16_t](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph)
- int [ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_int32_t](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph)
- int [ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_int64_t](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph)
- int [ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_mpz_class](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph)
- int [ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_mpq_class](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph)
- int [ppl_new_BD_Shape_int16_t_from_C_Polyhedron](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_C_Polyhedron_t ph)
- int [ppl_new_BD_Shape_int16_t_from_NNC_Polyhedron](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_NNC_Polyhedron_t ph)
- int [ppl_new_BD_Shape_int16_t_from_Grid](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Grid_t ph)
- int [ppl_new_BD_Shape_int16_t_from_Float_Box](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Float_Box_t ph)
- int [ppl_new_BD_Shape_int16_t_from_BD_Shape_float](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_BD_Shape_float_t ph)
- int [ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_float](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_float_t ph)
- int [ppl_new_BD_Shape_int16_t_from_Double_Box](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Double_Box_t ph)
- int [ppl_new_BD_Shape_int16_t_from_BD_Shape_double](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_BD_Shape_double_t ph)
- int [ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_double](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_double_t ph)
- int [ppl_new_BD_Shape_int16_t_from_Long_Double_Box](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Long_Double_Box_t ph)
- int [ppl_new_BD_Shape_int16_t_from_BD_Shape_long_double](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_BD_Shape_long_double_t ph)
- int [ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_long_double](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_long_double_t ph)
- int [ppl_new_BD_Shape_int16_t_from_Int8_Box_with_complexity](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Int8_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_int16_t_from_Int16_Box_with_complexity](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Int16_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_int16_t_from_Int32_Box_with_complexity](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Int32_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_int16_t_from_Int64_Box_with_complexity](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Int64_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_int16_t_from_Uint8_Box_with_complexity](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Uint8_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_int16_t_from_Uint16_Box_with_complexity](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Uint16_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_int16_t_from_Uint32_Box_with_complexity](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Uint32_Box_t ph, int complexity)

- int [ppl_new_BD_Shape_int16_t_from_Uint64_Box_with_complexity](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Uint64_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_int16_t_from_Z_Box_with_complexity](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Z_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_int16_t_from_Rational_Box_with_complexity](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Rational_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_int16_t_from_BD_Shape_int8_t_with_complexity](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)
- int [ppl_new_BD_Shape_int16_t_from_BD_Shape_int16_t_with_complexity](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)
- int [ppl_new_BD_Shape_int16_t_from_BD_Shape_int32_t_with_complexity](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)
- int [ppl_new_BD_Shape_int16_t_from_BD_Shape_int64_t_with_complexity](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)
- int [ppl_new_BD_Shape_int16_t_from_BD_Shape_mpz_class_with_complexity](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_BD_Shape_int16_t_from_BD_Shape_mpq_class_with_complexity](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_int8_t_with_complexity](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)
- int [ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_int16_t_with_complexity](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)
- int [ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_int32_t_with_complexity](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)
- int [ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_int64_t_with_complexity](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)
- int [ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_mpz_class_with_complexity](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_mpq_class_with_complexity](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_BD_Shape_int16_t_from_C_Polyhedron_with_complexity](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_BD_Shape_int16_t_from_NNC_Polyhedron_with_complexity](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_BD_Shape_int16_t_from_Grid_with_complexity](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Grid_t ph, int complexity)
- int [ppl_new_BD_Shape_int16_t_from_Float_Box_with_complexity](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Float_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_int16_t_from_BD_Shape_float_with_complexity](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_BD_Shape_float_t ph, int complexity)
- int [ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_float_with_complexity](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)
- int [ppl_new_BD_Shape_int16_t_from_Double_Box_with_complexity](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Double_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_int16_t_from_BD_Shape_double_with_complexity](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_BD_Shape_double_t ph, int complexity)
- int [ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_double_with_complexity](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)
- int [ppl_new_BD_Shape_int16_t_from_Long_Double_Box_with_complexity](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_int16_t_from_BD_Shape_long_double_with_complexity](#) (ppl_BD_Shape_int16_t_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity)

- `int ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_long_double_with_complexity` (`ppl_BD_Shape_int16_t_t *pph`, `ppl_const_Octagonal_Shape_long_double_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_int16_t_from_Constraint_System` (`ppl_BD_Shape_int16_t_t *pph`, `ppl_const_Constraint_System_t cs`)
- `int ppl_new_BD_Shape_int16_t_from_Congruence_System` (`ppl_BD_Shape_int16_t_t *pph`, `ppl_const_Congruence_System_t cs`)
- `int ppl_new_BD_Shape_int16_t_from_Generator_System` (`ppl_BD_Shape_int16_t_t *pph`, `ppl_const_Generator_System_t cs`)
- `int ppl_BD_Shape_int16_t_space_dimension` (`ppl_const_BD_Shape_int16_t_t ph`, `ppl_dimension_type *m`)
- `int ppl_BD_Shape_int16_t_affine_dimension` (`ppl_const_BD_Shape_int16_t_t ph`, `ppl_dimension_type *m`)
- `int ppl_BD_Shape_int16_t_relation_with_Constraint` (`ppl_const_BD_Shape_int16_t_t ph`, `ppl_const_Constraint_t c`)
- `int ppl_BD_Shape_int16_t_relation_with_Generator` (`ppl_const_BD_Shape_int16_t_t ph`, `ppl_const_Generator_t c`)
- `int ppl_BD_Shape_int16_t_relation_with_Congruence` (`ppl_const_BD_Shape_int16_t_t ph`, `ppl_const_Congruence_t c`)
- `int ppl_BD_Shape_int16_t_get_constraints` (`ppl_const_BD_Shape_int16_t_t ph`, `ppl_const_Constraint_System_t *pcs`)
- `int ppl_BD_Shape_int16_t_get_congruences` (`ppl_const_BD_Shape_int16_t_t ph`, `ppl_const_Congruence_System_t *pcs`)
- `int ppl_BD_Shape_int16_t_get_minimized_constraints` (`ppl_const_BD_Shape_int16_t_t ph`, `ppl_const_Constraint_System_t *pcs`)
- `int ppl_BD_Shape_int16_t_get_minimized_congruences` (`ppl_const_BD_Shape_int16_t_t ph`, `ppl_const_Congruence_System_t *pcs`)
- `int ppl_BD_Shape_int16_t_is_empty` (`ppl_const_BD_Shape_int16_t_t ph`)
- `int ppl_BD_Shape_int16_t_is_universe` (`ppl_const_BD_Shape_int16_t_t ph`)
- `int ppl_BD_Shape_int16_t_is_bounded` (`ppl_const_BD_Shape_int16_t_t ph`)
- `int ppl_BD_Shape_int16_t_contains_integer_point` (`ppl_const_BD_Shape_int16_t_t ph`)
- `int ppl_BD_Shape_int16_t_is_topologically_closed` (`ppl_const_BD_Shape_int16_t_t ph`)
- `int ppl_BD_Shape_int16_t_is_discrete` (`ppl_const_BD_Shape_int16_t_t ph`)
- `int ppl_BD_Shape_int16_t_topological_closure_assign` (`ppl_BD_Shape_int16_t_t ph`)
- `int ppl_BD_Shape_int16_t_bounds_from_above` (`ppl_const_BD_Shape_int16_t_t ph`, `ppl_const_Linear_Expression_t le`)
- `int ppl_BD_Shape_int16_t_bounds_from_below` (`ppl_const_BD_Shape_int16_t_t ph`, `ppl_const_Linear_Expression_t le`)
- `int ppl_BD_Shape_int16_t_maximize` (`ppl_const_BD_Shape_int16_t_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int *poptimum`)
- `int ppl_BD_Shape_int16_t_minimize` (`ppl_const_BD_Shape_int16_t_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int *poptimum`)
- `int ppl_BD_Shape_int16_t_maximize_with_point` (`ppl_const_BD_Shape_int16_t_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int *poptimum`, `ppl_Generator_t point`)
- `int ppl_BD_Shape_int16_t_minimize_with_point` (`ppl_const_BD_Shape_int16_t_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int *poptimum`, `ppl_Generator_t point`)
- `int ppl_BD_Shape_int16_t_frequency` (`ppl_const_BD_Shape_int16_t_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_fn`, `ppl_Coefficient_t ext_fd`, `ppl_Coefficient_t ext_vn`, `ppl_Coefficient_t ext_vd`)
- `int ppl_BD_Shape_int16_t_contains_BD_Shape_int16_t` (`ppl_const_BD_Shape_int16_t_t x`, `ppl_const_BD_Shape_int16_t_t y`)

- int [ppl_BD_Shape_int16_t_strictly_contains_BD_Shape_int16_t](#) (ppl_const_BD_Shape_int16_t_t x, ppl_const_BD_Shape_int16_t_t y)
- int [ppl_BD_Shape_int16_t_is_disjoint_from_BD_Shape_int16_t](#) (ppl_const_BD_Shape_int16_t_t x, ppl_const_BD_Shape_int16_t_t y)
- int [ppl_BD_Shape_int16_t_equals_BD_Shape_int16_t](#) (ppl_const_BD_Shape_int16_t_t x, ppl_const_BD_Shape_int16_t_t y)
- int [ppl_BD_Shape_int16_t_OK](#) (ppl_const_BD_Shape_int16_t_t ph)
- int [ppl_BD_Shape_int16_t_add_constraint](#) (ppl_BD_Shape_int16_t_t ph, ppl_const_Constraint_t c)
- int [ppl_BD_Shape_int16_t_add_congruence](#) (ppl_BD_Shape_int16_t_t ph, ppl_const_Congruence_t c)
- int [ppl_BD_Shape_int16_t_add_constraints](#) (ppl_BD_Shape_int16_t_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_BD_Shape_int16_t_add_congruences](#) (ppl_BD_Shape_int16_t_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_BD_Shape_int16_t_refine_with_constraint](#) (ppl_BD_Shape_int16_t_t ph, ppl_const_Constraint_t c)
- int [ppl_BD_Shape_int16_t_refine_with_congruence](#) (ppl_BD_Shape_int16_t_t ph, ppl_const_Congruence_t c)
- int [ppl_BD_Shape_int16_t_refine_with_constraints](#) (ppl_BD_Shape_int16_t_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_BD_Shape_int16_t_refine_with_congruences](#) (ppl_BD_Shape_int16_t_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_BD_Shape_int16_t_intersection_assign](#) (ppl_BD_Shape_int16_t_t x, ppl_const_BD_Shape_int16_t_t y)
- int [ppl_BD_Shape_int16_t_upper_bound_assign](#) (ppl_BD_Shape_int16_t_t x, ppl_const_BD_Shape_int16_t_t y)
- int [ppl_BD_Shape_int16_t_difference_assign](#) (ppl_BD_Shape_int16_t_t x, ppl_const_BD_Shape_int16_t_t y)
- int [ppl_BD_Shape_int16_t_concatenate_assign](#) (ppl_BD_Shape_int16_t_t x, ppl_const_BD_Shape_int16_t_t y)
- int [ppl_BD_Shape_int16_t_time_elapse_assign](#) (ppl_BD_Shape_int16_t_t x, ppl_const_BD_Shape_int16_t_t y)
- int [ppl_BD_Shape_int16_t_upper_bound_assign_if_exact](#) (ppl_BD_Shape_int16_t_t x, ppl_const_BD_Shape_int16_t_t y)
- int [ppl_BD_Shape_int16_t_simplify_using_context_assign](#) (ppl_BD_Shape_int16_t_t x, ppl_const_BD_Shape_int16_t_t y)
- int [ppl_BD_Shape_int16_t_constrains](#) (ppl_BD_Shape_int16_t_t ph, [ppl_dimension_type](#) var)
- int [ppl_BD_Shape_int16_t_unconstrain_space_dimension](#) (ppl_BD_Shape_int16_t_t ph, [ppl_dimension_type](#) var)
- int [ppl_BD_Shape_int16_t_unconstrain_space_dimensions](#) (ppl_BD_Shape_int16_t_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_BD_Shape_int16_t_affine_image](#) (ppl_BD_Shape_int16_t_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_BD_Shape_int16_t_affine_preimage](#) (ppl_BD_Shape_int16_t_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_BD_Shape_int16_t_bounded_affine_image](#) (ppl_BD_Shape_int16_t_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_BD_Shape_int16_t_bounded_affine_preimage](#) (ppl_BD_Shape_int16_t_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)

- `int ppl_BD_Shape_int16_t_generalized_affine_image` (`ppl_BD_Shape_int16_t_t` ph, `ppl_dimension_type` var, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- `int ppl_BD_Shape_int16_t_generalized_affine_preimage` (`ppl_BD_Shape_int16_t_t` ph, `ppl_dimension_type` var, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- `int ppl_BD_Shape_int16_t_generalized_affine_image_lhs_rhs` (`ppl_BD_Shape_int16_t_t` ph, `ppl_const_Linear_Expression_t` lhs, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` rhs)
- `int ppl_BD_Shape_int16_t_generalized_affine_preimage_lhs_rhs` (`ppl_BD_Shape_int16_t_t` ph, `ppl_const_Linear_Expression_t` lhs, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` rhs)
- `int ppl_BD_Shape_int16_t_add_space_dimensions_and_embed` (`ppl_BD_Shape_int16_t_t` ph, `ppl_dimension_type` d)
- `int ppl_BD_Shape_int16_t_add_space_dimensions_and_project` (`ppl_BD_Shape_int16_t_t` ph, `ppl_dimension_type` d)
- `int ppl_BD_Shape_int16_t_remove_space_dimensions` (`ppl_BD_Shape_int16_t_t` ph, `ppl_dimension_type` ds[], `size_t` n)
- `int ppl_BD_Shape_int16_t_remove_higher_space_dimensions` (`ppl_BD_Shape_int16_t_t` ph, `ppl_dimension_type` d)
- `int ppl_BD_Shape_int16_t_expand_space_dimension` (`ppl_BD_Shape_int16_t_t` ph, `ppl_dimension_type` d, `ppl_dimension_type` m)
- `int ppl_BD_Shape_int16_t_fold_space_dimensions` (`ppl_BD_Shape_int16_t_t` ph, `ppl_dimension_type` ds[], `size_t` n, `ppl_dimension_type` d)
- `int ppl_BD_Shape_int16_t_map_space_dimensions` (`ppl_BD_Shape_int16_t_t` ph, `ppl_dimension_type` maps[], `size_t` n)
- `int ppl_BD_Shape_int16_t_drop_some_non_integer_points` (`ppl_BD_Shape_int16_t_t` ph, `int` complexity)
- `int ppl_BD_Shape_int16_t_drop_some_non_integer_points_2` (`ppl_BD_Shape_int16_t_t` ph, `ppl_dimension_type` ds[], `size_t` n, `int` complexity)
- `int ppl_BD_Shape_int16_t_external_memory_in_bytes` (`ppl_const_BD_Shape_int16_t_t` ps, `size_t` *sz)
- `int ppl_BD_Shape_int16_t_total_memory_in_bytes` (`ppl_const_BD_Shape_int16_t_t` ps, `size_t` *sz)
- `int ppl_BD_Shape_int16_t_BHMZ05_widening_assign_with_tokens` (`ppl_BD_Shape_int16_t_t` x, `ppl_const_BD_Shape_int16_t_t` y, `unsigned` *tp)
- `int ppl_BD_Shape_int16_t_H79_widening_assign_with_tokens` (`ppl_BD_Shape_int16_t_t` x, `ppl_const_BD_Shape_int16_t_t` y, `unsigned` *tp)
- `int ppl_BD_Shape_int16_t_BHMZ05_widening_assign` (`ppl_BD_Shape_int16_t_t` x, `ppl_const_BD_Shape_int16_t_t` y)
- `int ppl_BD_Shape_int16_t_H79_widening_assign` (`ppl_BD_Shape_int16_t_t` x, `ppl_const_BD_Shape_int16_t_t` y)
- `int ppl_BD_Shape_int16_t_widening_assign_with_tokens` (`ppl_BD_Shape_int16_t_t` x, `ppl_const_BD_Shape_int16_t_t` y, `unsigned` *tp)
- `int ppl_BD_Shape_int16_t_widening_assign` (`ppl_BD_Shape_int16_t_t` x, `ppl_const_BD_Shape_int16_t_t` y)
- `int ppl_BD_Shape_int16_t_limited_BHMZ05_extrapolation_assign_with_tokens` (`ppl_BD_Shape_int16_t_t` x, `ppl_const_BD_Shape_int16_t_t` y, `ppl_const_Constraint_System_t` cs, `unsigned` *tp)
- `int ppl_BD_Shape_int16_t_limited_H79_extrapolation_assign_with_tokens` (`ppl_BD_Shape_int16_t_t` x, `ppl_const_BD_Shape_int16_t_t` y, `ppl_const_Constraint_System_t` cs, `unsigned` *tp)

- `int ppl_BD_Shape_int16_t_limited_CC76_extrapolation_assign_with_tokens` (`ppl_BD_Shape_int16_t_t x`, `ppl_const_BD_Shape_int16_t_t y`, `ppl_const_Constraint_System_t cs`, unsigned `*tp`)
- `int ppl_BD_Shape_int16_t_limited_BHMZ05_extrapolation_assign` (`ppl_BD_Shape_int16_t_t x`, `ppl_const_BD_Shape_int16_t_t y`, `ppl_const_Constraint_System_t cs`)
- `int ppl_BD_Shape_int16_t_limited_H79_extrapolation_assign` (`ppl_BD_Shape_int16_t_t x`, `ppl_const_BD_Shape_int16_t_t y`, `ppl_const_Constraint_System_t cs`)
- `int ppl_BD_Shape_int16_t_limited_CC76_extrapolation_assign` (`ppl_BD_Shape_int16_t_t x`, `ppl_const_BD_Shape_int16_t_t y`, `ppl_const_Constraint_System_t cs`)
- `int ppl_BD_Shape_int16_t_CC76_extrapolation_assign_with_tokens` (`ppl_BD_Shape_int16_t_t x`, `ppl_const_BD_Shape_int16_t_t y`, unsigned `*tp`)
- `int ppl_BD_Shape_int16_t_CC76_extrapolation_assign` (`ppl_BD_Shape_int16_t_t x`, `ppl_const_BD_Shape_int16_t_t y`)
- `int ppl_BD_Shape_int16_t_CC76_narrowing_assign` (`ppl_BD_Shape_int16_t_t x`, `ppl_const_BD_Shape_int16_t_t y`)
- `int ppl_BD_Shape_int16_t_linear_partition` (`ppl_const_BD_Shape_int16_t_t x`, `ppl_const_BD_Shape_int16_t_t y`, `ppl_BD_Shape_int16_t_t *p_inters`, `ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest`)
- `int ppl_BD_Shape_int16_t_wrap_assign` (`ppl_BD_Shape_int16_t_t ph`, `ppl_dimension_type ds[]`, `size_t n`, `enum ppl_enum_Bounded_Integer_Type_Width w`, `enum ppl_enum_Bounded_Integer_Type_Representation r`, `enum ppl_enum_Bounded_Integer_Type_Overflow o`, `const ppl_const_Constraint_System_t *pcs`, unsigned `complexity_threshold`, `int wrap_individually`)
- `int ppl_new_BD_Shape_int16_t_recycle_Constraint_System` (`ppl_BD_Shape_int16_t_t *pph`, `ppl_Constraint_System_t cs`)
- `int ppl_new_BD_Shape_int16_t_recycle_Congruence_System` (`ppl_BD_Shape_int16_t_t *pph`, `ppl_Congruence_System_t cs`)
- `int ppl_new_BD_Shape_int16_t_recycle_Generator_System` (`ppl_BD_Shape_int16_t_t *pph`, `ppl_Generator_System_t cs`)
- `int ppl_assign_BD_Shape_int16_t_from_BD_Shape_int16_t` (`ppl_BD_Shape_int16_t_t dst`, `ppl_const_BD_Shape_int16_t_t src`)
- `int ppl_BD_Shape_int16_t_add_recycled_constraints` (`ppl_BD_Shape_int16_t_t ph`, `ppl_Constraint_System_t cs`)
- `int ppl_BD_Shape_int16_t_add_recycled_congruences` (`ppl_BD_Shape_int16_t_t ph`, `ppl_Congruence_System_t cs`)
- `int ppl_termination_test_MS_BD_Shape_int16_t` (`ppl_const_BD_Shape_int16_t_t pset`)
- `int ppl_termination_test_PR_BD_Shape_int16_t` (`ppl_const_BD_Shape_int16_t_t pset`)
- `int ppl_one_affine_ranking_function_MS_BD_Shape_int16_t` (`ppl_const_BD_Shape_int16_t_t pset`, `ppl_Generator_t point`)
- `int ppl_one_affine_ranking_function_PR_BD_Shape_int16_t` (`ppl_const_BD_Shape_int16_t_t pset`, `ppl_Generator_t point`)
- `int ppl_all_affine_ranking_functions_MS_BD_Shape_int16_t` (`ppl_const_BD_Shape_int16_t_t pset`, `ppl_Polyhedron_t ph`)
- `int ppl_all_affine_ranking_functions_PR_BD_Shape_int16_t` (`ppl_const_BD_Shape_int16_t_t pset`, `ppl_Polyhedron_t ph`)
- `int ppl_termination_test_MS_BD_Shape_int16_t_2` (`ppl_const_BD_Shape_int16_t_t pset_before`, `ppl_const_BD_Shape_int16_t_t pset_after`)
- `int ppl_termination_test_PR_BD_Shape_int16_t_2` (`ppl_const_BD_Shape_int16_t_t pset_before`, `ppl_const_BD_Shape_int16_t_t pset_after`)
- `int ppl_one_affine_ranking_function_MS_BD_Shape_int16_t_2` (`ppl_const_BD_Shape_int16_t_t pset_before`, `ppl_const_BD_Shape_int16_t_t pset_after`, `ppl_Generator_t point`)
- `int ppl_one_affine_ranking_function_PR_BD_Shape_int16_t_2` (`ppl_const_BD_Shape_int16_t_t pset_before`, `ppl_const_BD_Shape_int16_t_t pset_after`, `ppl_Generator_t point`)

- int [ppl_all_affine_ranking_functions_MS_BD_Shape_int16_t_2](#) (ppl_const_BD_Shape_int16_t_t pset_before, ppl_const_BD_Shape_int16_t_t pset_after, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_BD_Shape_int16_t_2](#) (ppl_const_BD_Shape_int16_t_t pset_before, ppl_const_BD_Shape_int16_t_t pset_after, ppl_Polyhedron_t ph)

10.7.1 Detailed Description

Types and functions for [ppl_BD_Shape_int16_t_tag](#).

10.7.2 Friends And Related Function Documentation

- 10.7.2.1** int [ppl_all_affine_ranking_functions_MS_BD_Shape_int16_t](#) (ppl_const_BD_Shape_int16_t_t pset, ppl_Polyhedron_t ph) [**related**]
- 10.7.2.2** int [ppl_all_affine_ranking_functions_MS_BD_Shape_int16_t_2](#) (ppl_const_BD_Shape_int16_t_t pset_before, ppl_const_BD_Shape_int16_t_t pset_after, ppl_Polyhedron_t ph) [**related**]
- 10.7.2.3** int [ppl_all_affine_ranking_functions_PR_BD_Shape_int16_t](#) (ppl_const_BD_Shape_int16_t_t pset, ppl_Polyhedron_t ph) [**related**]
- 10.7.2.4** int [ppl_all_affine_ranking_functions_PR_BD_Shape_int16_t_2](#) (ppl_const_BD_Shape_int16_t_t pset_before, ppl_const_BD_Shape_int16_t_t pset_after, ppl_Polyhedron_t ph) [**related**]
- 10.7.2.5** int [ppl_assign_BD_Shape_int16_t_from_BD_Shape_int16_t](#) (ppl_BD_Shape_int16_t_t dst, ppl_const_BD_Shape_int16_t_t src) [**related**]
- 10.7.2.6** int [ppl_BD_Shape_int16_t_add_congruence](#) (ppl_BD_Shape_int16_t_t ph, ppl_const_Congruence_t c) [**related**]
- 10.7.2.7** int [ppl_BD_Shape_int16_t_add_congruences](#) (ppl_BD_Shape_int16_t_t ph, ppl_const_Congruence_System_t cs) [**related**]

- 10.7.2.8 `int ppl_BD_Shape_int16_t_add_constraint (ppl_BD_Shape_int16_t_t ph,
ppl_const_Constraint_t c)` [**related**]
- 10.7.2.9 `int ppl_BD_Shape_int16_t_add_constraints (ppl_BD_Shape_int16_t_t ph,
ppl_const_Constraint_System_t cs)` [**related**]
- 10.7.2.10 `int ppl_BD_Shape_int16_t_add_recycled_congruences (ppl_BD_Shape_int16_t_t ph,
ppl_Congruence_System_t cs)` [**related**]
- 10.7.2.11 `int ppl_BD_Shape_int16_t_add_recycled_constraints (ppl_BD_Shape_int16_t_t ph,
ppl_Constraint_System_t cs)` [**related**]
- 10.7.2.12 `int ppl_BD_Shape_int16_t_add_space_dimensions_and_embed
(ppl_BD_Shape_int16_t_t ph, ppl_dimension_type d)` [**related**]
- 10.7.2.13 `int ppl_BD_Shape_int16_t_add_space_dimensions_and_project
(ppl_BD_Shape_int16_t_t ph, ppl_dimension_type d)` [**related**]
- 10.7.2.14 `int ppl_BD_Shape_int16_t_affine_dimension (ppl_const_BD_Shape_int16_t_t ph,
ppl_dimension_type * m)` [**related**]
- 10.7.2.15 `int ppl_BD_Shape_int16_t_affine_image (ppl_BD_Shape_int16_t_t ph,
ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)`
[**related**]
- 10.7.2.16 `int ppl_BD_Shape_int16_t_affine_preimage (ppl_BD_Shape_int16_t_t ph,
ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)`
[**related**]

- 10.7.2.17 `int ppl_BD_Shape_int16_t_BHMZ05_widening_assign (ppl_BD_Shape_int16_t_t x, ppl_const_BD_Shape_int16_t_t y) [related]`
- 10.7.2.18 `int ppl_BD_Shape_int16_t_BHMZ05_widening_assign_with_tokens (ppl_BD_Shape_int16_t_t x, ppl_const_BD_Shape_int16_t_t y, unsigned * tp) [related]`
- 10.7.2.19 `int ppl_BD_Shape_int16_t_bounded_affine_image (ppl_BD_Shape_int16_t_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d) [related]`
- 10.7.2.20 `int ppl_BD_Shape_int16_t_bounded_affine_preimage (ppl_BD_Shape_int16_t_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d) [related]`
- 10.7.2.21 `int ppl_BD_Shape_int16_t_bounds_from_above (ppl_const_BD_Shape_int16_t_t ph, ppl_const_Linear_Expression_t le) [related]`
- 10.7.2.22 `int ppl_BD_Shape_int16_t_bounds_from_below (ppl_const_BD_Shape_int16_t_t ph, ppl_const_Linear_Expression_t le) [related]`
- 10.7.2.23 `int ppl_BD_Shape_int16_t_CC76_extrapolation_assign (ppl_BD_Shape_int16_t_t x, ppl_const_BD_Shape_int16_t_t y) [related]`
- 10.7.2.24 `int ppl_BD_Shape_int16_t_CC76_extrapolation_assign_with_tokens (ppl_BD_Shape_int16_t_t x, ppl_const_BD_Shape_int16_t_t y, unsigned * tp) [related]`
- 10.7.2.25 `int ppl_BD_Shape_int16_t_CC76_narrowing_assign (ppl_BD_Shape_int16_t_t x, ppl_const_BD_Shape_int16_t_t y) [related]`

- 10.7.2.26 `int ppl_BD_Shape_int16_t_concatenate_assign (ppl_BD_Shape_int16_t_t x, ppl_const_BD_Shape_int16_t_t y)` [**related**]
- 10.7.2.27 `int ppl_BD_Shape_int16_t_constrains (ppl_BD_Shape_int16_t_t ph, ppl_dimension_type var)` [**related**]
- 10.7.2.28 `int ppl_BD_Shape_int16_t_contains_BD_Shape_int16_t (ppl_const_BD_Shape_int16_t_t x, ppl_const_BD_Shape_int16_t_t y)` [**related**]
- 10.7.2.29 `int ppl_BD_Shape_int16_t_contains_integer_point (ppl_const_BD_Shape_int16_t_t ph)` [**related**]
- 10.7.2.30 `int ppl_BD_Shape_int16_t_difference_assign (ppl_BD_Shape_int16_t_t x, ppl_const_BD_Shape_int16_t_t y)` [**related**]
- 10.7.2.31 `int ppl_BD_Shape_int16_t_drop_some_non_integer_points (ppl_BD_Shape_int16_t_t ph, int complexity)` [**related**]
- 10.7.2.32 `int ppl_BD_Shape_int16_t_drop_some_non_integer_points_2 (ppl_BD_Shape_int16_t_t ph, ppl_dimension_type ds[], size_t n, int complexity)` [**related**]
- 10.7.2.33 `int ppl_BD_Shape_int16_t_equals_BD_Shape_int16_t (ppl_const_BD_Shape_int16_t_t x, ppl_const_BD_Shape_int16_t_t y)` [**related**]
- 10.7.2.34 `int ppl_BD_Shape_int16_t_expand_space_dimension (ppl_BD_Shape_int16_t_t ph, ppl_dimension_type d, ppl_dimension_type m)` [**related**]

- 10.7.2.35 `int ppl_BD_Shape_int16_t_external_memory_in_bytes (ppl_const_BD_Shape_int16_t_t ps, size_t * sz)` [**related**]
- 10.7.2.36 `int ppl_BD_Shape_int16_t_fold_space_dimensions (ppl_BD_Shape_int16_t_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [**related**]
- 10.7.2.37 `int ppl_BD_Shape_int16_t_frequency (ppl_const_BD_Shape_int16_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)` [**related**]
- 10.7.2.38 `int ppl_BD_Shape_int16_t_generalized_affine_image (ppl_BD_Shape_int16_t_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.7.2.39 `int ppl_BD_Shape_int16_t_generalized_affine_image_lhs_rhs (ppl_BD_Shape_int16_t_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` [**related**]
- 10.7.2.40 `int ppl_BD_Shape_int16_t_generalized_affine_preimage (ppl_BD_Shape_int16_t_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.7.2.41 `int ppl_BD_Shape_int16_t_generalized_affine_preimage_lhs_rhs (ppl_BD_Shape_int16_t_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` [**related**]
- 10.7.2.42 `int ppl_BD_Shape_int16_t_get_congruences (ppl_const_BD_Shape_int16_t_t ph, ppl_const_Congruence_System_t * pcs)` [**related**]

- 10.7.2.43 `int ppl_BD_Shape_int16_t_get_constraints (ppl_const_BD_Shape_int16_t_t ph,
ppl_const_Constraint_System_t * pcs)` [**related**]
- 10.7.2.44 `int ppl_BD_Shape_int16_t_get_minimized_congruences (ppl_const_
BD_Shape_int16_t_t ph, ppl_const_Congruence_System_t * pcs)`
[**related**]
- 10.7.2.45 `int ppl_BD_Shape_int16_t_get_minimized_constraints (ppl_const_BD_Shape_int16_t_t
ph, ppl_const_Constraint_System_t * pcs)` [**related**]
- 10.7.2.46 `int ppl_BD_Shape_int16_t_H79_widening_assign (ppl_BD_Shape_int16_t_t x,
ppl_const_BD_Shape_int16_t_t y)` [**related**]
- 10.7.2.47 `int ppl_BD_Shape_int16_t_H79_widening_assign_with_tokens
(ppl_BD_Shape_int16_t_t x, ppl_const_BD_Shape_int16_t_t y, unsigned * tp)`
[**related**]
- 10.7.2.48 `int ppl_BD_Shape_int16_t_intersection_assign (ppl_BD_Shape_int16_t_t x,
ppl_const_BD_Shape_int16_t_t y)` [**related**]
- 10.7.2.49 `int ppl_BD_Shape_int16_t_is_bounded (ppl_const_BD_Shape_int16_t_t ph)`
[**related**]
- 10.7.2.50 `int ppl_BD_Shape_int16_t_is_discrete (ppl_const_BD_Shape_int16_t_t ph)`
[**related**]
- 10.7.2.51 `int ppl_BD_Shape_int16_t_is_disjoint_from_BD_Shape_int16_t
(ppl_const_BD_Shape_int16_t_t x, ppl_const_BD_Shape_int16_t_t y)` [**related**]

10.7.2.52 `int ppl_BD_Shape_int16_t_is_empty (ppl_const_BD_Shape_int16_t_t ph)` `[related]`

10.7.2.53 `int ppl_BD_Shape_int16_t_is_topologically_closed (ppl_const_BD_Shape_int16_t_t ph)`
`[related]`

10.7.2.54 `int ppl_BD_Shape_int16_t_is_universe (ppl_const_BD_Shape_int16_t_t ph)`
`[related]`

10.7.2.55 `int ppl_BD_Shape_int16_t_limited_BHMZ05_extrapolation_assign (ppl_BD_Shape_int16_t_t x, ppl_const_BD_Shape_int16_t_t y, ppl_const_Constraint_System_t cs)`
`[related]`

10.7.2.56 `int ppl_BD_Shape_int16_t_limited_BHMZ05_extrapolation_assign_with_tokens (ppl_BD_Shape_int16_t_t x, ppl_const_BD_Shape_int16_t_t y, ppl_const_Constraint_System_t cs, unsigned * tp)` `[related]`

10.7.2.57 `int ppl_BD_Shape_int16_t_limited_CC76_extrapolation_assign (ppl_BD_Shape_int16_t_t x, ppl_const_BD_Shape_int16_t_t y, ppl_const_Constraint_System_t cs)`
`[related]`

10.7.2.58 `int ppl_BD_Shape_int16_t_limited_CC76_extrapolation_assign_with_tokens (ppl_BD_Shape_int16_t_t x, ppl_const_BD_Shape_int16_t_t y, ppl_const_Constraint_System_t cs, unsigned * tp)` `[related]`

10.7.2.59 `int ppl_BD_Shape_int16_t_limited_H79_extrapolation_assign (ppl_BD_Shape_int16_t_t x, ppl_const_BD_Shape_int16_t_t y, ppl_const_Constraint_System_t cs)` `[related]`

10.7.2.60 `int ppl_BD_Shape_int16_t_limited_H79_extrapolation_assign_with_tokens (ppl_BD_Shape_int16_t_t x, ppl_const_BD_Shape_int16_t_t y, ppl_const_Constraint_System_t cs, unsigned * tp)` `[related]`

- 10.7.2.61** `int ppl_BD_Shape_int16_t_linear_partition (ppl_const_BD_Shape_int16_t_t x, ppl_const_BD_Shape_int16_t_t y, ppl_BD_Shape_int16_t_t * p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t * p_rest) [related]`
- 10.7.2.62** `int ppl_BD_Shape_int16_t_map_space_dimensions (ppl_BD_Shape_int16_t_t ph, ppl_dimension_type maps[], size_t n) [related]`
- 10.7.2.63** `int ppl_BD_Shape_int16_t_maximize (ppl_const_BD_Shape_int16_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum) [related]`
- 10.7.2.64** `int ppl_BD_Shape_int16_t_maximize_with_point (ppl_const_BD_Shape_int16_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point) [related]`
- 10.7.2.65** `int ppl_BD_Shape_int16_t_minimize (ppl_const_BD_Shape_int16_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum) [related]`
- 10.7.2.66** `int ppl_BD_Shape_int16_t_minimize_with_point (ppl_const_BD_Shape_int16_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point) [related]`
- 10.7.2.67** `int ppl_BD_Shape_int16_t_OK (ppl_const_BD_Shape_int16_t_t ph) [related]`
- 10.7.2.68** `int ppl_BD_Shape_int16_t_refine_with_congruence (ppl_BD_Shape_int16_t_t ph, ppl_const_Congruence_t c) [related]`
- 10.7.2.69** `int ppl_BD_Shape_int16_t_refine_with_congruences (ppl_BD_Shape_int16_t_t ph, ppl_const_Congruence_System_t cs) [related]`

- 10.7.2.70 `int ppl_BD_Shape_int16_t_refine_with_constraint (ppl_BD_Shape_int16_t_t ph,
ppl_const_Constraint_t c)` [**related**]
- 10.7.2.71 `int ppl_BD_Shape_int16_t_refine_with_constraints (ppl_BD_Shape_int16_t_t ph,
ppl_const_Constraint_System_t cs)` [**related**]
- 10.7.2.72 `int ppl_BD_Shape_int16_t_relation_with_Congruence (ppl_const_BD_Shape_int16_t_t
ph, ppl_const_Congruence_t c)` [**related**]
- 10.7.2.73 `int ppl_BD_Shape_int16_t_relation_with_Constraint (ppl_const_BD_Shape_int16_t_t
ph, ppl_const_Constraint_t c)` [**related**]
- 10.7.2.74 `int ppl_BD_Shape_int16_t_relation_with_Generator (ppl_const_BD_Shape_int16_t_t
ph, ppl_const_Generator_t c)` [**related**]
- 10.7.2.75 `int ppl_BD_Shape_int16_t_remove_higher_space_dimensions (ppl_BD_Shape_int16_t_t
ph, ppl_dimension_type d)` [**related**]
- 10.7.2.76 `int ppl_BD_Shape_int16_t_remove_space_dimensions (ppl_BD_Shape_int16_t_t ph,
ppl_dimension_type ds[], size_t n)` [**related**]
- 10.7.2.77 `int ppl_BD_Shape_int16_t_simplify_using_context_assign (ppl_BD_Shape_int16_t_t x,
ppl_const_BD_Shape_int16_t_t y)` [**related**]
- 10.7.2.78 `int ppl_BD_Shape_int16_t_space_dimension (ppl_const_BD_Shape_int16_t_t ph,
ppl_dimension_type * m)` [**related**]

- 10.7.2.79** `int ppl_BD_Shape_int16_t_strictly_contains_BD_Shape_int16_t (ppl_const_BD_Shape_int16_t tx, ppl_const_BD_Shape_int16_t ty) [related]`
- 10.7.2.80** `int ppl_BD_Shape_int16_t_time_elapse_assign (ppl_BD_Shape_int16_t tx, ppl_const_BD_Shape_int16_t ty) [related]`
- 10.7.2.81** `int ppl_BD_Shape_int16_t_topological_closure_assign (ppl_BD_Shape_int16_t t ph) [related]`
- 10.7.2.82** `int ppl_BD_Shape_int16_t_total_memory_in_bytes (ppl_const_BD_Shape_int16_t t ps, size_t * sz) [related]`
- 10.7.2.83** `int ppl_BD_Shape_int16_t_unconstrain_space_dimension (ppl_BD_Shape_int16_t t ph, ppl_dimension_type var) [related]`
- 10.7.2.84** `int ppl_BD_Shape_int16_t_unconstrain_space_dimensions (ppl_BD_Shape_int16_t t ph, ppl_dimension_type ds[], size_t n) [related]`
- 10.7.2.85** `int ppl_BD_Shape_int16_t_upper_bound_assign (ppl_BD_Shape_int16_t tx, ppl_const_BD_Shape_int16_t ty) [related]`
- 10.7.2.86** `int ppl_BD_Shape_int16_t_upper_bound_assign_if_exact (ppl_BD_Shape_int16_t tx, ppl_const_BD_Shape_int16_t ty) [related]`
- 10.7.2.87** `int ppl_BD_Shape_int16_t_widening_assign (ppl_BD_Shape_int16_t tx, ppl_const_BD_Shape_int16_t ty) [related]`

- 10.7.2.88 `int ppl_BD_Shape_int16_t_widening_assign_with_tokens (ppl_BD_Shape_int16_t_t x, ppl_const_BD_Shape_int16_t_t y, unsigned * tp)` [related]
- 10.7.2.89 `int ppl_BD_Shape_int16_t_wrap_assign (ppl_BD_Shape_int16_t_t ph, ppl_dimension_type ds[], size_t n, enum ppl_enum_Bounded_Integer_Type_Width w, enum ppl_enum_Bounded_Integer_Type_Representation r, enum ppl_enum_Bounded_Integer_Type_Overflow o, const ppl_const_Constraint_System_t * pcs, unsigned complexity_threshold, int wrap_individually)` [related]
- 10.7.2.90 `int ppl_delete_BD_Shape_int16_t (ppl_const_BD_Shape_int16_t_t ph)` [related]
- 10.7.2.91 `int ppl_new_BD_Shape_int16_t_from_BD_Shape_double (ppl_BD_Shape_int16_t_t * pph, ppl_const_BD_Shape_double_t ph)` [related]
- 10.7.2.92 `int ppl_new_BD_Shape_int16_t_from_BD_Shape_double_with_complexity (ppl_BD_Shape_int16_t_t * pph, ppl_const_BD_Shape_double_t ph, int complexity)` [related]
- 10.7.2.93 `int ppl_new_BD_Shape_int16_t_from_BD_Shape_float (ppl_BD_Shape_int16_t_t * pph, ppl_const_BD_Shape_float_t ph)` [related]
- 10.7.2.94 `int ppl_new_BD_Shape_int16_t_from_BD_Shape_float_with_complexity (ppl_BD_Shape_int16_t_t * pph, ppl_const_BD_Shape_float_t ph, int complexity)` [related]
- 10.7.2.95 `int ppl_new_BD_Shape_int16_t_from_BD_Shape_int16_t (ppl_BD_Shape_int16_t_t * pph, ppl_const_BD_Shape_int16_t_t ph)` [related]

- 10.7.2.96** int ppl_new_BD_Shape_int16_t_from_BD_Shape_int16_t_with_complexity
(ppl_BD_Shape_int16_t_t * *pph*, ppl_const_BD_Shape_int16_t_t *ph*, int *complexity*)
[related]
- 10.7.2.97** int ppl_new_BD_Shape_int16_t_from_BD_Shape_int32_t (ppl_BD_Shape_int16_t_t *
pph, ppl_const_BD_Shape_int32_t_t *ph*) [related]
- 10.7.2.98** int ppl_new_BD_Shape_int16_t_from_BD_Shape_int32_t_with_complexity
(ppl_BD_Shape_int16_t_t * *pph*, ppl_const_BD_Shape_int32_t_t *ph*, int *complexity*)
[related]
- 10.7.2.99** int ppl_new_BD_Shape_int16_t_from_BD_Shape_int64_t (ppl_BD_Shape_int16_t_t *
pph, ppl_const_BD_Shape_int64_t_t *ph*) [related]
- 10.7.2.100** int ppl_new_BD_Shape_int16_t_from_BD_Shape_int64_t_with_complexity
(ppl_BD_Shape_int16_t_t * *pph*, ppl_const_BD_Shape_int64_t_t *ph*, int *complexity*)
[related]
- 10.7.2.101** int ppl_new_BD_Shape_int16_t_from_BD_Shape_int8_t (ppl_BD_Shape_int16_t_t *
pph, ppl_const_BD_Shape_int8_t_t *ph*) [related]
- 10.7.2.102** int ppl_new_BD_Shape_int16_t_from_BD_Shape_int8_t_with_complexity
(ppl_BD_Shape_int16_t_t * *pph*, ppl_const_BD_Shape_int8_t_t *ph*, int *complexity*)
[related]
- 10.7.2.103** int ppl_new_BD_Shape_int16_t_from_BD_Shape_long_double
(ppl_BD_Shape_int16_t_t * *pph*, ppl_const_BD_Shape_long_double_t *ph*)
[related]

- 10.7.2.104 `int ppl_new_BD_Shape_int16_t_from_BD_Shape_long_double_with_complexity`
(`ppl_BD_Shape_int16_t_t * pph`, `ppl_const_BD_Shape_long_double_t ph`, `int complexity`) [`related`]

- 10.7.2.105 `int ppl_new_BD_Shape_int16_t_from_BD_Shape_mpq_class`
(`ppl_BD_Shape_int16_t_t * pph`, `ppl_const_BD_Shape_mpq_class_t ph`) [`related`]

- 10.7.2.106 `int ppl_new_BD_Shape_int16_t_from_BD_Shape_mpq_class_with_complexity`
(`ppl_BD_Shape_int16_t_t * pph`, `ppl_const_BD_Shape_mpq_class_t ph`, `int complexity`) [`related`]

- 10.7.2.107 `int ppl_new_BD_Shape_int16_t_from_BD_Shape_mpz_class` (`ppl_BD_Shape_int16_t_t * pph`, `ppl_const_BD_Shape_mpz_class_t ph`) [`related`]

- 10.7.2.108 `int ppl_new_BD_Shape_int16_t_from_BD_Shape_mpz_class_with_complexity`
(`ppl_BD_Shape_int16_t_t * pph`, `ppl_const_BD_Shape_mpz_class_t ph`, `int complexity`) [`related`]

- 10.7.2.109 `int ppl_new_BD_Shape_int16_t_from_C_Polyhedron` (`ppl_BD_Shape_int16_t_t * pph`, `ppl_const_Polyhedron_t ph`) [`related`]

- 10.7.2.110 `int ppl_new_BD_Shape_int16_t_from_C_Polyhedron_with_complexity`
(`ppl_BD_Shape_int16_t_t * pph`, `ppl_const_Polyhedron_t ph`, `int complexity`) [`related`]

- 10.7.2.111 `int ppl_new_BD_Shape_int16_t_from_Congruence_System` (`ppl_BD_Shape_int16_t_t * pph`, `ppl_const_Congruence_System_t cs`) [`related`]

- 10.7.2.112 `int ppl_new_BD_Shape_int16_t_from_Constraint_System` (`ppl_BD_Shape_int16_t_t * pph`, `ppl_const_Constraint_System_t cs`) [`related`]

- 10.7.2.113 `int ppl_new_BD_Shape_int16_t_from_Double_Box (ppl_BD_Shape_int16_t_t * pph, ppl_const_Double_Box_t ph)` [**related**]
- 10.7.2.114 `int ppl_new_BD_Shape_int16_t_from_Double_Box_with_complexity (ppl_BD_Shape_int16_t_t * pph, ppl_const_Double_Box_t ph, int complexity)` [**related**]
- 10.7.2.115 `int ppl_new_BD_Shape_int16_t_from_Float_Box (ppl_BD_Shape_int16_t_t * pph, ppl_const_Float_Box_t ph)` [**related**]
- 10.7.2.116 `int ppl_new_BD_Shape_int16_t_from_Float_Box_with_complexity (ppl_BD_Shape_int16_t_t * pph, ppl_const_Float_Box_t ph, int complexity)` [**related**]
- 10.7.2.117 `int ppl_new_BD_Shape_int16_t_from_Generator_System (ppl_BD_Shape_int16_t_t * pph, ppl_const_Generator_System_t cs)` [**related**]
- 10.7.2.118 `int ppl_new_BD_Shape_int16_t_from_Grid (ppl_BD_Shape_int16_t_t * pph, ppl_const_Grid_t ph)` [**related**]
- 10.7.2.119 `int ppl_new_BD_Shape_int16_t_from_Grid_with_complexity (ppl_BD_Shape_int16_t_t * pph, ppl_const_Grid_t ph, int complexity)` [**related**]
- 10.7.2.120 `int ppl_new_BD_Shape_int16_t_from_Int16_Box (ppl_BD_Shape_int16_t_t * pph, ppl_const_Int16_Box_t ph)` [**related**]
- 10.7.2.121 `int ppl_new_BD_Shape_int16_t_from_Int16_Box_with_complexity (ppl_BD_Shape_int16_t_t * pph, ppl_const_Int16_Box_t ph, int complexity)` [**related**]

- 10.7.2.122 `int ppl_new_BD_Shape_int16_t_from_Int32_Box (ppl_BD_Shape_int16_t_t * pph,
ppl_const_Int32_Box_t ph)` [related]
- 10.7.2.123 `int ppl_new_BD_Shape_int16_t_from_Int32_Box_with_complexity
(ppl_BD_Shape_int16_t_t * pph, ppl_const_Int32_Box_t ph, int complexity)`
[related]
- 10.7.2.124 `int ppl_new_BD_Shape_int16_t_from_Int64_Box (ppl_BD_Shape_int16_t_t * pph,
ppl_const_Int64_Box_t ph)` [related]
- 10.7.2.125 `int ppl_new_BD_Shape_int16_t_from_Int64_Box_with_complexity
(ppl_BD_Shape_int16_t_t * pph, ppl_const_Int64_Box_t ph, int complexity)`
[related]
- 10.7.2.126 `int ppl_new_BD_Shape_int16_t_from_Int8_Box (ppl_BD_Shape_int16_t_t * pph,
ppl_const_Int8_Box_t ph)` [related]
- 10.7.2.127 `int ppl_new_BD_Shape_int16_t_from_Int8_Box_with_complexity
(ppl_BD_Shape_int16_t_t * pph, ppl_const_Int8_Box_t ph, int complexity)`
[related]
- 10.7.2.128 `int ppl_new_BD_Shape_int16_t_from_Long_Double_Box (ppl_BD_Shape_int16_t_t *
pph, ppl_const_Long_Double_Box_t ph)` [related]
- 10.7.2.129 `int ppl_new_BD_Shape_int16_t_from_Long_Double_Box_with_complexity
(ppl_BD_Shape_int16_t_t * pph, ppl_const_Long_Double_Box_t ph, int complexity)`
[related]
- 10.7.2.130 `int ppl_new_BD_Shape_int16_t_from_NNC_Polyhedron (ppl_BD_Shape_int16_t_t *
pph, ppl_const_Polyhedron_t ph)` [related]

- 10.7.2.131 `int ppl_new_BD_Shape_int16_t_from_NNC_Polyhedron_with_complexity`
(`ppl_BD_Shape_int16_t_t * pph`, `ppl_const_Polyhedron_t ph`, `int complexity`)
[related]
- 10.7.2.132 `int ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_double`
(`ppl_BD_Shape_int16_t_t * pph`, `ppl_const_Octagonal_Shape_double_t ph`)
[related]
- 10.7.2.133 `int ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_double_with_complexity`
(`ppl_BD_Shape_int16_t_t * pph`, `ppl_const_Octagonal_Shape_double_t ph`, `int complexity`) [related]
- 10.7.2.134 `int ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_float`
(`ppl_BD_Shape_int16_t_t * pph`, `ppl_const_Octagonal_Shape_float_t ph`)
[related]
- 10.7.2.135 `int ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_float_with_complexity`
(`ppl_BD_Shape_int16_t_t * pph`, `ppl_const_Octagonal_Shape_float_t ph`, `int complexity`) [related]
- 10.7.2.136 `int ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_int16_t`
(`ppl_BD_Shape_int16_t_t * pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`)
[related]
- 10.7.2.137 `int ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_int16_t_with_complexity`
(`ppl_BD_Shape_int16_t_t * pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`, `int complexity`) [related]
- 10.7.2.138 `int ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_int32_t`
(`ppl_BD_Shape_int16_t_t * pph`, `ppl_const_Octagonal_Shape_int32_t_t ph`)
[related]

- 10.7.2.139 `int ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_int32_t_with_complexity`
 (`ppl_BD_Shape_int16_t_t * pp_h`, `ppl_const_Octagonal_Shape_int32_t_t ph`, `int complexity`) [`related`]
- 10.7.2.140 `int ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_int64_t`
 (`ppl_BD_Shape_int16_t_t * pp_h`, `ppl_const_Octagonal_Shape_int64_t_t ph`)
 [`related`]
- 10.7.2.141 `int ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_int64_t_with_complexity`
 (`ppl_BD_Shape_int16_t_t * pp_h`, `ppl_const_Octagonal_Shape_int64_t_t ph`, `int complexity`) [`related`]
- 10.7.2.142 `int ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_int8_t`
 (`ppl_BD_Shape_int16_t_t * pp_h`, `ppl_const_Octagonal_Shape_int8_t_t ph`)
 [`related`]
- 10.7.2.143 `int ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_int8_t_with_complexity`
 (`ppl_BD_Shape_int16_t_t * pp_h`, `ppl_const_Octagonal_Shape_int8_t_t ph`, `int complexity`) [`related`]
- 10.7.2.144 `int ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_long_double`
 (`ppl_BD_Shape_int16_t_t * pp_h`, `ppl_const_Octagonal_Shape_long_double_t_t ph`)
 [`related`]
- 10.7.2.145 `int ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_-`
`long_double_with_complexity` (`ppl_BD_Shape_int16_t_t * pp_h`,
`ppl_const_Octagonal_Shape_long_double_t_t ph`, `int complexity`) [`related`]
- 10.7.2.146 `int ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_mpq_class`
 (`ppl_BD_Shape_int16_t_t * pp_h`, `ppl_const_Octagonal_Shape_mpq_class_t_t ph`)
 [`related`]

- 10.7.2.147** `int ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_mpq_class_with_complexity`
 (`ppl_BD_Shape_int16_t_t * pph`, `ppl_const_Octagonal_Shape_mpq_class_t ph`, `int complexity`) [**related**]
- 10.7.2.148** `int ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_mpz_class`
 (`ppl_BD_Shape_int16_t_t * pph`, `ppl_const_Octagonal_Shape_mpz_class_t ph`)
 [**related**]
- 10.7.2.149** `int ppl_new_BD_Shape_int16_t_from_Octagonal_Shape_mpz_class_with_complexity`
 (`ppl_BD_Shape_int16_t_t * pph`, `ppl_const_Octagonal_Shape_mpz_class_t ph`, `int complexity`) [**related**]
- 10.7.2.150** `int ppl_new_BD_Shape_int16_t_from_Rational_Box` (`ppl_BD_Shape_int16_t_t * pph`,
`ppl_const_Rational_Box_t ph`) [**related**]
- 10.7.2.151** `int ppl_new_BD_Shape_int16_t_from_Rational_Box_with_complexity`
 (`ppl_BD_Shape_int16_t_t * pph`, `ppl_const_Rational_Box_t ph`, `int complexity`)
 [**related**]
- 10.7.2.152** `int ppl_new_BD_Shape_int16_t_from_space_dimension` (`ppl_BD_Shape_int16_t_t * pph`,
`ppl_dimension_type d`, `int empty`) [**related**]
- 10.7.2.153** `int ppl_new_BD_Shape_int16_t_from_Uint16_Box` (`ppl_BD_Shape_int16_t_t * pph`,
`ppl_const_Uint16_Box_t ph`) [**related**]
- 10.7.2.154** `int ppl_new_BD_Shape_int16_t_from_Uint16_Box_with_complexity`
 (`ppl_BD_Shape_int16_t_t * pph`, `ppl_const_Uint16_Box_t ph`, `int complexity`)
 [**related**]

- 10.7.2.155 `int ppl_new_BD_Shape_int16_t_from_Uint32_Box (ppl_BD_Shape_int16_t_t * pph,
ppl_const_Uint32_Box_t ph)` `[related]`
- 10.7.2.156 `int ppl_new_BD_Shape_int16_t_from_Uint32_Box_with_complexity
(ppl_BD_Shape_int16_t_t * pph, ppl_const_Uint32_Box_t ph, int complexity)`
`[related]`
- 10.7.2.157 `int ppl_new_BD_Shape_int16_t_from_Uint64_Box (ppl_BD_Shape_int16_t_t * pph,
ppl_const_Uint64_Box_t ph)` `[related]`
- 10.7.2.158 `int ppl_new_BD_Shape_int16_t_from_Uint64_Box_with_complexity
(ppl_BD_Shape_int16_t_t * pph, ppl_const_Uint64_Box_t ph, int complexity)`
`[related]`
- 10.7.2.159 `int ppl_new_BD_Shape_int16_t_from_Uint8_Box (ppl_BD_Shape_int16_t_t * pph,
ppl_const_Uint8_Box_t ph)` `[related]`
- 10.7.2.160 `int ppl_new_BD_Shape_int16_t_from_Uint8_Box_with_complexity
(ppl_BD_Shape_int16_t_t * pph, ppl_const_Uint8_Box_t ph, int complexity)`
`[related]`
- 10.7.2.161 `int ppl_new_BD_Shape_int16_t_from_Z_Box (ppl_BD_Shape_int16_t_t * pph,
ppl_const_Z_Box_t ph)` `[related]`
- 10.7.2.162 `int ppl_new_BD_Shape_int16_t_from_Z_Box_with_complexity
(ppl_BD_Shape_int16_t_t * pph, ppl_const_Z_Box_t ph, int complexity)` `[related]`
- 10.7.2.163 `int ppl_new_BD_Shape_int16_t_recycle_Congruence_System
(ppl_BD_Shape_int16_t_t * pph, ppl_Congruence_System_t cs)` `[related]`

- 10.7.2.164** `int ppl_new_BD_Shape_int16_t_recycle_Constraint_System (ppl_BD_Shape_int16_t_t * pph, ppl_Constraint_System_t cs)` [**related**]
- 10.7.2.165** `int ppl_new_BD_Shape_int16_t_recycle_Generator_System (ppl_BD_Shape_int16_t_t * pph, ppl_Generator_System_t cs)` [**related**]
- 10.7.2.166** `int ppl_one_affine_ranking_function_MS_BD_Shape_int16_t (ppl_const_BD_Shape_int16_t_t pset, ppl_Generator_t point)` [**related**]
- 10.7.2.167** `int ppl_one_affine_ranking_function_MS_BD_Shape_int16_t_2 (ppl_const_BD_Shape_int16_t_t pset_before, ppl_const_BD_Shape_int16_t_t pset_after, ppl_Generator_t point)` [**related**]
- 10.7.2.168** `int ppl_one_affine_ranking_function_PR_BD_Shape_int16_t (ppl_const_BD_Shape_int16_t_t pset, ppl_Generator_t point)` [**related**]
- 10.7.2.169** `int ppl_one_affine_ranking_function_PR_BD_Shape_int16_t_2 (ppl_const_BD_Shape_int16_t_t pset_before, ppl_const_BD_Shape_int16_t_t pset_after, ppl_Generator_t point)` [**related**]
- 10.7.2.170** `int ppl_termination_test_MS_BD_Shape_int16_t (ppl_const_BD_Shape_int16_t_t pset)` [**related**]
- 10.7.2.171** `int ppl_termination_test_MS_BD_Shape_int16_t_2 (ppl_const_BD_Shape_int16_t_t pset_before, ppl_const_BD_Shape_int16_t_t pset_after)` [**related**]
- 10.7.2.172** `int ppl_termination_test_PR_BD_Shape_int16_t (ppl_const_BD_Shape_int16_t_t pset)` [**related**]

10.7.2.173 `int ppl_termination_test_PR_BD_Shape_int16_t_2 (ppl_const_BD_Shape_int16_t_t pset_before, ppl_const_BD_Shape_int16_t_t pset_after)` [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.8 `ppl_BD_Shape_int32_t_tag` Interface Reference

Types and functions for [ppl_BD_Shape_int32_t_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_BD_Shape_int32_t (ppl_const_BD_Shape_int32_t_t ph)`
- `int ppl_new_BD_Shape_int32_t_from_space_dimension (ppl_BD_Shape_int32_t_t *pph, ppl_dimension_type d, int empty)`
- `int ppl_new_BD_Shape_int32_t_from_Int8_Box (ppl_BD_Shape_int32_t_t *pph, ppl_const_Int8_Box_t ph)`
- `int ppl_new_BD_Shape_int32_t_from_Int16_Box (ppl_BD_Shape_int32_t_t *pph, ppl_const_Int16_Box_t ph)`
- `int ppl_new_BD_Shape_int32_t_from_Int32_Box (ppl_BD_Shape_int32_t_t *pph, ppl_const_Int32_Box_t ph)`
- `int ppl_new_BD_Shape_int32_t_from_Int64_Box (ppl_BD_Shape_int32_t_t *pph, ppl_const_Int64_Box_t ph)`
- `int ppl_new_BD_Shape_int32_t_from_UInt8_Box (ppl_BD_Shape_int32_t_t *pph, ppl_const_UInt8_Box_t ph)`
- `int ppl_new_BD_Shape_int32_t_from_UInt16_Box (ppl_BD_Shape_int32_t_t *pph, ppl_const_UInt16_Box_t ph)`
- `int ppl_new_BD_Shape_int32_t_from_UInt32_Box (ppl_BD_Shape_int32_t_t *pph, ppl_const_UInt32_Box_t ph)`
- `int ppl_new_BD_Shape_int32_t_from_UInt64_Box (ppl_BD_Shape_int32_t_t *pph, ppl_const_UInt64_Box_t ph)`
- `int ppl_new_BD_Shape_int32_t_from_Z_Box (ppl_BD_Shape_int32_t_t *pph, ppl_const_Z_Box_t ph)`
- `int ppl_new_BD_Shape_int32_t_from_Rational_Box (ppl_BD_Shape_int32_t_t *pph, ppl_const_Rational_Box_t ph)`
- `int ppl_new_BD_Shape_int32_t_from_BD_Shape_int8_t (ppl_BD_Shape_int32_t_t *pph, ppl_const_BD_Shape_int8_t_t ph)`
- `int ppl_new_BD_Shape_int32_t_from_BD_Shape_int16_t (ppl_BD_Shape_int32_t_t *pph, ppl_const_BD_Shape_int16_t_t ph)`
- `int ppl_new_BD_Shape_int32_t_from_BD_Shape_int32_t (ppl_BD_Shape_int32_t_t *pph, ppl_const_BD_Shape_int32_t_t ph)`
- `int ppl_new_BD_Shape_int32_t_from_BD_Shape_int64_t (ppl_BD_Shape_int32_t_t *pph, ppl_const_BD_Shape_int64_t_t ph)`
- `int ppl_new_BD_Shape_int32_t_from_BD_Shape_mpz_class (ppl_BD_Shape_int32_t_t *pph, ppl_const_BD_Shape_mpz_class_t ph)`

- int [ppl_new_BD_Shape_int32_t_from_BD_Shape_mpq_class](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_BD_Shape_mpq_class_t ph)
- int [ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_int8_t](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph)
- int [ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_int16_t](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph)
- int [ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_int32_t](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph)
- int [ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_int64_t](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph)
- int [ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_mpz_class](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph)
- int [ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_mpq_class](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph)
- int [ppl_new_BD_Shape_int32_t_from_C_Polyhedron](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_C_Polyhedron_t ph)
- int [ppl_new_BD_Shape_int32_t_from_NNC_Polyhedron](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_NNC_Polyhedron_t ph)
- int [ppl_new_BD_Shape_int32_t_from_Grid](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Grid_t ph)
- int [ppl_new_BD_Shape_int32_t_from_Float_Box](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Float_Box_t ph)
- int [ppl_new_BD_Shape_int32_t_from_BD_Shape_float](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_BD_Shape_float_t ph)
- int [ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_float](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_float_t ph)
- int [ppl_new_BD_Shape_int32_t_from_Double_Box](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Double_Box_t ph)
- int [ppl_new_BD_Shape_int32_t_from_BD_Shape_double](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_BD_Shape_double_t ph)
- int [ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_double](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_double_t ph)
- int [ppl_new_BD_Shape_int32_t_from_Long_Double_Box](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Long_Double_Box_t ph)
- int [ppl_new_BD_Shape_int32_t_from_BD_Shape_long_double](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_BD_Shape_long_double_t ph)
- int [ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_long_double](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_long_double_t ph)
- int [ppl_new_BD_Shape_int32_t_from_Int8_Box_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Int8_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_int32_t_from_Int16_Box_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Int16_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_int32_t_from_Int32_Box_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Int32_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_int32_t_from_Int64_Box_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Int64_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_int32_t_from_Uint8_Box_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Uint8_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_int32_t_from_Uint16_Box_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Uint16_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_int32_t_from_Uint32_Box_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Uint32_Box_t ph, int complexity)

- [int ppl_new_BD_Shape_int32_t_from_Uint64_Box_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Uint64_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_int32_t_from_Z_Box_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Z_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_int32_t_from_Rational_Box_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Rational_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_int32_t_from_BD_Shape_int8_t_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)
- [int ppl_new_BD_Shape_int32_t_from_BD_Shape_int16_t_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)
- [int ppl_new_BD_Shape_int32_t_from_BD_Shape_int32_t_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)
- [int ppl_new_BD_Shape_int32_t_from_BD_Shape_int64_t_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)
- [int ppl_new_BD_Shape_int32_t_from_BD_Shape_mpz_class_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)
- [int ppl_new_BD_Shape_int32_t_from_BD_Shape_mpq_class_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)
- [int ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_int8_t_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)
- [int ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_int16_t_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)
- [int ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_int32_t_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)
- [int ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_int64_t_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)
- [int ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_mpz_class_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)
- [int ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_mpq_class_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)
- [int ppl_new_BD_Shape_int32_t_from_C_Polyhedron_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- [int ppl_new_BD_Shape_int32_t_from_NNC_Polyhedron_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- [int ppl_new_BD_Shape_int32_t_from_Grid_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Grid_t ph, int complexity)
- [int ppl_new_BD_Shape_int32_t_from_Float_Box_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Float_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_int32_t_from_BD_Shape_float_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_BD_Shape_float_t ph, int complexity)
- [int ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_float_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)
- [int ppl_new_BD_Shape_int32_t_from_Double_Box_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Double_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_int32_t_from_BD_Shape_double_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_BD_Shape_double_t ph, int complexity)
- [int ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_double_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)
- [int ppl_new_BD_Shape_int32_t_from_Long_Double_Box_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_int32_t_from_BD_Shape_long_double_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity)

- int [ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_long_double_with_complexity](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)
- int [ppl_new_BD_Shape_int32_t_from_Constraint_System](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Constraint_System_t cs)
- int [ppl_new_BD_Shape_int32_t_from_Congruence_System](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Congruence_System_t cs)
- int [ppl_new_BD_Shape_int32_t_from_Generator_System](#) (ppl_BD_Shape_int32_t_t *pph, ppl_const_Generator_System_t cs)
- int [ppl_BD_Shape_int32_t_space_dimension](#) (ppl_const_BD_Shape_int32_t_t ph, ppl_dimension_type *m)
- int [ppl_BD_Shape_int32_t_affine_dimension](#) (ppl_const_BD_Shape_int32_t_t ph, ppl_dimension_type *m)
- int [ppl_BD_Shape_int32_t_relation_with_Constraint](#) (ppl_const_BD_Shape_int32_t_t ph, ppl_const_Constraint_t c)
- int [ppl_BD_Shape_int32_t_relation_with_Generator](#) (ppl_const_BD_Shape_int32_t_t ph, ppl_const_Generator_t c)
- int [ppl_BD_Shape_int32_t_relation_with_Congruence](#) (ppl_const_BD_Shape_int32_t_t ph, ppl_const_Congruence_t c)
- int [ppl_BD_Shape_int32_t_get_constraints](#) (ppl_const_BD_Shape_int32_t_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_BD_Shape_int32_t_get_congruences](#) (ppl_const_BD_Shape_int32_t_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_BD_Shape_int32_t_get_minimized_constraints](#) (ppl_const_BD_Shape_int32_t_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_BD_Shape_int32_t_get_minimized_congruences](#) (ppl_const_BD_Shape_int32_t_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_BD_Shape_int32_t_is_empty](#) (ppl_const_BD_Shape_int32_t_t ph)
- int [ppl_BD_Shape_int32_t_is_universe](#) (ppl_const_BD_Shape_int32_t_t ph)
- int [ppl_BD_Shape_int32_t_is_bounded](#) (ppl_const_BD_Shape_int32_t_t ph)
- int [ppl_BD_Shape_int32_t_contains_integer_point](#) (ppl_const_BD_Shape_int32_t_t ph)
- int [ppl_BD_Shape_int32_t_is_topologically_closed](#) (ppl_const_BD_Shape_int32_t_t ph)
- int [ppl_BD_Shape_int32_t_is_discrete](#) (ppl_const_BD_Shape_int32_t_t ph)
- int [ppl_BD_Shape_int32_t_topological_closure_assign](#) (ppl_BD_Shape_int32_t_t ph)
- int [ppl_BD_Shape_int32_t_bounds_from_above](#) (ppl_const_BD_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_BD_Shape_int32_t_bounds_from_below](#) (ppl_const_BD_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_BD_Shape_int32_t_maximize](#) (ppl_const_BD_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_BD_Shape_int32_t_minimize](#) (ppl_const_BD_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_BD_Shape_int32_t_maximize_with_point](#) (ppl_const_BD_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_BD_Shape_int32_t_minimize_with_point](#) (ppl_const_BD_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_BD_Shape_int32_t_frequency](#) (ppl_const_BD_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)
- int [ppl_BD_Shape_int32_t_contains_BD_Shape_int32_t](#) (ppl_const_BD_Shape_int32_t_t x, ppl_const_BD_Shape_int32_t_t y)

- `int ppl_BD_Shape_int32_t_strictly_contains_BD_Shape_int32_t` (`ppl_const_BD_Shape_int32_t_t x`, `ppl_const_BD_Shape_int32_t_t y`)
- `int ppl_BD_Shape_int32_t_is_disjoint_from_BD_Shape_int32_t` (`ppl_const_BD_Shape_int32_t_t x`, `ppl_const_BD_Shape_int32_t_t y`)
- `int ppl_BD_Shape_int32_t_equals_BD_Shape_int32_t` (`ppl_const_BD_Shape_int32_t_t x`, `ppl_const_BD_Shape_int32_t_t y`)
- `int ppl_BD_Shape_int32_t_OK` (`ppl_const_BD_Shape_int32_t_t ph`)
- `int ppl_BD_Shape_int32_t_add_constraint` (`ppl_BD_Shape_int32_t_t ph`, `ppl_const_Constraint_t c`)
- `int ppl_BD_Shape_int32_t_add_congruence` (`ppl_BD_Shape_int32_t_t ph`, `ppl_const_Congruence_t c`)
- `int ppl_BD_Shape_int32_t_add_constraints` (`ppl_BD_Shape_int32_t_t ph`, `ppl_const_Constraint_System_t cs`)
- `int ppl_BD_Shape_int32_t_add_congruences` (`ppl_BD_Shape_int32_t_t ph`, `ppl_const_Congruence_System_t cs`)
- `int ppl_BD_Shape_int32_t_refine_with_constraint` (`ppl_BD_Shape_int32_t_t ph`, `ppl_const_Constraint_t c`)
- `int ppl_BD_Shape_int32_t_refine_with_congruence` (`ppl_BD_Shape_int32_t_t ph`, `ppl_const_Congruence_t c`)
- `int ppl_BD_Shape_int32_t_refine_with_constraints` (`ppl_BD_Shape_int32_t_t ph`, `ppl_const_Constraint_System_t cs`)
- `int ppl_BD_Shape_int32_t_refine_with_congruences` (`ppl_BD_Shape_int32_t_t ph`, `ppl_const_Congruence_System_t cs`)
- `int ppl_BD_Shape_int32_t_intersection_assign` (`ppl_BD_Shape_int32_t_t x`, `ppl_const_BD_Shape_int32_t_t y`)
- `int ppl_BD_Shape_int32_t_upper_bound_assign` (`ppl_BD_Shape_int32_t_t x`, `ppl_const_BD_Shape_int32_t_t y`)
- `int ppl_BD_Shape_int32_t_difference_assign` (`ppl_BD_Shape_int32_t_t x`, `ppl_const_BD_Shape_int32_t_t y`)
- `int ppl_BD_Shape_int32_t_concatenate_assign` (`ppl_BD_Shape_int32_t_t x`, `ppl_const_BD_Shape_int32_t_t y`)
- `int ppl_BD_Shape_int32_t_time_elapse_assign` (`ppl_BD_Shape_int32_t_t x`, `ppl_const_BD_Shape_int32_t_t y`)
- `int ppl_BD_Shape_int32_t_upper_bound_assign_if_exact` (`ppl_BD_Shape_int32_t_t x`, `ppl_const_BD_Shape_int32_t_t y`)
- `int ppl_BD_Shape_int32_t_simplify_using_context_assign` (`ppl_BD_Shape_int32_t_t x`, `ppl_const_BD_Shape_int32_t_t y`)
- `int ppl_BD_Shape_int32_t_constrains` (`ppl_BD_Shape_int32_t_t ph`, `ppl_dimension_type var`)
- `int ppl_BD_Shape_int32_t_unconstrain_space_dimension` (`ppl_BD_Shape_int32_t_t ph`, `ppl_dimension_type var`)
- `int ppl_BD_Shape_int32_t_unconstrain_space_dimensions` (`ppl_BD_Shape_int32_t_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`)
- `int ppl_BD_Shape_int32_t_affine_image` (`ppl_BD_Shape_int32_t_t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`)
- `int ppl_BD_Shape_int32_t_affine_preimage` (`ppl_BD_Shape_int32_t_t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`)
- `int ppl_BD_Shape_int32_t_bounded_affine_image` (`ppl_BD_Shape_int32_t_t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t lb`, `ppl_const_Linear_Expression_t ub`, `ppl_const_Coefficient_t d`)
- `int ppl_BD_Shape_int32_t_bounded_affine_preimage` (`ppl_BD_Shape_int32_t_t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t lb`, `ppl_const_Linear_Expression_t ub`, `ppl_const_Coefficient_t d`)

- `int ppl_BD_Shape_int32_t_generalized_affine_image` (`ppl_BD_Shape_int32_t_t` ph, `ppl_dimension_type` var, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- `int ppl_BD_Shape_int32_t_generalized_affine_preimage` (`ppl_BD_Shape_int32_t_t` ph, `ppl_dimension_type` var, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- `int ppl_BD_Shape_int32_t_generalized_affine_image_lhs_rhs` (`ppl_BD_Shape_int32_t_t` ph, `ppl_const_Linear_Expression_t` lhs, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` rhs)
- `int ppl_BD_Shape_int32_t_generalized_affine_preimage_lhs_rhs` (`ppl_BD_Shape_int32_t_t` ph, `ppl_const_Linear_Expression_t` lhs, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` rhs)
- `int ppl_BD_Shape_int32_t_add_space_dimensions_and_embed` (`ppl_BD_Shape_int32_t_t` ph, `ppl_dimension_type` d)
- `int ppl_BD_Shape_int32_t_add_space_dimensions_and_project` (`ppl_BD_Shape_int32_t_t` ph, `ppl_dimension_type` d)
- `int ppl_BD_Shape_int32_t_remove_space_dimensions` (`ppl_BD_Shape_int32_t_t` ph, `ppl_dimension_type` ds[], `size_t` n)
- `int ppl_BD_Shape_int32_t_remove_higher_space_dimensions` (`ppl_BD_Shape_int32_t_t` ph, `ppl_dimension_type` d)
- `int ppl_BD_Shape_int32_t_expand_space_dimension` (`ppl_BD_Shape_int32_t_t` ph, `ppl_dimension_type` d, `ppl_dimension_type` m)
- `int ppl_BD_Shape_int32_t_fold_space_dimensions` (`ppl_BD_Shape_int32_t_t` ph, `ppl_dimension_type` ds[], `size_t` n, `ppl_dimension_type` d)
- `int ppl_BD_Shape_int32_t_map_space_dimensions` (`ppl_BD_Shape_int32_t_t` ph, `ppl_dimension_type` maps[], `size_t` n)
- `int ppl_BD_Shape_int32_t_drop_some_non_integer_points` (`ppl_BD_Shape_int32_t_t` ph, `int` complexity)
- `int ppl_BD_Shape_int32_t_drop_some_non_integer_points_2` (`ppl_BD_Shape_int32_t_t` ph, `ppl_dimension_type` ds[], `size_t` n, `int` complexity)
- `int ppl_BD_Shape_int32_t_external_memory_in_bytes` (`ppl_const_BD_Shape_int32_t_t` ps, `size_t` *sz)
- `int ppl_BD_Shape_int32_t_total_memory_in_bytes` (`ppl_const_BD_Shape_int32_t_t` ps, `size_t` *sz)
- `int ppl_BD_Shape_int32_t_BHMZ05_widening_assign_with_tokens` (`ppl_BD_Shape_int32_t_t` x, `ppl_const_BD_Shape_int32_t_t` y, `unsigned` *tp)
- `int ppl_BD_Shape_int32_t_H79_widening_assign_with_tokens` (`ppl_BD_Shape_int32_t_t` x, `ppl_const_BD_Shape_int32_t_t` y, `unsigned` *tp)
- `int ppl_BD_Shape_int32_t_BHMZ05_widening_assign` (`ppl_BD_Shape_int32_t_t` x, `ppl_const_BD_Shape_int32_t_t` y)
- `int ppl_BD_Shape_int32_t_H79_widening_assign` (`ppl_BD_Shape_int32_t_t` x, `ppl_const_BD_Shape_int32_t_t` y)
- `int ppl_BD_Shape_int32_t_widening_assign_with_tokens` (`ppl_BD_Shape_int32_t_t` x, `ppl_const_BD_Shape_int32_t_t` y, `unsigned` *tp)
- `int ppl_BD_Shape_int32_t_widening_assign` (`ppl_BD_Shape_int32_t_t` x, `ppl_const_BD_Shape_int32_t_t` y)
- `int ppl_BD_Shape_int32_t_limited_BHMZ05_extrapolation_assign_with_tokens` (`ppl_BD_Shape_int32_t_t` x, `ppl_const_BD_Shape_int32_t_t` y, `ppl_const_Constraint_System_t` cs, `unsigned` *tp)
- `int ppl_BD_Shape_int32_t_limited_H79_extrapolation_assign_with_tokens` (`ppl_BD_Shape_int32_t_t` x, `ppl_const_BD_Shape_int32_t_t` y, `ppl_const_Constraint_System_t` cs, `unsigned` *tp)

- [int ppl_BD_Shape_int32_t_limited_CC76_extrapolation_assign_with_tokens](#) (ppl_BD_Shape_int32_t_t x, ppl_const_BD_Shape_int32_t_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- [int ppl_BD_Shape_int32_t_limited_BHMZ05_extrapolation_assign](#) (ppl_BD_Shape_int32_t_t x, ppl_const_BD_Shape_int32_t_t y, ppl_const_Constraint_System_t cs)
- [int ppl_BD_Shape_int32_t_limited_H79_extrapolation_assign](#) (ppl_BD_Shape_int32_t_t x, ppl_const_BD_Shape_int32_t_t y, ppl_const_Constraint_System_t cs)
- [int ppl_BD_Shape_int32_t_limited_CC76_extrapolation_assign](#) (ppl_BD_Shape_int32_t_t x, ppl_const_BD_Shape_int32_t_t y, ppl_const_Constraint_System_t cs)
- [int ppl_BD_Shape_int32_t_CC76_extrapolation_assign_with_tokens](#) (ppl_BD_Shape_int32_t_t x, ppl_const_BD_Shape_int32_t_t y, unsigned *tp)
- [int ppl_BD_Shape_int32_t_CC76_extrapolation_assign](#) (ppl_BD_Shape_int32_t_t x, ppl_const_BD_Shape_int32_t_t y)
- [int ppl_BD_Shape_int32_t_CC76_narrowing_assign](#) (ppl_BD_Shape_int32_t_t x, ppl_const_BD_Shape_int32_t_t y)
- [int ppl_BD_Shape_int32_t_linear_partition](#) (ppl_const_BD_Shape_int32_t_t x, ppl_const_BD_Shape_int32_t_t y, ppl_BD_Shape_int32_t_t *p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest)
- [int ppl_BD_Shape_int32_t_wrap_assign](#) (ppl_BD_Shape_int32_t_t ph, [ppl_dimension_type](#) ds[], size_t n, enum [ppl_enum_Bounded_Integer_Type_Width](#) w, enum [ppl_enum_Bounded_Integer_Type_Representation](#) r, enum [ppl_enum_Bounded_Integer_Type_Overflow](#) o, const ppl_const_Constraint_System_t *pcs, unsigned complexity_threshold, int wrap_individually)
- [int ppl_new_BD_Shape_int32_t_recycle_Constraint_System](#) (ppl_BD_Shape_int32_t_t *pph, ppl_Constraint_System_t cs)
- [int ppl_new_BD_Shape_int32_t_recycle_Congruence_System](#) (ppl_BD_Shape_int32_t_t *pph, ppl_Congruence_System_t cs)
- [int ppl_new_BD_Shape_int32_t_recycle_Generator_System](#) (ppl_BD_Shape_int32_t_t *pph, ppl_Generator_System_t cs)
- [int ppl_assign_BD_Shape_int32_t_from_BD_Shape_int32_t](#) (ppl_BD_Shape_int32_t_t dst, ppl_const_BD_Shape_int32_t_t src)
- [int ppl_BD_Shape_int32_t_add_recycled_constraints](#) (ppl_BD_Shape_int32_t_t ph, ppl_Constraint_System_t cs)
- [int ppl_BD_Shape_int32_t_add_recycled_congruences](#) (ppl_BD_Shape_int32_t_t ph, ppl_Congruence_System_t cs)
- [int ppl_termination_test_MS_BD_Shape_int32_t](#) (ppl_const_BD_Shape_int32_t_t pset)
- [int ppl_termination_test_PR_BD_Shape_int32_t](#) (ppl_const_BD_Shape_int32_t_t pset)
- [int ppl_one_affine_ranking_function_MS_BD_Shape_int32_t](#) (ppl_const_BD_Shape_int32_t_t pset, ppl_Generator_t point)
- [int ppl_one_affine_ranking_function_PR_BD_Shape_int32_t](#) (ppl_const_BD_Shape_int32_t_t pset, ppl_Generator_t point)
- [int ppl_all_affine_ranking_functions_MS_BD_Shape_int32_t](#) (ppl_const_BD_Shape_int32_t_t pset, ppl_Polyhedron_t ph)
- [int ppl_all_affine_ranking_functions_PR_BD_Shape_int32_t](#) (ppl_const_BD_Shape_int32_t_t pset, ppl_Polyhedron_t ph)
- [int ppl_termination_test_MS_BD_Shape_int32_t_2](#) (ppl_const_BD_Shape_int32_t_t pset_before, ppl_const_BD_Shape_int32_t_t pset_after)
- [int ppl_termination_test_PR_BD_Shape_int32_t_2](#) (ppl_const_BD_Shape_int32_t_t pset_before, ppl_const_BD_Shape_int32_t_t pset_after)
- [int ppl_one_affine_ranking_function_MS_BD_Shape_int32_t_2](#) (ppl_const_BD_Shape_int32_t_t pset_before, ppl_const_BD_Shape_int32_t_t pset_after, ppl_Generator_t point)
- [int ppl_one_affine_ranking_function_PR_BD_Shape_int32_t_2](#) (ppl_const_BD_Shape_int32_t_t pset_before, ppl_const_BD_Shape_int32_t_t pset_after, ppl_Generator_t point)

- int [ppl_all_affine_ranking_functions_MS_BD_Shape_int32_t_2](#) (ppl_const_BD_Shape_int32_t_t pset_before, ppl_const_BD_Shape_int32_t_t pset_after, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_BD_Shape_int32_t_2](#) (ppl_const_BD_Shape_int32_t_t pset_before, ppl_const_BD_Shape_int32_t_t pset_after, ppl_Polyhedron_t ph)

10.8.1 Detailed Description

Types and functions for [ppl_BD_Shape_int32_t_tag](#).

10.8.2 Friends And Related Function Documentation

- 10.8.2.1** int [ppl_all_affine_ranking_functions_MS_BD_Shape_int32_t](#) (ppl_const_BD_Shape_int32_t_t pset, ppl_Polyhedron_t ph) [[related](#)]
- 10.8.2.2** int [ppl_all_affine_ranking_functions_MS_BD_Shape_int32_t_2](#) (ppl_const_BD_Shape_int32_t_t pset_before, ppl_const_BD_Shape_int32_t_t pset_after, ppl_Polyhedron_t ph) [[related](#)]
- 10.8.2.3** int [ppl_all_affine_ranking_functions_PR_BD_Shape_int32_t](#) (ppl_const_BD_Shape_int32_t_t pset, ppl_Polyhedron_t ph) [[related](#)]
- 10.8.2.4** int [ppl_all_affine_ranking_functions_PR_BD_Shape_int32_t_2](#) (ppl_const_BD_Shape_int32_t_t pset_before, ppl_const_BD_Shape_int32_t_t pset_after, ppl_Polyhedron_t ph) [[related](#)]
- 10.8.2.5** int [ppl_assign_BD_Shape_int32_t_from_BD_Shape_int32_t](#) (ppl_BD_Shape_int32_t_t dst, ppl_const_BD_Shape_int32_t_t src) [[related](#)]
- 10.8.2.6** int [ppl_BD_Shape_int32_t_add_congruence](#) (ppl_BD_Shape_int32_t_t ph, ppl_const_Congruence_t c) [[related](#)]
- 10.8.2.7** int [ppl_BD_Shape_int32_t_add_congruences](#) (ppl_BD_Shape_int32_t_t ph, ppl_const_Congruence_System_t cs) [[related](#)]

- 10.8.2.8 `int ppl_BD_Shape_int32_t_add_constraint (ppl_BD_Shape_int32_t_t ph,
ppl_const_Constraint_t c)` [`related`]

- 10.8.2.9 `int ppl_BD_Shape_int32_t_add_constraints (ppl_BD_Shape_int32_t_t ph,
ppl_const_Constraint_System_t cs)` [`related`]

- 10.8.2.10 `int ppl_BD_Shape_int32_t_add_recycled_congruences (ppl_BD_Shape_int32_t_t ph,
ppl_Congruence_System_t cs)` [`related`]

- 10.8.2.11 `int ppl_BD_Shape_int32_t_add_recycled_constraints (ppl_BD_Shape_int32_t_t ph,
ppl_Constraint_System_t cs)` [`related`]

- 10.8.2.12 `int ppl_BD_Shape_int32_t_add_space_dimensions_and_embed
(ppl_BD_Shape_int32_t_t ph, ppl_dimension_type d)` [`related`]

- 10.8.2.13 `int ppl_BD_Shape_int32_t_add_space_dimensions_and_project
(ppl_BD_Shape_int32_t_t ph, ppl_dimension_type d)` [`related`]

- 10.8.2.14 `int ppl_BD_Shape_int32_t_affine_dimension (ppl_const_BD_Shape_int32_t_t ph,
ppl_dimension_type * m)` [`related`]

- 10.8.2.15 `int ppl_BD_Shape_int32_t_affine_image (ppl_BD_Shape_int32_t_t ph,
ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)`
[`related`]

- 10.8.2.16 `int ppl_BD_Shape_int32_t_affine_preimage (ppl_BD_Shape_int32_t_t ph,
ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)`
[`related`]

10.8.2.17 `int ppl_BD_Shape_int32_t_BHMZ05_widening_assign (ppl_BD_Shape_int32_t_t x, ppl_const_BD_Shape_int32_t_t y) [related]`

10.8.2.18 `int ppl_BD_Shape_int32_t_BHMZ05_widening_assign_with_tokens (ppl_BD_Shape_int32_t_t x, ppl_const_BD_Shape_int32_t_t y, unsigned * tp) [related]`

10.8.2.19 `int ppl_BD_Shape_int32_t_bounded_affine_image (ppl_BD_Shape_int32_t_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d) [related]`

10.8.2.20 `int ppl_BD_Shape_int32_t_bounded_affine_preimage (ppl_BD_Shape_int32_t_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d) [related]`

10.8.2.21 `int ppl_BD_Shape_int32_t_bounds_from_above (ppl_const_BD_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le) [related]`

10.8.2.22 `int ppl_BD_Shape_int32_t_bounds_from_below (ppl_const_BD_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le) [related]`

10.8.2.23 `int ppl_BD_Shape_int32_t_CC76_extrapolation_assign (ppl_BD_Shape_int32_t_t x, ppl_const_BD_Shape_int32_t_t y) [related]`

10.8.2.24 `int ppl_BD_Shape_int32_t_CC76_extrapolation_assign_with_tokens (ppl_BD_Shape_int32_t_t x, ppl_const_BD_Shape_int32_t_t y, unsigned * tp) [related]`

10.8.2.25 `int ppl_BD_Shape_int32_t_CC76_narrowing_assign (ppl_BD_Shape_int32_t_t x, ppl_const_BD_Shape_int32_t_t y) [related]`

- 10.8.2.26 `int ppl_BD_Shape_int32_t_concatenate_assign (ppl_BD_Shape_int32_t_t x, ppl_const_BD_Shape_int32_t_t y)` [**related**]
- 10.8.2.27 `int ppl_BD_Shape_int32_t_constrains (ppl_BD_Shape_int32_t_t ph, ppl_dimension_type var)` [**related**]
- 10.8.2.28 `int ppl_BD_Shape_int32_t_contains_BD_Shape_int32_t (ppl_const_BD_Shape_int32_t_t x, ppl_const_BD_Shape_int32_t_t y)` [**related**]
- 10.8.2.29 `int ppl_BD_Shape_int32_t_contains_integer_point (ppl_const_BD_Shape_int32_t_t ph)` [**related**]
- 10.8.2.30 `int ppl_BD_Shape_int32_t_difference_assign (ppl_BD_Shape_int32_t_t x, ppl_const_BD_Shape_int32_t_t y)` [**related**]
- 10.8.2.31 `int ppl_BD_Shape_int32_t_drop_some_non_integer_points (ppl_BD_Shape_int32_t_t ph, int complexity)` [**related**]
- 10.8.2.32 `int ppl_BD_Shape_int32_t_drop_some_non_integer_points_2 (ppl_BD_Shape_int32_t_t ph, ppl_dimension_type ds[], size_t n, int complexity)` [**related**]
- 10.8.2.33 `int ppl_BD_Shape_int32_t_equals_BD_Shape_int32_t (ppl_const_BD_Shape_int32_t_t x, ppl_const_BD_Shape_int32_t_t y)` [**related**]
- 10.8.2.34 `int ppl_BD_Shape_int32_t_expand_space_dimension (ppl_BD_Shape_int32_t_t ph, ppl_dimension_type d, ppl_dimension_type m)` [**related**]

- 10.8.2.35 `int ppl_BD_Shape_int32_t_external_memory_in_bytes (ppl_const_BD_Shape_int32_t_t ps, size_t * sz)` [**related**]
- 10.8.2.36 `int ppl_BD_Shape_int32_t_fold_space_dimensions (ppl_BD_Shape_int32_t_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [**related**]
- 10.8.2.37 `int ppl_BD_Shape_int32_t_frequency (ppl_const_BD_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)` [**related**]
- 10.8.2.38 `int ppl_BD_Shape_int32_t_generalized_affine_image (ppl_BD_Shape_int32_t_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.8.2.39 `int ppl_BD_Shape_int32_t_generalized_affine_image_lhs_rhs (ppl_BD_Shape_int32_t_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` [**related**]
- 10.8.2.40 `int ppl_BD_Shape_int32_t_generalized_affine_preimage (ppl_BD_Shape_int32_t_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.8.2.41 `int ppl_BD_Shape_int32_t_generalized_affine_preimage_lhs_rhs (ppl_BD_Shape_int32_t_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` [**related**]
- 10.8.2.42 `int ppl_BD_Shape_int32_t_get_congruences (ppl_const_BD_Shape_int32_t_t ph, ppl_const_Congruence_System_t * pcs)` [**related**]

- 10.8.2.43 `int ppl_BD_Shape_int32_t_get_constraints (ppl_const_BD_Shape_int32_t_t ph,
ppl_const_Constraint_System_t * pcs)` [**related**]

- 10.8.2.44 `int ppl_BD_Shape_int32_t_get_minimized_congruences (ppl_const_
BD_Shape_int32_t_t ph, ppl_const_Congruence_System_t * pcs)`
[**related**]

- 10.8.2.45 `int ppl_BD_Shape_int32_t_get_minimized_constraints (ppl_const_BD_Shape_int32_t_t
ph, ppl_const_Constraint_System_t * pcs)` [**related**]

- 10.8.2.46 `int ppl_BD_Shape_int32_t_H79_widening_assign (ppl_BD_Shape_int32_t_t x,
ppl_const_BD_Shape_int32_t_t y)` [**related**]

- 10.8.2.47 `int ppl_BD_Shape_int32_t_H79_widening_assign_with_tokens
(ppl_BD_Shape_int32_t_t x, ppl_const_BD_Shape_int32_t_t y, unsigned * tp)`
[**related**]

- 10.8.2.48 `int ppl_BD_Shape_int32_t_intersection_assign (ppl_BD_Shape_int32_t_t x,
ppl_const_BD_Shape_int32_t_t y)` [**related**]

- 10.8.2.49 `int ppl_BD_Shape_int32_t_is_bounded (ppl_const_BD_Shape_int32_t_t ph)`
[**related**]

- 10.8.2.50 `int ppl_BD_Shape_int32_t_is_discrete (ppl_const_BD_Shape_int32_t_t ph)`
[**related**]

- 10.8.2.51 `int ppl_BD_Shape_int32_t_is_disjoint_from_BD_Shape_int32_t
(ppl_const_BD_Shape_int32_t_t x, ppl_const_BD_Shape_int32_t_t y)` [**related**]

10.8.2.52 `int ppl_BD_Shape_int32_t_is_empty (ppl_const_BD_Shape_int32_t_t ph)` [related]

10.8.2.53 `int ppl_BD_Shape_int32_t_is_topologically_closed (ppl_const_BD_Shape_int32_t_t ph)`
[related]

10.8.2.54 `int ppl_BD_Shape_int32_t_is_universe (ppl_const_BD_Shape_int32_t_t ph)`
[related]

10.8.2.55 `int ppl_BD_Shape_int32_t_limited_BHMZ05_extrapolation_assign (ppl_BD_Shape_int32_t_t x, ppl_const_BD_Shape_int32_t_t y, ppl_const_Constraint_System_t cs)`
[related]

10.8.2.56 `int ppl_BD_Shape_int32_t_limited_BHMZ05_extrapolation_assign_with_tokens (ppl_BD_Shape_int32_t_t x, ppl_const_BD_Shape_int32_t_t y, ppl_const_Constraint_System_t cs, unsigned * tp)` [related]

10.8.2.57 `int ppl_BD_Shape_int32_t_limited_CC76_extrapolation_assign (ppl_BD_Shape_int32_t_t x, ppl_const_BD_Shape_int32_t_t y, ppl_const_Constraint_System_t cs)`
[related]

10.8.2.58 `int ppl_BD_Shape_int32_t_limited_CC76_extrapolation_assign_with_tokens (ppl_BD_Shape_int32_t_t x, ppl_const_BD_Shape_int32_t_t y, ppl_const_Constraint_System_t cs, unsigned * tp)` [related]

10.8.2.59 `int ppl_BD_Shape_int32_t_limited_H79_extrapolation_assign (ppl_BD_Shape_int32_t_t x, ppl_const_BD_Shape_int32_t_t y, ppl_const_Constraint_System_t cs)` [related]

10.8.2.60 `int ppl_BD_Shape_int32_t_limited_H79_extrapolation_assign_with_tokens (ppl_BD_Shape_int32_t_t x, ppl_const_BD_Shape_int32_t_t y, ppl_const_Constraint_System_t cs, unsigned * tp)` [related]

- 10.8.2.61 `int ppl_BD_Shape_int32_t_linear_partition (ppl_const_BD_Shape_int32_t_t x, ppl_const_BD_Shape_int32_t_t y, ppl_BD_Shape_int32_t_t * p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t * p_rest)` [**related**]
- 10.8.2.62 `int ppl_BD_Shape_int32_t_map_space_dimensions (ppl_BD_Shape_int32_t_t ph, ppl_dimension_type maps[], size_t n)` [**related**]
- 10.8.2.63 `int ppl_BD_Shape_int32_t_maximize (ppl_const_BD_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [**related**]
- 10.8.2.64 `int ppl_BD_Shape_int32_t_maximize_with_point (ppl_const_BD_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` [**related**]
- 10.8.2.65 `int ppl_BD_Shape_int32_t_minimize (ppl_const_BD_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [**related**]
- 10.8.2.66 `int ppl_BD_Shape_int32_t_minimize_with_point (ppl_const_BD_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` [**related**]
- 10.8.2.67 `int ppl_BD_Shape_int32_t_OK (ppl_const_BD_Shape_int32_t_t ph)` [**related**]
- 10.8.2.68 `int ppl_BD_Shape_int32_t_refine_with_congruence (ppl_BD_Shape_int32_t_t ph, ppl_const_Congruence_t c)` [**related**]
- 10.8.2.69 `int ppl_BD_Shape_int32_t_refine_with_congruences (ppl_BD_Shape_int32_t_t ph, ppl_const_Congruence_System_t cs)` [**related**]

- 10.8.2.70** `int ppl_BD_Shape_int32_t_refine_with_constraint (ppl_BD_Shape_int32_t_t ph, ppl_const_Constraint_t c)` [**related**]
- 10.8.2.71** `int ppl_BD_Shape_int32_t_refine_with_constraints (ppl_BD_Shape_int32_t_t ph, ppl_const_Constraint_System_t cs)` [**related**]
- 10.8.2.72** `int ppl_BD_Shape_int32_t_relation_with_Congruence (ppl_const_BD_Shape_int32_t_t ph, ppl_const_Congruence_t c)` [**related**]
- 10.8.2.73** `int ppl_BD_Shape_int32_t_relation_with_Constraint (ppl_const_BD_Shape_int32_t_t ph, ppl_const_Constraint_t c)` [**related**]
- 10.8.2.74** `int ppl_BD_Shape_int32_t_relation_with_Generator (ppl_const_BD_Shape_int32_t_t ph, ppl_const_Generator_t c)` [**related**]
- 10.8.2.75** `int ppl_BD_Shape_int32_t_remove_higher_space_dimensions (ppl_BD_Shape_int32_t_t ph, ppl_dimension_type d)` [**related**]
- 10.8.2.76** `int ppl_BD_Shape_int32_t_remove_space_dimensions (ppl_BD_Shape_int32_t_t ph, ppl_dimension_type ds[], size_t n)` [**related**]
- 10.8.2.77** `int ppl_BD_Shape_int32_t_simplify_using_context_assign (ppl_BD_Shape_int32_t_t x, ppl_const_BD_Shape_int32_t_t y)` [**related**]
- 10.8.2.78** `int ppl_BD_Shape_int32_t_space_dimension (ppl_const_BD_Shape_int32_t_t ph, ppl_dimension_type * m)` [**related**]

- 10.8.2.79 `int ppl_BD_Shape_int32_t_strictly_contains_BD_Shape_int32_t`
`(ppl_const_BD_Shape_int32_t tx, ppl_const_BD_Shape_int32_t ty) [related]`
- 10.8.2.80 `int ppl_BD_Shape_int32_t_time_elapse_assign (ppl_BD_Shape_int32_t tx,`
`ppl_const_BD_Shape_int32_t ty) [related]`
- 10.8.2.81 `int ppl_BD_Shape_int32_t_topological_closure_assign (ppl_BD_Shape_int32_t t ph)`
`[related]`
- 10.8.2.82 `int ppl_BD_Shape_int32_t_total_memory_in_bytes (ppl_const_BD_Shape_int32_t t ps,`
`size_t * sz) [related]`
- 10.8.2.83 `int ppl_BD_Shape_int32_t_unconstrain_space_dimension (ppl_BD_Shape_int32_t t ph,`
`ppl_dimension_type var) [related]`
- 10.8.2.84 `int ppl_BD_Shape_int32_t_unconstrain_space_dimensions (ppl_BD_Shape_int32_t t`
`ph, ppl_dimension_type ds[], size_t n) [related]`
- 10.8.2.85 `int ppl_BD_Shape_int32_t_upper_bound_assign (ppl_BD_Shape_int32_t tx,`
`ppl_const_BD_Shape_int32_t ty) [related]`
- 10.8.2.86 `int ppl_BD_Shape_int32_t_upper_bound_assign_if_exact (ppl_BD_Shape_int32_t tx,`
`ppl_const_BD_Shape_int32_t ty) [related]`
- 10.8.2.87 `int ppl_BD_Shape_int32_t_widening_assign (ppl_BD_Shape_int32_t tx,`
`ppl_const_BD_Shape_int32_t ty) [related]`

- 10.8.2.88 `int ppl_BD_Shape_int32_t_widening_assign_with_tokens (ppl_BD_Shape_int32_t_t x, ppl_const_BD_Shape_int32_t_t y, unsigned * tp)` [related]
- 10.8.2.89 `int ppl_BD_Shape_int32_t_wrap_assign (ppl_BD_Shape_int32_t_t ph, ppl_dimension_type ds[], size_t n, enum ppl_enum_Bounded_Integer_Type_Width w, enum ppl_enum_Bounded_Integer_Type_Representation r, enum ppl_enum_Bounded_Integer_Type_Overflow o, const ppl_const_Constraint_System_t * pcs, unsigned complexity_threshold, int wrap_individually)` [related]
- 10.8.2.90 `int ppl_delete_BD_Shape_int32_t (ppl_const_BD_Shape_int32_t_t ph)` [related]
- 10.8.2.91 `int ppl_new_BD_Shape_int32_t_from_BD_Shape_double (ppl_BD_Shape_int32_t_t * pph, ppl_const_BD_Shape_double_t ph)` [related]
- 10.8.2.92 `int ppl_new_BD_Shape_int32_t_from_BD_Shape_double_with_complexity (ppl_BD_Shape_int32_t_t * pph, ppl_const_BD_Shape_double_t ph, int complexity)` [related]
- 10.8.2.93 `int ppl_new_BD_Shape_int32_t_from_BD_Shape_float (ppl_BD_Shape_int32_t_t * pph, ppl_const_BD_Shape_float_t ph)` [related]
- 10.8.2.94 `int ppl_new_BD_Shape_int32_t_from_BD_Shape_float_with_complexity (ppl_BD_Shape_int32_t_t * pph, ppl_const_BD_Shape_float_t ph, int complexity)` [related]
- 10.8.2.95 `int ppl_new_BD_Shape_int32_t_from_BD_Shape_int16_t (ppl_BD_Shape_int32_t_t * pph, ppl_const_BD_Shape_int16_t_t ph)` [related]

- 10.8.2.96 `int ppl_new_BD_Shape_int32_t_from_BD_Shape_int16_t_with_complexity`
 (`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_BD_Shape_int16_t_t ph`, `int complexity`)
 [related]
- 10.8.2.97 `int ppl_new_BD_Shape_int32_t_from_BD_Shape_int32_t` (`ppl_BD_Shape_int32_t_t *`
`pph`, `ppl_const_BD_Shape_int32_t_t ph`) [related]
- 10.8.2.98 `int ppl_new_BD_Shape_int32_t_from_BD_Shape_int32_t_with_complexity`
 (`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_BD_Shape_int32_t_t ph`, `int complexity`)
 [related]
- 10.8.2.99 `int ppl_new_BD_Shape_int32_t_from_BD_Shape_int64_t` (`ppl_BD_Shape_int32_t_t *`
`pph`, `ppl_const_BD_Shape_int64_t_t ph`) [related]
- 10.8.2.100 `int ppl_new_BD_Shape_int32_t_from_BD_Shape_int64_t_with_complexity`
 (`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_BD_Shape_int64_t_t ph`, `int complexity`)
 [related]
- 10.8.2.101 `int ppl_new_BD_Shape_int32_t_from_BD_Shape_int8_t` (`ppl_BD_Shape_int32_t_t *`
`pph`, `ppl_const_BD_Shape_int8_t_t ph`) [related]
- 10.8.2.102 `int ppl_new_BD_Shape_int32_t_from_BD_Shape_int8_t_with_complexity`
 (`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_BD_Shape_int8_t_t ph`, `int complexity`)
 [related]
- 10.8.2.103 `int ppl_new_BD_Shape_int32_t_from_BD_Shape_long_double`
 (`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_BD_Shape_long_double_t ph`)
 [related]

- 10.8.2.104** `int ppl_new_BD_Shape_int32_t_from_BD_Shape_long_double_with_complexity`
(`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_BD_Shape_long_double_t ph`, `int complexity`) [`related`]
- 10.8.2.105** `int ppl_new_BD_Shape_int32_t_from_BD_Shape_mpq_class`
(`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_BD_Shape_mpq_class_t ph`) [`related`]
- 10.8.2.106** `int ppl_new_BD_Shape_int32_t_from_BD_Shape_mpq_class_with_complexity`
(`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_BD_Shape_mpq_class_t ph`, `int complexity`) [`related`]
- 10.8.2.107** `int ppl_new_BD_Shape_int32_t_from_BD_Shape_mpz_class` (`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_BD_Shape_mpz_class_t ph`) [`related`]
- 10.8.2.108** `int ppl_new_BD_Shape_int32_t_from_BD_Shape_mpz_class_with_complexity`
(`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_BD_Shape_mpz_class_t ph`, `int complexity`) [`related`]
- 10.8.2.109** `int ppl_new_BD_Shape_int32_t_from_C_Polyhedron` (`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_Polyhedron_t ph`) [`related`]
- 10.8.2.110** `int ppl_new_BD_Shape_int32_t_from_C_Polyhedron_with_complexity`
(`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_Polyhedron_t ph`, `int complexity`) [`related`]
- 10.8.2.111** `int ppl_new_BD_Shape_int32_t_from_Congruence_System` (`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_Congruence_System_t cs`) [`related`]
- 10.8.2.112** `int ppl_new_BD_Shape_int32_t_from_Constraint_System` (`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_Constraint_System_t cs`) [`related`]

- 10.8.2.113 `int ppl_new_BD_Shape_int32_t_from_Double_Box (ppl_BD_Shape_int32_t_t * pph,
ppl_const_Double_Box_t ph)` [**related**]
- 10.8.2.114 `int ppl_new_BD_Shape_int32_t_from_Double_Box_with_complexity
(ppl_BD_Shape_int32_t_t * pph, ppl_const_Double_Box_t ph, int complexity)`
[**related**]
- 10.8.2.115 `int ppl_new_BD_Shape_int32_t_from_Float_Box (ppl_BD_Shape_int32_t_t * pph,
ppl_const_Float_Box_t ph)` [**related**]
- 10.8.2.116 `int ppl_new_BD_Shape_int32_t_from_Float_Box_with_complexity
(ppl_BD_Shape_int32_t_t * pph, ppl_const_Float_Box_t ph, int complexity)`
[**related**]
- 10.8.2.117 `int ppl_new_BD_Shape_int32_t_from_Generator_System (ppl_BD_Shape_int32_t_t *
pph, ppl_const_Generator_System_t cs)` [**related**]
- 10.8.2.118 `int ppl_new_BD_Shape_int32_t_from_Grid (ppl_BD_Shape_int32_t_t * pph,
ppl_const_Grid_t ph)` [**related**]
- 10.8.2.119 `int ppl_new_BD_Shape_int32_t_from_Grid_with_complexity
(ppl_BD_Shape_int32_t_t * pph, ppl_const_Grid_t ph, int complexity)` [**related**]
- 10.8.2.120 `int ppl_new_BD_Shape_int32_t_from_Int16_Box (ppl_BD_Shape_int32_t_t * pph,
ppl_const_Int16_Box_t ph)` [**related**]
- 10.8.2.121 `int ppl_new_BD_Shape_int32_t_from_Int16_Box_with_complexity
(ppl_BD_Shape_int32_t_t * pph, ppl_const_Int16_Box_t ph, int complexity)`
[**related**]

- 10.8.2.122 `int ppl_new_BD_Shape_int32_t_from_Int32_Box (ppl_BD_Shape_int32_t * pph, ppl_const_Int32_Box_t ph)` `[related]`
- 10.8.2.123 `int ppl_new_BD_Shape_int32_t_from_Int32_Box_with_complexity (ppl_BD_Shape_int32_t * pph, ppl_const_Int32_Box_t ph, int complexity)` `[related]`
- 10.8.2.124 `int ppl_new_BD_Shape_int32_t_from_Int64_Box (ppl_BD_Shape_int32_t * pph, ppl_const_Int64_Box_t ph)` `[related]`
- 10.8.2.125 `int ppl_new_BD_Shape_int32_t_from_Int64_Box_with_complexity (ppl_BD_Shape_int32_t * pph, ppl_const_Int64_Box_t ph, int complexity)` `[related]`
- 10.8.2.126 `int ppl_new_BD_Shape_int32_t_from_Int8_Box (ppl_BD_Shape_int32_t * pph, ppl_const_Int8_Box_t ph)` `[related]`
- 10.8.2.127 `int ppl_new_BD_Shape_int32_t_from_Int8_Box_with_complexity (ppl_BD_Shape_int32_t * pph, ppl_const_Int8_Box_t ph, int complexity)` `[related]`
- 10.8.2.128 `int ppl_new_BD_Shape_int32_t_from_Long_Double_Box (ppl_BD_Shape_int32_t * pph, ppl_const_Long_Double_Box_t ph)` `[related]`
- 10.8.2.129 `int ppl_new_BD_Shape_int32_t_from_Long_Double_Box_with_complexity (ppl_BD_Shape_int32_t * pph, ppl_const_Long_Double_Box_t ph, int complexity)` `[related]`
- 10.8.2.130 `int ppl_new_BD_Shape_int32_t_from_NNC_Polyhedron (ppl_BD_Shape_int32_t * pph, ppl_const_Polyhedron_t ph)` `[related]`

- 10.8.2.131 `int ppl_new_BD_Shape_int32_t_from_NNC_Polyhedron_with_complexity`
 (`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_Polyhedron_t ph`, `int complexity`)
 [related]
- 10.8.2.132 `int ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_double`
 (`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_Octagonal_Shape_double_t ph`)
 [related]
- 10.8.2.133 `int ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_double_with_complexity`
 (`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_Octagonal_Shape_double_t ph`, `int complexity`) [related]
- 10.8.2.134 `int ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_float`
 (`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_Octagonal_Shape_float_t ph`)
 [related]
- 10.8.2.135 `int ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_float_with_complexity`
 (`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_Octagonal_Shape_float_t ph`, `int complexity`) [related]
- 10.8.2.136 `int ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_int16_t`
 (`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`)
 [related]
- 10.8.2.137 `int ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_int16_t_with_complexity`
 (`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`, `int complexity`) [related]
- 10.8.2.138 `int ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_int32_t`
 (`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_Octagonal_Shape_int32_t_t ph`)
 [related]

- 10.8.2.139 `int ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_int32_t_with_complexity`
(`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_Octagonal_Shape_int32_t_t ph`, `int complexity`) [`related`]
- 10.8.2.140 `int ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_int64_t`
(`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_Octagonal_Shape_int64_t_t ph`)
[`related`]
- 10.8.2.141 `int ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_int64_t_with_complexity`
(`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_Octagonal_Shape_int64_t_t ph`, `int complexity`) [`related`]
- 10.8.2.142 `int ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_int8_t`
(`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_Octagonal_Shape_int8_t_t ph`)
[`related`]
- 10.8.2.143 `int ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_int8_t_with_complexity`
(`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_Octagonal_Shape_int8_t_t ph`, `int complexity`) [`related`]
- 10.8.2.144 `int ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_long_double`
(`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_Octagonal_Shape_long_double_t_t ph`)
[`related`]
- 10.8.2.145 `int ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_-`
`long_double_with_complexity` (`ppl_BD_Shape_int32_t_t * pph`,
`ppl_const_Octagonal_Shape_long_double_t_t ph`, `int complexity`) [`related`]
- 10.8.2.146 `int ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_mpq_class`
(`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_Octagonal_Shape_mpq_class_t_t ph`)
[`related`]

- 10.8.2.147 `int ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_mpq_class_with_complexity`
 (`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_Octagonal_Shape_mpq_class_t ph`, `int complexity`) [`related`]
- 10.8.2.148 `int ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_mpz_class`
 (`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_Octagonal_Shape_mpz_class_t ph`)
 [`related`]
- 10.8.2.149 `int ppl_new_BD_Shape_int32_t_from_Octagonal_Shape_mpz_class_with_complexity`
 (`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_Octagonal_Shape_mpz_class_t ph`, `int complexity`) [`related`]
- 10.8.2.150 `int ppl_new_BD_Shape_int32_t_from_Rational_Box` (`ppl_BD_Shape_int32_t_t * pph`,
`ppl_const_Rational_Box_t ph`) [`related`]
- 10.8.2.151 `int ppl_new_BD_Shape_int32_t_from_Rational_Box_with_complexity`
 (`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_Rational_Box_t ph`, `int complexity`)
 [`related`]
- 10.8.2.152 `int ppl_new_BD_Shape_int32_t_from_space_dimension` (`ppl_BD_Shape_int32_t_t * pph`,
`ppl_dimension_type d`, `int empty`) [`related`]
- 10.8.2.153 `int ppl_new_BD_Shape_int32_t_from_Uint16_Box` (`ppl_BD_Shape_int32_t_t * pph`,
`ppl_const_Uint16_Box_t ph`) [`related`]
- 10.8.2.154 `int ppl_new_BD_Shape_int32_t_from_Uint16_Box_with_complexity`
 (`ppl_BD_Shape_int32_t_t * pph`, `ppl_const_Uint16_Box_t ph`, `int complexity`)
 [`related`]

- 10.8.2.155 `int ppl_new_BD_Shape_int32_t_from_Uint32_Box (ppl_BD_Shape_int32_t_t * pph, ppl_const_Uint32_Box_t ph)` [related]
- 10.8.2.156 `int ppl_new_BD_Shape_int32_t_from_Uint32_Box_with_complexity (ppl_BD_Shape_int32_t_t * pph, ppl_const_Uint32_Box_t ph, int complexity)` [related]
- 10.8.2.157 `int ppl_new_BD_Shape_int32_t_from_Uint64_Box (ppl_BD_Shape_int32_t_t * pph, ppl_const_Uint64_Box_t ph)` [related]
- 10.8.2.158 `int ppl_new_BD_Shape_int32_t_from_Uint64_Box_with_complexity (ppl_BD_Shape_int32_t_t * pph, ppl_const_Uint64_Box_t ph, int complexity)` [related]
- 10.8.2.159 `int ppl_new_BD_Shape_int32_t_from_Uint8_Box (ppl_BD_Shape_int32_t_t * pph, ppl_const_Uint8_Box_t ph)` [related]
- 10.8.2.160 `int ppl_new_BD_Shape_int32_t_from_Uint8_Box_with_complexity (ppl_BD_Shape_int32_t_t * pph, ppl_const_Uint8_Box_t ph, int complexity)` [related]
- 10.8.2.161 `int ppl_new_BD_Shape_int32_t_from_Z_Box (ppl_BD_Shape_int32_t_t * pph, ppl_const_Z_Box_t ph)` [related]
- 10.8.2.162 `int ppl_new_BD_Shape_int32_t_from_Z_Box_with_complexity (ppl_BD_Shape_int32_t_t * pph, ppl_const_Z_Box_t ph, int complexity)` [related]
- 10.8.2.163 `int ppl_new_BD_Shape_int32_t_recycle_Congruence_System (ppl_BD_Shape_int32_t_t * pph, ppl_Congruence_System_t cs)` [related]

- 10.8.2.164 `int ppl_new_BD_Shape_int32_t_recycle_Constraint_System (ppl_BD_Shape_int32_t_t * pph, ppl_Constraint_System_t cs)` [**related**]
- 10.8.2.165 `int ppl_new_BD_Shape_int32_t_recycle_Generator_System (ppl_BD_Shape_int32_t_t * pph, ppl_Generator_System_t cs)` [**related**]
- 10.8.2.166 `int ppl_one_affine_ranking_function_MS_BD_Shape_int32_t (ppl_const_BD_Shape_int32_t_t pset, ppl_Generator_t point)` [**related**]
- 10.8.2.167 `int ppl_one_affine_ranking_function_MS_BD_Shape_int32_t_2 (ppl_const_BD_Shape_int32_t_t pset_before, ppl_const_BD_Shape_int32_t_t pset_after, ppl_Generator_t point)` [**related**]
- 10.8.2.168 `int ppl_one_affine_ranking_function_PR_BD_Shape_int32_t (ppl_const_BD_Shape_int32_t_t pset, ppl_Generator_t point)` [**related**]
- 10.8.2.169 `int ppl_one_affine_ranking_function_PR_BD_Shape_int32_t_2 (ppl_const_BD_Shape_int32_t_t pset_before, ppl_const_BD_Shape_int32_t_t pset_after, ppl_Generator_t point)` [**related**]
- 10.8.2.170 `int ppl_termination_test_MS_BD_Shape_int32_t (ppl_const_BD_Shape_int32_t_t pset)` [**related**]
- 10.8.2.171 `int ppl_termination_test_MS_BD_Shape_int32_t_2 (ppl_const_BD_Shape_int32_t_t pset_before, ppl_const_BD_Shape_int32_t_t pset_after)` [**related**]
- 10.8.2.172 `int ppl_termination_test_PR_BD_Shape_int32_t (ppl_const_BD_Shape_int32_t_t pset)` [**related**]

10.8.2.173 `int ppl_termination_test_PR_BD_Shape_int32_t_2 (ppl_const_BD_Shape_int32_t_t pset_before, ppl_const_BD_Shape_int32_t_t pset_after)` [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.9 ppl_BD_Shape_int64_t_tag Interface Reference

Types and functions for [ppl_BD_Shape_int64_t_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_BD_Shape_int64_t (ppl_const_BD_Shape_int64_t_t ph)`
- `int ppl_new_BD_Shape_int64_t_from_space_dimension (ppl_BD_Shape_int64_t_t *pph, ppl_dimension_type d, int empty)`
- `int ppl_new_BD_Shape_int64_t_from_Int8_Box (ppl_BD_Shape_int64_t_t *pph, ppl_const_Int8_Box_t ph)`
- `int ppl_new_BD_Shape_int64_t_from_Int16_Box (ppl_BD_Shape_int64_t_t *pph, ppl_const_Int16_Box_t ph)`
- `int ppl_new_BD_Shape_int64_t_from_Int32_Box (ppl_BD_Shape_int64_t_t *pph, ppl_const_Int32_Box_t ph)`
- `int ppl_new_BD_Shape_int64_t_from_Int64_Box (ppl_BD_Shape_int64_t_t *pph, ppl_const_Int64_Box_t ph)`
- `int ppl_new_BD_Shape_int64_t_from_UInt8_Box (ppl_BD_Shape_int64_t_t *pph, ppl_const_UInt8_Box_t ph)`
- `int ppl_new_BD_Shape_int64_t_from_UInt16_Box (ppl_BD_Shape_int64_t_t *pph, ppl_const_UInt16_Box_t ph)`
- `int ppl_new_BD_Shape_int64_t_from_UInt32_Box (ppl_BD_Shape_int64_t_t *pph, ppl_const_UInt32_Box_t ph)`
- `int ppl_new_BD_Shape_int64_t_from_UInt64_Box (ppl_BD_Shape_int64_t_t *pph, ppl_const_UInt64_Box_t ph)`
- `int ppl_new_BD_Shape_int64_t_from_Z_Box (ppl_BD_Shape_int64_t_t *pph, ppl_const_Z_Box_t ph)`
- `int ppl_new_BD_Shape_int64_t_from_Rational_Box (ppl_BD_Shape_int64_t_t *pph, ppl_const_Rational_Box_t ph)`
- `int ppl_new_BD_Shape_int64_t_from_BD_Shape_int8_t (ppl_BD_Shape_int64_t_t *pph, ppl_const_BD_Shape_int8_t_t ph)`
- `int ppl_new_BD_Shape_int64_t_from_BD_Shape_int16_t (ppl_BD_Shape_int64_t_t *pph, ppl_const_BD_Shape_int16_t_t ph)`
- `int ppl_new_BD_Shape_int64_t_from_BD_Shape_int32_t (ppl_BD_Shape_int64_t_t *pph, ppl_const_BD_Shape_int32_t_t ph)`
- `int ppl_new_BD_Shape_int64_t_from_BD_Shape_int64_t (ppl_BD_Shape_int64_t_t *pph, ppl_const_BD_Shape_int64_t_t ph)`
- `int ppl_new_BD_Shape_int64_t_from_BD_Shape_mpz_class (ppl_BD_Shape_int64_t_t *pph, ppl_const_BD_Shape_mpz_class_t ph)`

- `int ppl_new_BD_Shape_int64_t_from_BD_Shape_mpq_class` (`ppl_BD_Shape_int64_t_t *pph`, `ppl_const_BD_Shape_mpq_class_t ph`)
- `int ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_int8_t` (`ppl_BD_Shape_int64_t_t *pph`, `ppl_const_Octagonal_Shape_int8_t_t ph`)
- `int ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_int16_t` (`ppl_BD_Shape_int64_t_t *pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`)
- `int ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_int32_t` (`ppl_BD_Shape_int64_t_t *pph`, `ppl_const_Octagonal_Shape_int32_t_t ph`)
- `int ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_int64_t` (`ppl_BD_Shape_int64_t_t *pph`, `ppl_const_Octagonal_Shape_int64_t_t ph`)
- `int ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_mpz_class` (`ppl_BD_Shape_int64_t_t *pph`, `ppl_const_Octagonal_Shape_mpz_class_t ph`)
- `int ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_mpq_class` (`ppl_BD_Shape_int64_t_t *pph`, `ppl_const_Octagonal_Shape_mpq_class_t ph`)
- `int ppl_new_BD_Shape_int64_t_from_C_Polyhedron` (`ppl_BD_Shape_int64_t_t *pph`, `ppl_const_C_Polyhedron_t ph`)
- `int ppl_new_BD_Shape_int64_t_from_NNC_Polyhedron` (`ppl_BD_Shape_int64_t_t *pph`, `ppl_const_NNC_Polyhedron_t ph`)
- `int ppl_new_BD_Shape_int64_t_from_Grid` (`ppl_BD_Shape_int64_t_t *pph`, `ppl_const_Grid_t ph`)
- `int ppl_new_BD_Shape_int64_t_from_Float_Box` (`ppl_BD_Shape_int64_t_t *pph`, `ppl_const_Float_Box_t ph`)
- `int ppl_new_BD_Shape_int64_t_from_BD_Shape_float` (`ppl_BD_Shape_int64_t_t *pph`, `ppl_const_BD_Shape_float_t ph`)
- `int ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_float` (`ppl_BD_Shape_int64_t_t *pph`, `ppl_const_Octagonal_Shape_float_t ph`)
- `int ppl_new_BD_Shape_int64_t_from_Double_Box` (`ppl_BD_Shape_int64_t_t *pph`, `ppl_const_Double_Box_t ph`)
- `int ppl_new_BD_Shape_int64_t_from_BD_Shape_double` (`ppl_BD_Shape_int64_t_t *pph`, `ppl_const_BD_Shape_double_t ph`)
- `int ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_double` (`ppl_BD_Shape_int64_t_t *pph`, `ppl_const_Octagonal_Shape_double_t ph`)
- `int ppl_new_BD_Shape_int64_t_from_Long_Double_Box` (`ppl_BD_Shape_int64_t_t *pph`, `ppl_const_Long_Double_Box_t ph`)
- `int ppl_new_BD_Shape_int64_t_from_BD_Shape_long_double` (`ppl_BD_Shape_int64_t_t *pph`, `ppl_const_BD_Shape_long_double_t ph`)
- `int ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_long_double` (`ppl_BD_Shape_int64_t_t *pph`, `ppl_const_Octagonal_Shape_long_double_t ph`)
- `int ppl_new_BD_Shape_int64_t_from_Int8_Box_with_complexity` (`ppl_BD_Shape_int64_t_t *pph`, `ppl_const_Int8_Box_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_int64_t_from_Int16_Box_with_complexity` (`ppl_BD_Shape_int64_t_t *pph`, `ppl_const_Int16_Box_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_int64_t_from_Int32_Box_with_complexity` (`ppl_BD_Shape_int64_t_t *pph`, `ppl_const_Int32_Box_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_int64_t_from_Int64_Box_with_complexity` (`ppl_BD_Shape_int64_t_t *pph`, `ppl_const_Int64_Box_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_int64_t_from_Uint8_Box_with_complexity` (`ppl_BD_Shape_int64_t_t *pph`, `ppl_const_Uint8_Box_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_int64_t_from_Uint16_Box_with_complexity` (`ppl_BD_Shape_int64_t_t *pph`, `ppl_const_Uint16_Box_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_int64_t_from_Uint32_Box_with_complexity` (`ppl_BD_Shape_int64_t_t *pph`, `ppl_const_Uint32_Box_t ph`, `int complexity`)

- int [ppl_new_BD_Shape_int64_t_from_Uint64_Box_with_complexity](#) (ppl_BD_Shape_int64_t_t *pph, ppl_const_Uint64_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_int64_t_from_Z_Box_with_complexity](#) (ppl_BD_Shape_int64_t_t *pph, ppl_const_Z_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_int64_t_from_Rational_Box_with_complexity](#) (ppl_BD_Shape_int64_t_t *pph, ppl_const_Rational_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_int64_t_from_BD_Shape_int8_t_with_complexity](#) (ppl_BD_Shape_int64_t_t *pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)
- int [ppl_new_BD_Shape_int64_t_from_BD_Shape_int16_t_with_complexity](#) (ppl_BD_Shape_int64_t_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)
- int [ppl_new_BD_Shape_int64_t_from_BD_Shape_int32_t_with_complexity](#) (ppl_BD_Shape_int64_t_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)
- int [ppl_new_BD_Shape_int64_t_from_BD_Shape_int64_t_with_complexity](#) (ppl_BD_Shape_int64_t_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)
- int [ppl_new_BD_Shape_int64_t_from_BD_Shape_mpz_class_with_complexity](#) (ppl_BD_Shape_int64_t_t *pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_BD_Shape_int64_t_from_BD_Shape_mpq_class_with_complexity](#) (ppl_BD_Shape_int64_t_t *pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_int8_t_with_complexity](#) (ppl_BD_Shape_int64_t_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)
- int [ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_int16_t_with_complexity](#) (ppl_BD_Shape_int64_t_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)
- int [ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_int32_t_with_complexity](#) (ppl_BD_Shape_int64_t_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)
- int [ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_int64_t_with_complexity](#) (ppl_BD_Shape_int64_t_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)
- int [ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_mpz_class_with_complexity](#) (ppl_BD_Shape_int64_t_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_mpq_class_with_complexity](#) (ppl_BD_Shape_int64_t_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_BD_Shape_int64_t_from_C_Polyhedron_with_complexity](#) (ppl_BD_Shape_int64_t_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_BD_Shape_int64_t_from_NNC_Polyhedron_with_complexity](#) (ppl_BD_Shape_int64_t_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_BD_Shape_int64_t_from_Grid_with_complexity](#) (ppl_BD_Shape_int64_t_t *pph, ppl_const_Grid_t ph, int complexity)
- int [ppl_new_BD_Shape_int64_t_from_Float_Box_with_complexity](#) (ppl_BD_Shape_int64_t_t *pph, ppl_const_Float_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_int64_t_from_BD_Shape_float_with_complexity](#) (ppl_BD_Shape_int64_t_t *pph, ppl_const_BD_Shape_float_t ph, int complexity)
- int [ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_float_with_complexity](#) (ppl_BD_Shape_int64_t_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)
- int [ppl_new_BD_Shape_int64_t_from_Double_Box_with_complexity](#) (ppl_BD_Shape_int64_t_t *pph, ppl_const_Double_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_int64_t_from_BD_Shape_double_with_complexity](#) (ppl_BD_Shape_int64_t_t *pph, ppl_const_BD_Shape_double_t ph, int complexity)
- int [ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_double_with_complexity](#) (ppl_BD_Shape_int64_t_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)
- int [ppl_new_BD_Shape_int64_t_from_Long_Double_Box_with_complexity](#) (ppl_BD_Shape_int64_t_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_int64_t_from_BD_Shape_long_double_with_complexity](#) (ppl_BD_Shape_int64_t_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity)

- `int ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_long_double_with_complexity` (`ppl_-BD_Shape_int64_t_t *pph`, `ppl_const_Octagonal_Shape_long_double_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_int64_t_from_Constraint_System` (`ppl_BD_Shape_int64_t_t *pph`, `ppl_-const_Constraint_System_t cs`)
- `int ppl_new_BD_Shape_int64_t_from_Congruence_System` (`ppl_BD_Shape_int64_t_t *pph`, `ppl_-const_Congruence_System_t cs`)
- `int ppl_new_BD_Shape_int64_t_from_Generator_System` (`ppl_BD_Shape_int64_t_t *pph`, `ppl_-const_Generator_System_t cs`)
- `int ppl_BD_Shape_int64_t_space_dimension` (`ppl_const_BD_Shape_int64_t_t ph`, `ppl_dimension_-type *m`)
- `int ppl_BD_Shape_int64_t_affine_dimension` (`ppl_const_BD_Shape_int64_t_t ph`, `ppl_dimension_-type *m`)
- `int ppl_BD_Shape_int64_t_relation_with_Constraint` (`ppl_const_BD_Shape_int64_t_t ph`, `ppl_-const_Constraint_t c`)
- `int ppl_BD_Shape_int64_t_relation_with_Generator` (`ppl_const_BD_Shape_int64_t_t ph`, `ppl_-const_Generator_t c`)
- `int ppl_BD_Shape_int64_t_relation_with_Congruence` (`ppl_const_BD_Shape_int64_t_t ph`, `ppl_-const_Congruence_t c`)
- `int ppl_BD_Shape_int64_t_get_constraints` (`ppl_const_BD_Shape_int64_t_t ph`, `ppl_const_-Constraint_System_t *pcs`)
- `int ppl_BD_Shape_int64_t_get_congruences` (`ppl_const_BD_Shape_int64_t_t ph`, `ppl_const_-Congruence_System_t *pcs`)
- `int ppl_BD_Shape_int64_t_get_minimized_constraints` (`ppl_const_BD_Shape_int64_t_t ph`, `ppl_-const_Constraint_System_t *pcs`)
- `int ppl_BD_Shape_int64_t_get_minimized_congruences` (`ppl_const_BD_Shape_int64_t_t ph`, `ppl_-const_Congruence_System_t *pcs`)
- `int ppl_BD_Shape_int64_t_is_empty` (`ppl_const_BD_Shape_int64_t_t ph`)
- `int ppl_BD_Shape_int64_t_is_universe` (`ppl_const_BD_Shape_int64_t_t ph`)
- `int ppl_BD_Shape_int64_t_is_bounded` (`ppl_const_BD_Shape_int64_t_t ph`)
- `int ppl_BD_Shape_int64_t_contains_integer_point` (`ppl_const_BD_Shape_int64_t_t ph`)
- `int ppl_BD_Shape_int64_t_is_topologically_closed` (`ppl_const_BD_Shape_int64_t_t ph`)
- `int ppl_BD_Shape_int64_t_is_discrete` (`ppl_const_BD_Shape_int64_t_t ph`)
- `int ppl_BD_Shape_int64_t_topological_closure_assign` (`ppl_BD_Shape_int64_t_t ph`)
- `int ppl_BD_Shape_int64_t_bounds_from_above` (`ppl_const_BD_Shape_int64_t_t ph`, `ppl_const_-Linear_Expression_t le`)
- `int ppl_BD_Shape_int64_t_bounds_from_below` (`ppl_const_BD_Shape_int64_t_t ph`, `ppl_const_-Linear_Expression_t le`)
- `int ppl_BD_Shape_int64_t_maximize` (`ppl_const_BD_Shape_int64_t_t ph`, `ppl_const_Linear_-Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int *poptimum`)
- `int ppl_BD_Shape_int64_t_minimize` (`ppl_const_BD_Shape_int64_t_t ph`, `ppl_const_Linear_-Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int *poptimum`)
- `int ppl_BD_Shape_int64_t_maximize_with_point` (`ppl_const_BD_Shape_int64_t_t ph`, `ppl_const_-Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int *poptimum`, `ppl_-Generator_t point`)
- `int ppl_BD_Shape_int64_t_minimize_with_point` (`ppl_const_BD_Shape_int64_t_t ph`, `ppl_const_-Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int *poptimum`, `ppl_-Generator_t point`)
- `int ppl_BD_Shape_int64_t_frequency` (`ppl_const_BD_Shape_int64_t_t ph`, `ppl_const_Linear_-Expression_t le`, `ppl_Coefficient_t ext_fn`, `ppl_Coefficient_t ext_fd`, `ppl_Coefficient_t ext_vn`, `ppl_-Coefficient_t ext_vd`)
- `int ppl_BD_Shape_int64_t_contains_BD_Shape_int64_t` (`ppl_const_BD_Shape_int64_t_t x`, `ppl_-const_BD_Shape_int64_t_t y`)

- int [ppl_BD_Shape_int64_t_strictly_contains_BD_Shape_int64_t](#) (ppl_const_BD_Shape_int64_t_t x, ppl_const_BD_Shape_int64_t_t y)
- int [ppl_BD_Shape_int64_t_is_disjoint_from_BD_Shape_int64_t](#) (ppl_const_BD_Shape_int64_t_t x, ppl_const_BD_Shape_int64_t_t y)
- int [ppl_BD_Shape_int64_t_equals_BD_Shape_int64_t](#) (ppl_const_BD_Shape_int64_t_t x, ppl_const_BD_Shape_int64_t_t y)
- int [ppl_BD_Shape_int64_t_OK](#) (ppl_const_BD_Shape_int64_t_t ph)
- int [ppl_BD_Shape_int64_t_add_constraint](#) (ppl_BD_Shape_int64_t_t ph, ppl_const_Constraint_t c)
- int [ppl_BD_Shape_int64_t_add_congruence](#) (ppl_BD_Shape_int64_t_t ph, ppl_const_Congruence_t c)
- int [ppl_BD_Shape_int64_t_add_constraints](#) (ppl_BD_Shape_int64_t_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_BD_Shape_int64_t_add_congruences](#) (ppl_BD_Shape_int64_t_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_BD_Shape_int64_t_refine_with_constraint](#) (ppl_BD_Shape_int64_t_t ph, ppl_const_Constraint_t c)
- int [ppl_BD_Shape_int64_t_refine_with_congruence](#) (ppl_BD_Shape_int64_t_t ph, ppl_const_Congruence_t c)
- int [ppl_BD_Shape_int64_t_refine_with_constraints](#) (ppl_BD_Shape_int64_t_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_BD_Shape_int64_t_refine_with_congruences](#) (ppl_BD_Shape_int64_t_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_BD_Shape_int64_t_intersection_assign](#) (ppl_BD_Shape_int64_t_t x, ppl_const_BD_Shape_int64_t_t y)
- int [ppl_BD_Shape_int64_t_upper_bound_assign](#) (ppl_BD_Shape_int64_t_t x, ppl_const_BD_Shape_int64_t_t y)
- int [ppl_BD_Shape_int64_t_difference_assign](#) (ppl_BD_Shape_int64_t_t x, ppl_const_BD_Shape_int64_t_t y)
- int [ppl_BD_Shape_int64_t_concatenate_assign](#) (ppl_BD_Shape_int64_t_t x, ppl_const_BD_Shape_int64_t_t y)
- int [ppl_BD_Shape_int64_t_time_elapse_assign](#) (ppl_BD_Shape_int64_t_t x, ppl_const_BD_Shape_int64_t_t y)
- int [ppl_BD_Shape_int64_t_upper_bound_assign_if_exact](#) (ppl_BD_Shape_int64_t_t x, ppl_const_BD_Shape_int64_t_t y)
- int [ppl_BD_Shape_int64_t_simplify_using_context_assign](#) (ppl_BD_Shape_int64_t_t x, ppl_const_BD_Shape_int64_t_t y)
- int [ppl_BD_Shape_int64_t_constrains](#) (ppl_BD_Shape_int64_t_t ph, [ppl_dimension_type](#) var)
- int [ppl_BD_Shape_int64_t_unconstrain_space_dimension](#) (ppl_BD_Shape_int64_t_t ph, [ppl_dimension_type](#) var)
- int [ppl_BD_Shape_int64_t_unconstrain_space_dimensions](#) (ppl_BD_Shape_int64_t_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_BD_Shape_int64_t_affine_image](#) (ppl_BD_Shape_int64_t_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_BD_Shape_int64_t_affine_preimage](#) (ppl_BD_Shape_int64_t_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_BD_Shape_int64_t_bounded_affine_image](#) (ppl_BD_Shape_int64_t_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_BD_Shape_int64_t_bounded_affine_preimage](#) (ppl_BD_Shape_int64_t_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)

- `int ppl_BD_Shape_int64_t_generalized_affine_image` (`ppl_BD_Shape_int64_t_t` ph, `ppl_dimension_type` var, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- `int ppl_BD_Shape_int64_t_generalized_affine_preimage` (`ppl_BD_Shape_int64_t_t` ph, `ppl_dimension_type` var, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- `int ppl_BD_Shape_int64_t_generalized_affine_image_lhs_rhs` (`ppl_BD_Shape_int64_t_t` ph, `ppl_const_Linear_Expression_t` lhs, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` rhs)
- `int ppl_BD_Shape_int64_t_generalized_affine_preimage_lhs_rhs` (`ppl_BD_Shape_int64_t_t` ph, `ppl_const_Linear_Expression_t` lhs, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` rhs)
- `int ppl_BD_Shape_int64_t_add_space_dimensions_and_embed` (`ppl_BD_Shape_int64_t_t` ph, `ppl_dimension_type` d)
- `int ppl_BD_Shape_int64_t_add_space_dimensions_and_project` (`ppl_BD_Shape_int64_t_t` ph, `ppl_dimension_type` d)
- `int ppl_BD_Shape_int64_t_remove_space_dimensions` (`ppl_BD_Shape_int64_t_t` ph, `ppl_dimension_type` ds[], `size_t` n)
- `int ppl_BD_Shape_int64_t_remove_higher_space_dimensions` (`ppl_BD_Shape_int64_t_t` ph, `ppl_dimension_type` d)
- `int ppl_BD_Shape_int64_t_expand_space_dimension` (`ppl_BD_Shape_int64_t_t` ph, `ppl_dimension_type` d, `ppl_dimension_type` m)
- `int ppl_BD_Shape_int64_t_fold_space_dimensions` (`ppl_BD_Shape_int64_t_t` ph, `ppl_dimension_type` ds[], `size_t` n, `ppl_dimension_type` d)
- `int ppl_BD_Shape_int64_t_map_space_dimensions` (`ppl_BD_Shape_int64_t_t` ph, `ppl_dimension_type` maps[], `size_t` n)
- `int ppl_BD_Shape_int64_t_drop_some_non_integer_points` (`ppl_BD_Shape_int64_t_t` ph, `int` complexity)
- `int ppl_BD_Shape_int64_t_drop_some_non_integer_points_2` (`ppl_BD_Shape_int64_t_t` ph, `ppl_dimension_type` ds[], `size_t` n, `int` complexity)
- `int ppl_BD_Shape_int64_t_external_memory_in_bytes` (`ppl_const_BD_Shape_int64_t_t` ps, `size_t` *sz)
- `int ppl_BD_Shape_int64_t_total_memory_in_bytes` (`ppl_const_BD_Shape_int64_t_t` ps, `size_t` *sz)
- `int ppl_BD_Shape_int64_t_BHMZ05_widening_assign_with_tokens` (`ppl_BD_Shape_int64_t_t` x, `ppl_const_BD_Shape_int64_t_t` y, `unsigned` *tp)
- `int ppl_BD_Shape_int64_t_H79_widening_assign_with_tokens` (`ppl_BD_Shape_int64_t_t` x, `ppl_const_BD_Shape_int64_t_t` y, `unsigned` *tp)
- `int ppl_BD_Shape_int64_t_BHMZ05_widening_assign` (`ppl_BD_Shape_int64_t_t` x, `ppl_const_BD_Shape_int64_t_t` y)
- `int ppl_BD_Shape_int64_t_H79_widening_assign` (`ppl_BD_Shape_int64_t_t` x, `ppl_const_BD_Shape_int64_t_t` y)
- `int ppl_BD_Shape_int64_t_widening_assign_with_tokens` (`ppl_BD_Shape_int64_t_t` x, `ppl_const_BD_Shape_int64_t_t` y, `unsigned` *tp)
- `int ppl_BD_Shape_int64_t_widening_assign` (`ppl_BD_Shape_int64_t_t` x, `ppl_const_BD_Shape_int64_t_t` y)
- `int ppl_BD_Shape_int64_t_limited_BHMZ05_extrapolation_assign_with_tokens` (`ppl_BD_Shape_int64_t_t` x, `ppl_const_BD_Shape_int64_t_t` y, `ppl_const_Constraint_System_t` cs, `unsigned` *tp)
- `int ppl_BD_Shape_int64_t_limited_H79_extrapolation_assign_with_tokens` (`ppl_BD_Shape_int64_t_t` x, `ppl_const_BD_Shape_int64_t_t` y, `ppl_const_Constraint_System_t` cs, `unsigned` *tp)

- `int ppl_BD_Shape_int64_t_limited_CC76_extrapolation_assign_with_tokens` (`ppl_BD_Shape_int64_t_t x`, `ppl_const_BD_Shape_int64_t_t y`, `ppl_const_Constraint_System_t cs`, unsigned `*tp`)
- `int ppl_BD_Shape_int64_t_limited_BHMZ05_extrapolation_assign` (`ppl_BD_Shape_int64_t_t x`, `ppl_const_BD_Shape_int64_t_t y`, `ppl_const_Constraint_System_t cs`)
- `int ppl_BD_Shape_int64_t_limited_H79_extrapolation_assign` (`ppl_BD_Shape_int64_t_t x`, `ppl_const_BD_Shape_int64_t_t y`, `ppl_const_Constraint_System_t cs`)
- `int ppl_BD_Shape_int64_t_limited_CC76_extrapolation_assign` (`ppl_BD_Shape_int64_t_t x`, `ppl_const_BD_Shape_int64_t_t y`, `ppl_const_Constraint_System_t cs`)
- `int ppl_BD_Shape_int64_t_CC76_extrapolation_assign_with_tokens` (`ppl_BD_Shape_int64_t_t x`, `ppl_const_BD_Shape_int64_t_t y`, unsigned `*tp`)
- `int ppl_BD_Shape_int64_t_CC76_extrapolation_assign` (`ppl_BD_Shape_int64_t_t x`, `ppl_const_BD_Shape_int64_t_t y`)
- `int ppl_BD_Shape_int64_t_CC76_narrowing_assign` (`ppl_BD_Shape_int64_t_t x`, `ppl_const_BD_Shape_int64_t_t y`)
- `int ppl_BD_Shape_int64_t_linear_partition` (`ppl_const_BD_Shape_int64_t_t x`, `ppl_const_BD_Shape_int64_t_t y`, `ppl_BD_Shape_int64_t_t *p_inters`, `ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest`)
- `int ppl_BD_Shape_int64_t_wrap_assign` (`ppl_BD_Shape_int64_t_t ph`, `ppl_dimension_type ds[]`, `size_t n`, `enum ppl_enum_Bounded_Integer_Type_Width w`, `enum ppl_enum_Bounded_Integer_Type_Representation r`, `enum ppl_enum_Bounded_Integer_Type_Overflow o`, `const ppl_const_Constraint_System_t *pcs`, unsigned `complexity_threshold`, `int wrap_individually`)
- `int ppl_new_BD_Shape_int64_t_recycle_Constraint_System` (`ppl_BD_Shape_int64_t_t *pph`, `ppl_Constraint_System_t cs`)
- `int ppl_new_BD_Shape_int64_t_recycle_Congruence_System` (`ppl_BD_Shape_int64_t_t *pph`, `ppl_Congruence_System_t cs`)
- `int ppl_new_BD_Shape_int64_t_recycle_Generator_System` (`ppl_BD_Shape_int64_t_t *pph`, `ppl_Generator_System_t cs`)
- `int ppl_assign_BD_Shape_int64_t_from_BD_Shape_int64_t` (`ppl_BD_Shape_int64_t_t dst`, `ppl_const_BD_Shape_int64_t_t src`)
- `int ppl_BD_Shape_int64_t_add_recycled_constraints` (`ppl_BD_Shape_int64_t_t ph`, `ppl_Constraint_System_t cs`)
- `int ppl_BD_Shape_int64_t_add_recycled_congruences` (`ppl_BD_Shape_int64_t_t ph`, `ppl_Congruence_System_t cs`)
- `int ppl_termination_test_MS_BD_Shape_int64_t` (`ppl_const_BD_Shape_int64_t_t pset`)
- `int ppl_termination_test_PR_BD_Shape_int64_t` (`ppl_const_BD_Shape_int64_t_t pset`)
- `int ppl_one_affine_ranking_function_MS_BD_Shape_int64_t` (`ppl_const_BD_Shape_int64_t_t pset`, `ppl_Generator_t point`)
- `int ppl_one_affine_ranking_function_PR_BD_Shape_int64_t` (`ppl_const_BD_Shape_int64_t_t pset`, `ppl_Generator_t point`)
- `int ppl_all_affine_ranking_functions_MS_BD_Shape_int64_t` (`ppl_const_BD_Shape_int64_t_t pset`, `ppl_Polyhedron_t ph`)
- `int ppl_all_affine_ranking_functions_PR_BD_Shape_int64_t` (`ppl_const_BD_Shape_int64_t_t pset`, `ppl_Polyhedron_t ph`)
- `int ppl_termination_test_MS_BD_Shape_int64_t_2` (`ppl_const_BD_Shape_int64_t_t pset_before`, `ppl_const_BD_Shape_int64_t_t pset_after`)
- `int ppl_termination_test_PR_BD_Shape_int64_t_2` (`ppl_const_BD_Shape_int64_t_t pset_before`, `ppl_const_BD_Shape_int64_t_t pset_after`)
- `int ppl_one_affine_ranking_function_MS_BD_Shape_int64_t_2` (`ppl_const_BD_Shape_int64_t_t pset_before`, `ppl_const_BD_Shape_int64_t_t pset_after`, `ppl_Generator_t point`)
- `int ppl_one_affine_ranking_function_PR_BD_Shape_int64_t_2` (`ppl_const_BD_Shape_int64_t_t pset_before`, `ppl_const_BD_Shape_int64_t_t pset_after`, `ppl_Generator_t point`)

- int [ppl_all_affine_ranking_functions_MS_BD_Shape_int64_t_2](#) (ppl_const_BD_Shape_int64_t_t pset_before, ppl_const_BD_Shape_int64_t_t pset_after, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_BD_Shape_int64_t_2](#) (ppl_const_BD_Shape_int64_t_t pset_before, ppl_const_BD_Shape_int64_t_t pset_after, ppl_Polyhedron_t ph)

10.9.1 Detailed Description

Types and functions for [ppl_BD_Shape_int64_t_tag](#).

10.9.2 Friends And Related Function Documentation

- 10.9.2.1** int [ppl_all_affine_ranking_functions_MS_BD_Shape_int64_t](#) (ppl_const_BD_Shape_int64_t_t pset, ppl_Polyhedron_t ph) [[related](#)]
- 10.9.2.2** int [ppl_all_affine_ranking_functions_MS_BD_Shape_int64_t_2](#) (ppl_const_BD_Shape_int64_t_t pset_before, ppl_const_BD_Shape_int64_t_t pset_after, ppl_Polyhedron_t ph) [[related](#)]
- 10.9.2.3** int [ppl_all_affine_ranking_functions_PR_BD_Shape_int64_t](#) (ppl_const_BD_Shape_int64_t_t pset, ppl_Polyhedron_t ph) [[related](#)]
- 10.9.2.4** int [ppl_all_affine_ranking_functions_PR_BD_Shape_int64_t_2](#) (ppl_const_BD_Shape_int64_t_t pset_before, ppl_const_BD_Shape_int64_t_t pset_after, ppl_Polyhedron_t ph) [[related](#)]
- 10.9.2.5** int [ppl_assign_BD_Shape_int64_t_from_BD_Shape_int64_t](#) (ppl_BD_Shape_int64_t_t dst, ppl_const_BD_Shape_int64_t_t src) [[related](#)]
- 10.9.2.6** int [ppl_BD_Shape_int64_t_add_congruence](#) (ppl_BD_Shape_int64_t_t ph, ppl_const_Congruence_t c) [[related](#)]
- 10.9.2.7** int [ppl_BD_Shape_int64_t_add_congruences](#) (ppl_BD_Shape_int64_t_t ph, ppl_const_Congruence_System_t cs) [[related](#)]

- 10.9.2.8 `int ppl_BD_Shape_int64_t_add_constraint (ppl_BD_Shape_int64_t_t ph,
ppl_const_Constraint_t c)` [**related**]
- 10.9.2.9 `int ppl_BD_Shape_int64_t_add_constraints (ppl_BD_Shape_int64_t_t ph,
ppl_const_Constraint_System_t cs)` [**related**]
- 10.9.2.10 `int ppl_BD_Shape_int64_t_add_recycled_congruences (ppl_BD_Shape_int64_t_t ph,
ppl_Congruence_System_t cs)` [**related**]
- 10.9.2.11 `int ppl_BD_Shape_int64_t_add_recycled_constraints (ppl_BD_Shape_int64_t_t ph,
ppl_Constraint_System_t cs)` [**related**]
- 10.9.2.12 `int ppl_BD_Shape_int64_t_add_space_dimensions_and_embed
(ppl_BD_Shape_int64_t_t ph, ppl_dimension_type d)` [**related**]
- 10.9.2.13 `int ppl_BD_Shape_int64_t_add_space_dimensions_and_project
(ppl_BD_Shape_int64_t_t ph, ppl_dimension_type d)` [**related**]
- 10.9.2.14 `int ppl_BD_Shape_int64_t_affine_dimension (ppl_const_BD_Shape_int64_t_t ph,
ppl_dimension_type * m)` [**related**]
- 10.9.2.15 `int ppl_BD_Shape_int64_t_affine_image (ppl_BD_Shape_int64_t_t ph,
ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)`
[**related**]
- 10.9.2.16 `int ppl_BD_Shape_int64_t_affine_preimage (ppl_BD_Shape_int64_t_t ph,
ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)`
[**related**]

- 10.9.2.17 `int ppl_BD_Shape_int64_t_BHMZ05_widening_assign (ppl_BD_Shape_int64_t_t x, ppl_const_BD_Shape_int64_t_t y) [related]`
- 10.9.2.18 `int ppl_BD_Shape_int64_t_BHMZ05_widening_assign_with_tokens (ppl_BD_Shape_int64_t_t x, ppl_const_BD_Shape_int64_t_t y, unsigned * tp) [related]`
- 10.9.2.19 `int ppl_BD_Shape_int64_t_bounded_affine_image (ppl_BD_Shape_int64_t_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d) [related]`
- 10.9.2.20 `int ppl_BD_Shape_int64_t_bounded_affine_preimage (ppl_BD_Shape_int64_t_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d) [related]`
- 10.9.2.21 `int ppl_BD_Shape_int64_t_bounds_from_above (ppl_const_BD_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le) [related]`
- 10.9.2.22 `int ppl_BD_Shape_int64_t_bounds_from_below (ppl_const_BD_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le) [related]`
- 10.9.2.23 `int ppl_BD_Shape_int64_t_CC76_extrapolation_assign (ppl_BD_Shape_int64_t_t x, ppl_const_BD_Shape_int64_t_t y) [related]`
- 10.9.2.24 `int ppl_BD_Shape_int64_t_CC76_extrapolation_assign_with_tokens (ppl_BD_Shape_int64_t_t x, ppl_const_BD_Shape_int64_t_t y, unsigned * tp) [related]`
- 10.9.2.25 `int ppl_BD_Shape_int64_t_CC76_narrowing_assign (ppl_BD_Shape_int64_t_t x, ppl_const_BD_Shape_int64_t_t y) [related]`

- 10.9.2.26 `int ppl_BD_Shape_int64_t_concatenate_assign (ppl_BD_Shape_int64_t_t x, ppl_const_BD_Shape_int64_t_t y)` [*related*]
- 10.9.2.27 `int ppl_BD_Shape_int64_t_constrains (ppl_BD_Shape_int64_t_t ph, ppl_dimension_type var)` [*related*]
- 10.9.2.28 `int ppl_BD_Shape_int64_t_contains_BD_Shape_int64_t (ppl_const_BD_Shape_int64_t_t x, ppl_const_BD_Shape_int64_t_t y)` [*related*]
- 10.9.2.29 `int ppl_BD_Shape_int64_t_contains_integer_point (ppl_const_BD_Shape_int64_t_t ph)` [*related*]
- 10.9.2.30 `int ppl_BD_Shape_int64_t_difference_assign (ppl_BD_Shape_int64_t_t x, ppl_const_BD_Shape_int64_t_t y)` [*related*]
- 10.9.2.31 `int ppl_BD_Shape_int64_t_drop_some_non_integer_points (ppl_BD_Shape_int64_t_t ph, int complexity)` [*related*]
- 10.9.2.32 `int ppl_BD_Shape_int64_t_drop_some_non_integer_points_2 (ppl_BD_Shape_int64_t_t ph, ppl_dimension_type ds[], size_t n, int complexity)` [*related*]
- 10.9.2.33 `int ppl_BD_Shape_int64_t_equals_BD_Shape_int64_t (ppl_const_BD_Shape_int64_t_t x, ppl_const_BD_Shape_int64_t_t y)` [*related*]
- 10.9.2.34 `int ppl_BD_Shape_int64_t_expand_space_dimension (ppl_BD_Shape_int64_t_t ph, ppl_dimension_type d, ppl_dimension_type m)` [*related*]

- 10.9.2.35 `int ppl_BD_Shape_int64_t_external_memory_in_bytes (ppl_const_BD_Shape_int64_t_t ps, size_t * sz)` [**related**]
- 10.9.2.36 `int ppl_BD_Shape_int64_t_fold_space_dimensions (ppl_BD_Shape_int64_t_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [**related**]
- 10.9.2.37 `int ppl_BD_Shape_int64_t_frequency (ppl_const_BD_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)` [**related**]
- 10.9.2.38 `int ppl_BD_Shape_int64_t_generalized_affine_image (ppl_BD_Shape_int64_t_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.9.2.39 `int ppl_BD_Shape_int64_t_generalized_affine_image_lhs_rhs (ppl_BD_Shape_int64_t_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` [**related**]
- 10.9.2.40 `int ppl_BD_Shape_int64_t_generalized_affine_preimage (ppl_BD_Shape_int64_t_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.9.2.41 `int ppl_BD_Shape_int64_t_generalized_affine_preimage_lhs_rhs (ppl_BD_Shape_int64_t_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` [**related**]
- 10.9.2.42 `int ppl_BD_Shape_int64_t_get_congruences (ppl_const_BD_Shape_int64_t_t ph, ppl_const_Congruence_System_t * pcs)` [**related**]

- 10.9.2.43 `int ppl_BD_Shape_int64_t_get_constraints (ppl_const_BD_Shape_int64_t_t ph,
ppl_const_Constraint_System_t * pcs)` [**related**]
- 10.9.2.44 `int ppl_BD_Shape_int64_t_get_minimized_congruences (ppl_const_
BD_Shape_int64_t_t ph, ppl_const_Congruence_System_t * pcs)`
[**related**]
- 10.9.2.45 `int ppl_BD_Shape_int64_t_get_minimized_constraints (ppl_const_BD_Shape_int64_t_t
ph, ppl_const_Constraint_System_t * pcs)` [**related**]
- 10.9.2.46 `int ppl_BD_Shape_int64_t_H79_widening_assign (ppl_BD_Shape_int64_t_t x,
ppl_const_BD_Shape_int64_t_t y)` [**related**]
- 10.9.2.47 `int ppl_BD_Shape_int64_t_H79_widening_assign_with_tokens
(ppl_BD_Shape_int64_t_t x, ppl_const_BD_Shape_int64_t_t y, unsigned * tp)`
[**related**]
- 10.9.2.48 `int ppl_BD_Shape_int64_t_intersection_assign (ppl_BD_Shape_int64_t_t x,
ppl_const_BD_Shape_int64_t_t y)` [**related**]
- 10.9.2.49 `int ppl_BD_Shape_int64_t_is_bounded (ppl_const_BD_Shape_int64_t_t ph)`
[**related**]
- 10.9.2.50 `int ppl_BD_Shape_int64_t_is_discrete (ppl_const_BD_Shape_int64_t_t ph)`
[**related**]
- 10.9.2.51 `int ppl_BD_Shape_int64_t_is_disjoint_from_BD_Shape_int64_t
(ppl_const_BD_Shape_int64_t_t x, ppl_const_BD_Shape_int64_t_t y)` [**related**]

10.9.2.52 `int ppl_BD_Shape_int64_t_is_empty (ppl_const_BD_Shape_int64_t_t ph)` `[related]`

10.9.2.53 `int ppl_BD_Shape_int64_t_is_topologically_closed (ppl_const_BD_Shape_int64_t_t ph)`
`[related]`

10.9.2.54 `int ppl_BD_Shape_int64_t_is_universe (ppl_const_BD_Shape_int64_t_t ph)`
`[related]`

10.9.2.55 `int ppl_BD_Shape_int64_t_limited_BHMZ05_extrapolation_assign (ppl_BD_Shape_int64_t_t x, ppl_const_BD_Shape_int64_t_t y, ppl_const_Constraint_System_t cs)`
`[related]`

10.9.2.56 `int ppl_BD_Shape_int64_t_limited_BHMZ05_extrapolation_assign_with_tokens (ppl_BD_Shape_int64_t_t x, ppl_const_BD_Shape_int64_t_t y, ppl_const_Constraint_System_t cs, unsigned * tp)` `[related]`

10.9.2.57 `int ppl_BD_Shape_int64_t_limited_CC76_extrapolation_assign (ppl_BD_Shape_int64_t_t x, ppl_const_BD_Shape_int64_t_t y, ppl_const_Constraint_System_t cs)`
`[related]`

10.9.2.58 `int ppl_BD_Shape_int64_t_limited_CC76_extrapolation_assign_with_tokens (ppl_BD_Shape_int64_t_t x, ppl_const_BD_Shape_int64_t_t y, ppl_const_Constraint_System_t cs, unsigned * tp)` `[related]`

10.9.2.59 `int ppl_BD_Shape_int64_t_limited_H79_extrapolation_assign (ppl_BD_Shape_int64_t_t x, ppl_const_BD_Shape_int64_t_t y, ppl_const_Constraint_System_t cs)` `[related]`

10.9.2.60 `int ppl_BD_Shape_int64_t_limited_H79_extrapolation_assign_with_tokens (ppl_BD_Shape_int64_t_t x, ppl_const_BD_Shape_int64_t_t y, ppl_const_Constraint_System_t cs, unsigned * tp)` `[related]`

- 10.9.2.61** `int ppl_BD_Shape_int64_t_linear_partition (ppl_const_BD_Shape_int64_t_t x, ppl_const_BD_Shape_int64_t_t y, ppl_BD_Shape_int64_t_t * p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t * p_rest)` [**related**]
- 10.9.2.62** `int ppl_BD_Shape_int64_t_map_space_dimensions (ppl_BD_Shape_int64_t_t ph, ppl_dimension_type maps[], size_t n)` [**related**]
- 10.9.2.63** `int ppl_BD_Shape_int64_t_maximize (ppl_const_BD_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [**related**]
- 10.9.2.64** `int ppl_BD_Shape_int64_t_maximize_with_point (ppl_const_BD_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` [**related**]
- 10.9.2.65** `int ppl_BD_Shape_int64_t_minimize (ppl_const_BD_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [**related**]
- 10.9.2.66** `int ppl_BD_Shape_int64_t_minimize_with_point (ppl_const_BD_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` [**related**]
- 10.9.2.67** `int ppl_BD_Shape_int64_t_OK (ppl_const_BD_Shape_int64_t_t ph)` [**related**]
- 10.9.2.68** `int ppl_BD_Shape_int64_t_refine_with_congruence (ppl_BD_Shape_int64_t_t ph, ppl_const_Congruence_t c)` [**related**]
- 10.9.2.69** `int ppl_BD_Shape_int64_t_refine_with_congruences (ppl_BD_Shape_int64_t_t ph, ppl_const_Congruence_System_t cs)` [**related**]

- 10.9.2.70 `int ppl_BD_Shape_int64_t_refine_with_constraint (ppl_BD_Shape_int64_t_t ph,
ppl_const_Constraint_t c)` [`related`]
- 10.9.2.71 `int ppl_BD_Shape_int64_t_refine_with_constraints (ppl_BD_Shape_int64_t_t ph,
ppl_const_Constraint_System_t cs)` [`related`]
- 10.9.2.72 `int ppl_BD_Shape_int64_t_relation_with_Congruence (ppl_const_BD_Shape_int64_t_t
ph, ppl_const_Congruence_t c)` [`related`]
- 10.9.2.73 `int ppl_BD_Shape_int64_t_relation_with_Constraint (ppl_const_BD_Shape_int64_t_t
ph, ppl_const_Constraint_t c)` [`related`]
- 10.9.2.74 `int ppl_BD_Shape_int64_t_relation_with_Generator (ppl_const_BD_Shape_int64_t_t
ph, ppl_const_Generator_t c)` [`related`]
- 10.9.2.75 `int ppl_BD_Shape_int64_t_remove_higher_space_dimensions (ppl_BD_Shape_int64_t_t
ph, ppl_dimension_type d)` [`related`]
- 10.9.2.76 `int ppl_BD_Shape_int64_t_remove_space_dimensions (ppl_BD_Shape_int64_t_t ph,
ppl_dimension_type ds[], size_t n)` [`related`]
- 10.9.2.77 `int ppl_BD_Shape_int64_t_simplify_using_context_assign (ppl_BD_Shape_int64_t_t x,
ppl_const_BD_Shape_int64_t_t y)` [`related`]
- 10.9.2.78 `int ppl_BD_Shape_int64_t_space_dimension (ppl_const_BD_Shape_int64_t_t ph,
ppl_dimension_type * m)` [`related`]

- 10.9.2.79** `int ppl_BD_Shape_int64_t_strictly_contains_BD_Shape_int64_t`
`(ppl_const_BD_Shape_int64_t tx, ppl_const_BD_Shape_int64_t ty) [related]`
- 10.9.2.80** `int ppl_BD_Shape_int64_t_time_elapse_assign` `(ppl_BD_Shape_int64_t tx,`
`ppl_const_BD_Shape_int64_t ty) [related]`
- 10.9.2.81** `int ppl_BD_Shape_int64_t_topological_closure_assign` `(ppl_BD_Shape_int64_t t ph)`
`[related]`
- 10.9.2.82** `int ppl_BD_Shape_int64_t_total_memory_in_bytes` `(ppl_const_BD_Shape_int64_t t ps,`
`size_t * sz) [related]`
- 10.9.2.83** `int ppl_BD_Shape_int64_t_unconstrain_space_dimension` `(ppl_BD_Shape_int64_t t ph,`
`ppl_dimension_type var) [related]`
- 10.9.2.84** `int ppl_BD_Shape_int64_t_unconstrain_space_dimensions` `(ppl_BD_Shape_int64_t t`
`ph, ppl_dimension_type ds[], size_t n) [related]`
- 10.9.2.85** `int ppl_BD_Shape_int64_t_upper_bound_assign` `(ppl_BD_Shape_int64_t tx,`
`ppl_const_BD_Shape_int64_t ty) [related]`
- 10.9.2.86** `int ppl_BD_Shape_int64_t_upper_bound_assign_if_exact` `(ppl_BD_Shape_int64_t tx,`
`ppl_const_BD_Shape_int64_t ty) [related]`
- 10.9.2.87** `int ppl_BD_Shape_int64_t_widening_assign` `(ppl_BD_Shape_int64_t tx,`
`ppl_const_BD_Shape_int64_t ty) [related]`

- 10.9.2.88** `int ppl_BD_Shape_int64_t_widening_assign_with_tokens (ppl_BD_Shape_int64_t_t x, ppl_const_BD_Shape_int64_t_t y, unsigned * tp)` [related]
- 10.9.2.89** `int ppl_BD_Shape_int64_t_wrap_assign (ppl_BD_Shape_int64_t_t ph, ppl_dimension_type ds[], size_t n, enum ppl_enum_Bounded_Integer_Type_Width w, enum ppl_enum_Bounded_Integer_Type_Representation r, enum ppl_enum_Bounded_Integer_Type_Overflow o, const ppl_const_Constraint_System_t * pcs, unsigned complexity_threshold, int wrap_individually)` [related]
- 10.9.2.90** `int ppl_delete_BD_Shape_int64_t (ppl_const_BD_Shape_int64_t_t ph)` [related]
- 10.9.2.91** `int ppl_new_BD_Shape_int64_t_from_BD_Shape_double (ppl_BD_Shape_int64_t_t * pph, ppl_const_BD_Shape_double_t ph)` [related]
- 10.9.2.92** `int ppl_new_BD_Shape_int64_t_from_BD_Shape_double_with_complexity (ppl_BD_Shape_int64_t_t * pph, ppl_const_BD_Shape_double_t ph, int complexity)` [related]
- 10.9.2.93** `int ppl_new_BD_Shape_int64_t_from_BD_Shape_float (ppl_BD_Shape_int64_t_t * pph, ppl_const_BD_Shape_float_t ph)` [related]
- 10.9.2.94** `int ppl_new_BD_Shape_int64_t_from_BD_Shape_float_with_complexity (ppl_BD_Shape_int64_t_t * pph, ppl_const_BD_Shape_float_t ph, int complexity)` [related]
- 10.9.2.95** `int ppl_new_BD_Shape_int64_t_from_BD_Shape_int16_t (ppl_BD_Shape_int64_t_t * pph, ppl_const_BD_Shape_int16_t_t ph)` [related]

- 10.9.2.96** int ppl_new_BD_Shape_int64_t_from_BD_Shape_int16_t_with_complexity
(ppl_BD_Shape_int64_t_t * *pph*, ppl_const_BD_Shape_int16_t_t *ph*, int *complexity*)
[related]
- 10.9.2.97** int ppl_new_BD_Shape_int64_t_from_BD_Shape_int32_t (ppl_BD_Shape_int64_t_t *
pph, ppl_const_BD_Shape_int32_t_t *ph*) [related]
- 10.9.2.98** int ppl_new_BD_Shape_int64_t_from_BD_Shape_int32_t_with_complexity
(ppl_BD_Shape_int64_t_t * *pph*, ppl_const_BD_Shape_int32_t_t *ph*, int *complexity*)
[related]
- 10.9.2.99** int ppl_new_BD_Shape_int64_t_from_BD_Shape_int64_t (ppl_BD_Shape_int64_t_t *
pph, ppl_const_BD_Shape_int64_t_t *ph*) [related]
- 10.9.2.100** int ppl_new_BD_Shape_int64_t_from_BD_Shape_int64_t_with_complexity
(ppl_BD_Shape_int64_t_t * *pph*, ppl_const_BD_Shape_int64_t_t *ph*, int *complexity*)
[related]
- 10.9.2.101** int ppl_new_BD_Shape_int64_t_from_BD_Shape_int8_t (ppl_BD_Shape_int64_t_t *
pph, ppl_const_BD_Shape_int8_t_t *ph*) [related]
- 10.9.2.102** int ppl_new_BD_Shape_int64_t_from_BD_Shape_int8_t_with_complexity
(ppl_BD_Shape_int64_t_t * *pph*, ppl_const_BD_Shape_int8_t_t *ph*, int *complexity*)
[related]
- 10.9.2.103** int ppl_new_BD_Shape_int64_t_from_BD_Shape_long_double
(ppl_BD_Shape_int64_t_t * *pph*, ppl_const_BD_Shape_long_double_t_t *ph*)
[related]

- 10.9.2.104** `int ppl_new_BD_Shape_int64_t_from_BD_Shape_long_double_with_complexity`
`(ppl_BD_Shape_int64_t_t * pph, ppl_const_BD_Shape_long_double_t ph, int`
`complexity)` **[related]**
- 10.9.2.105** `int ppl_new_BD_Shape_int64_t_from_BD_Shape_mpq_class`
`(ppl_BD_Shape_int64_t_t * pph, ppl_const_BD_Shape_mpq_class_t ph)` **[related]**
- 10.9.2.106** `int ppl_new_BD_Shape_int64_t_from_BD_Shape_mpq_class_with_complexity`
`(ppl_BD_Shape_int64_t_t * pph, ppl_const_BD_Shape_mpq_class_t ph, int`
`complexity)` **[related]**
- 10.9.2.107** `int ppl_new_BD_Shape_int64_t_from_BD_Shape_mpz_class` `(ppl_BD_Shape_int64_t_t`
`* pph, ppl_const_BD_Shape_mpz_class_t ph)` **[related]**
- 10.9.2.108** `int ppl_new_BD_Shape_int64_t_from_BD_Shape_mpz_class_with_complexity`
`(ppl_BD_Shape_int64_t_t * pph, ppl_const_BD_Shape_mpz_class_t ph, int`
`complexity)` **[related]**
- 10.9.2.109** `int ppl_new_BD_Shape_int64_t_from_C_Polyhedron` `(ppl_BD_Shape_int64_t_t * pph,`
`ppl_const_Polyhedron_t ph)` **[related]**
- 10.9.2.110** `int ppl_new_BD_Shape_int64_t_from_C_Polyhedron_with_complexity`
`(ppl_BD_Shape_int64_t_t * pph, ppl_const_Polyhedron_t ph, int complexity)`
[related]
- 10.9.2.111** `int ppl_new_BD_Shape_int64_t_from_Congruence_System` `(ppl_BD_Shape_int64_t_t`
`* pph, ppl_const_Congruence_System_t cs)` **[related]**
- 10.9.2.112** `int ppl_new_BD_Shape_int64_t_from_Constraint_System` `(ppl_BD_Shape_int64_t_t *`
`pph, ppl_const_Constraint_System_t cs)` **[related]**

- 10.9.2.113 `int ppl_new_BD_Shape_int64_t_from_Double_Box (ppl_BD_Shape_int64_t_t * pph, ppl_const_Double_Box_t ph)` [`related`]
- 10.9.2.114 `int ppl_new_BD_Shape_int64_t_from_Double_Box_with_complexity (ppl_BD_Shape_int64_t_t * pph, ppl_const_Double_Box_t ph, int complexity)` [`related`]
- 10.9.2.115 `int ppl_new_BD_Shape_int64_t_from_Float_Box (ppl_BD_Shape_int64_t_t * pph, ppl_const_Float_Box_t ph)` [`related`]
- 10.9.2.116 `int ppl_new_BD_Shape_int64_t_from_Float_Box_with_complexity (ppl_BD_Shape_int64_t_t * pph, ppl_const_Float_Box_t ph, int complexity)` [`related`]
- 10.9.2.117 `int ppl_new_BD_Shape_int64_t_from_Generator_System (ppl_BD_Shape_int64_t_t * pph, ppl_const_Generator_System_t cs)` [`related`]
- 10.9.2.118 `int ppl_new_BD_Shape_int64_t_from_Grid (ppl_BD_Shape_int64_t_t * pph, ppl_const_Grid_t ph)` [`related`]
- 10.9.2.119 `int ppl_new_BD_Shape_int64_t_from_Grid_with_complexity (ppl_BD_Shape_int64_t_t * pph, ppl_const_Grid_t ph, int complexity)` [`related`]
- 10.9.2.120 `int ppl_new_BD_Shape_int64_t_from_Int16_Box (ppl_BD_Shape_int64_t_t * pph, ppl_const_Int16_Box_t ph)` [`related`]
- 10.9.2.121 `int ppl_new_BD_Shape_int64_t_from_Int16_Box_with_complexity (ppl_BD_Shape_int64_t_t * pph, ppl_const_Int16_Box_t ph, int complexity)` [`related`]

- 10.9.2.122 `int ppl_new_BD_Shape_int64_t_from_Int32_Box (ppl_BD_Shape_int64_t_t * pph,
ppl_const_Int32_Box_t ph)` [`related`]
- 10.9.2.123 `int ppl_new_BD_Shape_int64_t_from_Int32_Box_with_complexity
(ppl_BD_Shape_int64_t_t * pph, ppl_const_Int32_Box_t ph, int complexity)`
[`related`]
- 10.9.2.124 `int ppl_new_BD_Shape_int64_t_from_Int64_Box (ppl_BD_Shape_int64_t_t * pph,
ppl_const_Int64_Box_t ph)` [`related`]
- 10.9.2.125 `int ppl_new_BD_Shape_int64_t_from_Int64_Box_with_complexity
(ppl_BD_Shape_int64_t_t * pph, ppl_const_Int64_Box_t ph, int complexity)`
[`related`]
- 10.9.2.126 `int ppl_new_BD_Shape_int64_t_from_Int8_Box (ppl_BD_Shape_int64_t_t * pph,
ppl_const_Int8_Box_t ph)` [`related`]
- 10.9.2.127 `int ppl_new_BD_Shape_int64_t_from_Int8_Box_with_complexity
(ppl_BD_Shape_int64_t_t * pph, ppl_const_Int8_Box_t ph, int complexity)`
[`related`]
- 10.9.2.128 `int ppl_new_BD_Shape_int64_t_from_Long_Double_Box (ppl_BD_Shape_int64_t_t *
pph, ppl_const_Long_Double_Box_t ph)` [`related`]
- 10.9.2.129 `int ppl_new_BD_Shape_int64_t_from_Long_Double_Box_with_complexity
(ppl_BD_Shape_int64_t_t * pph, ppl_const_Long_Double_Box_t ph, int complexity)`
[`related`]
- 10.9.2.130 `int ppl_new_BD_Shape_int64_t_from_NNC_Polyhedron (ppl_BD_Shape_int64_t_t *
pph, ppl_const_Polyhedron_t ph)` [`related`]

- 10.9.2.131 `int ppl_new_BD_Shape_int64_t_from_NNC_Polyhedron_with_complexity`
(`ppl_BD_Shape_int64_t_t * pph`, `ppl_const_Polyhedron_t ph`, `int complexity`)
[related]
- 10.9.2.132 `int ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_double`
(`ppl_BD_Shape_int64_t_t * pph`, `ppl_const_Octagonal_Shape_double_t ph`)
[related]
- 10.9.2.133 `int ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_double_with_complexity`
(`ppl_BD_Shape_int64_t_t * pph`, `ppl_const_Octagonal_Shape_double_t ph`, `int complexity`) [related]
- 10.9.2.134 `int ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_float`
(`ppl_BD_Shape_int64_t_t * pph`, `ppl_const_Octagonal_Shape_float_t ph`)
[related]
- 10.9.2.135 `int ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_float_with_complexity`
(`ppl_BD_Shape_int64_t_t * pph`, `ppl_const_Octagonal_Shape_float_t ph`, `int complexity`) [related]
- 10.9.2.136 `int ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_int16_t`
(`ppl_BD_Shape_int64_t_t * pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`)
[related]
- 10.9.2.137 `int ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_int16_t_with_complexity`
(`ppl_BD_Shape_int64_t_t * pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`, `int complexity`) [related]
- 10.9.2.138 `int ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_int32_t`
(`ppl_BD_Shape_int64_t_t * pph`, `ppl_const_Octagonal_Shape_int32_t_t ph`)
[related]

- 10.9.2.139 `int ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_int32_t_with_complexity`
 (`ppl_BD_Shape_int64_t_t * pp`*h*, `ppl_const_Octagonal_Shape_int32_t_t` *ph*, `int`
complexity) [`related`]
- 10.9.2.140 `int ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_int64_t`
 (`ppl_BD_Shape_int64_t_t * pp`*h*, `ppl_const_Octagonal_Shape_int64_t_t` *ph*)
 [`related`]
- 10.9.2.141 `int ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_int64_t_with_complexity`
 (`ppl_BD_Shape_int64_t_t * pp`*h*, `ppl_const_Octagonal_Shape_int64_t_t` *ph*, `int`
complexity) [`related`]
- 10.9.2.142 `int ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_int8_t`
 (`ppl_BD_Shape_int64_t_t * pp`*h*, `ppl_const_Octagonal_Shape_int8_t_t` *ph*)
 [`related`]
- 10.9.2.143 `int ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_int8_t_with_complexity`
 (`ppl_BD_Shape_int64_t_t * pp`*h*, `ppl_const_Octagonal_Shape_int8_t_t` *ph*, `int`
complexity) [`related`]
- 10.9.2.144 `int ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_long_double`
 (`ppl_BD_Shape_int64_t_t * pp`*h*, `ppl_const_Octagonal_Shape_long_double_t_t` *ph*)
 [`related`]
- 10.9.2.145 `int ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_-`
`long_double_with_complexity` (`ppl_BD_Shape_int64_t_t * pp`*h*,
`ppl_const_Octagonal_Shape_long_double_t_t` *ph*, `int` *complexity*) [`related`]
- 10.9.2.146 `int ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_mpq_class`
 (`ppl_BD_Shape_int64_t_t * pp`*h*, `ppl_const_Octagonal_Shape_mpq_class_t_t` *ph*)
 [`related`]

- 10.9.2.147 `int ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_mpq_class_with_complexity`
(`ppl_BD_Shape_int64_t_t * pph`, `ppl_const_Octagonal_Shape_mpq_class_t ph`, `int complexity`) [`related`]
- 10.9.2.148 `int ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_mpz_class`
(`ppl_BD_Shape_int64_t_t * pph`, `ppl_const_Octagonal_Shape_mpz_class_t ph`)
[`related`]
- 10.9.2.149 `int ppl_new_BD_Shape_int64_t_from_Octagonal_Shape_mpz_class_with_complexity`
(`ppl_BD_Shape_int64_t_t * pph`, `ppl_const_Octagonal_Shape_mpz_class_t ph`, `int complexity`) [`related`]
- 10.9.2.150 `int ppl_new_BD_Shape_int64_t_from_Rational_Box` (`ppl_BD_Shape_int64_t_t * pph`,
`ppl_const_Rational_Box_t ph`) [`related`]
- 10.9.2.151 `int ppl_new_BD_Shape_int64_t_from_Rational_Box_with_complexity`
(`ppl_BD_Shape_int64_t_t * pph`, `ppl_const_Rational_Box_t ph`, `int complexity`)
[`related`]
- 10.9.2.152 `int ppl_new_BD_Shape_int64_t_from_space_dimension` (`ppl_BD_Shape_int64_t_t * pph`,
`ppl_dimension_type d`, `int empty`) [`related`]
- 10.9.2.153 `int ppl_new_BD_Shape_int64_t_from_Uint16_Box` (`ppl_BD_Shape_int64_t_t * pph`,
`ppl_const_Uint16_Box_t ph`) [`related`]
- 10.9.2.154 `int ppl_new_BD_Shape_int64_t_from_Uint16_Box_with_complexity`
(`ppl_BD_Shape_int64_t_t * pph`, `ppl_const_Uint16_Box_t ph`, `int complexity`)
[`related`]

- 10.9.2.155 `int ppl_new_BD_Shape_int64_t_from_Uint32_Box (ppl_BD_Shape_int64_t_t * pph,
ppl_const_Uint32_Box_t ph)` [**related**]
- 10.9.2.156 `int ppl_new_BD_Shape_int64_t_from_Uint32_Box_with_complexity
(ppl_BD_Shape_int64_t_t * pph, ppl_const_Uint32_Box_t ph, int complexity)`
[**related**]
- 10.9.2.157 `int ppl_new_BD_Shape_int64_t_from_Uint64_Box (ppl_BD_Shape_int64_t_t * pph,
ppl_const_Uint64_Box_t ph)` [**related**]
- 10.9.2.158 `int ppl_new_BD_Shape_int64_t_from_Uint64_Box_with_complexity
(ppl_BD_Shape_int64_t_t * pph, ppl_const_Uint64_Box_t ph, int complexity)`
[**related**]
- 10.9.2.159 `int ppl_new_BD_Shape_int64_t_from_Uint8_Box (ppl_BD_Shape_int64_t_t * pph,
ppl_const_Uint8_Box_t ph)` [**related**]
- 10.9.2.160 `int ppl_new_BD_Shape_int64_t_from_Uint8_Box_with_complexity
(ppl_BD_Shape_int64_t_t * pph, ppl_const_Uint8_Box_t ph, int complexity)`
[**related**]
- 10.9.2.161 `int ppl_new_BD_Shape_int64_t_from_Z_Box (ppl_BD_Shape_int64_t_t * pph,
ppl_const_Z_Box_t ph)` [**related**]
- 10.9.2.162 `int ppl_new_BD_Shape_int64_t_from_Z_Box_with_complexity
(ppl_BD_Shape_int64_t_t * pph, ppl_const_Z_Box_t ph, int complexity)` [**related**]
- 10.9.2.163 `int ppl_new_BD_Shape_int64_t_recycle_Congruence_System
(ppl_BD_Shape_int64_t_t * pph, ppl_Congruence_System_t cs)` [**related**]

- 10.9.2.164** `int ppl_new_BD_Shape_int64_t_recycle_Constraint_System (ppl_BD_Shape_int64_t_t * pph, ppl_Constraint_System_t cs)` [**related**]
- 10.9.2.165** `int ppl_new_BD_Shape_int64_t_recycle_Generator_System (ppl_BD_Shape_int64_t_t * pph, ppl_Generator_System_t cs)` [**related**]
- 10.9.2.166** `int ppl_one_affine_ranking_function_MS_BD_Shape_int64_t (ppl_const_BD_Shape_int64_t_t pset, ppl_Generator_t point)` [**related**]
- 10.9.2.167** `int ppl_one_affine_ranking_function_MS_BD_Shape_int64_t_2 (ppl_const_BD_Shape_int64_t_t pset_before, ppl_const_BD_Shape_int64_t_t pset_after, ppl_Generator_t point)` [**related**]
- 10.9.2.168** `int ppl_one_affine_ranking_function_PR_BD_Shape_int64_t (ppl_const_BD_Shape_int64_t_t pset, ppl_Generator_t point)` [**related**]
- 10.9.2.169** `int ppl_one_affine_ranking_function_PR_BD_Shape_int64_t_2 (ppl_const_BD_Shape_int64_t_t pset_before, ppl_const_BD_Shape_int64_t_t pset_after, ppl_Generator_t point)` [**related**]
- 10.9.2.170** `int ppl_termination_test_MS_BD_Shape_int64_t (ppl_const_BD_Shape_int64_t_t pset)` [**related**]
- 10.9.2.171** `int ppl_termination_test_MS_BD_Shape_int64_t_2 (ppl_const_BD_Shape_int64_t_t pset_before, ppl_const_BD_Shape_int64_t_t pset_after)` [**related**]
- 10.9.2.172** `int ppl_termination_test_PR_BD_Shape_int64_t (ppl_const_BD_Shape_int64_t_t pset)` [**related**]

10.9.2.173 `int ppl_termination_test_PR_BD_Shape_int64_t_2 (ppl_const_BD_Shape_int64_t_t pset_before, ppl_const_BD_Shape_int64_t_t pset_after)` [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.10 `ppl_BD_Shape_int8_t_tag` Interface Reference

Types and functions for [ppl_BD_Shape_int8_t_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_BD_Shape_int8_t (ppl_const_BD_Shape_int8_t_t ph)`
- `int ppl_new_BD_Shape_int8_t_from_space_dimension (ppl_BD_Shape_int8_t_t *pph, ppl_dimension_type d, int empty)`
- `int ppl_new_BD_Shape_int8_t_from_Int8_Box (ppl_BD_Shape_int8_t_t *pph, ppl_const_Int8_Box_t ph)`
- `int ppl_new_BD_Shape_int8_t_from_Int16_Box (ppl_BD_Shape_int8_t_t *pph, ppl_const_Int16_Box_t ph)`
- `int ppl_new_BD_Shape_int8_t_from_Int32_Box (ppl_BD_Shape_int8_t_t *pph, ppl_const_Int32_Box_t ph)`
- `int ppl_new_BD_Shape_int8_t_from_Int64_Box (ppl_BD_Shape_int8_t_t *pph, ppl_const_Int64_Box_t ph)`
- `int ppl_new_BD_Shape_int8_t_from_Uint8_Box (ppl_BD_Shape_int8_t_t *pph, ppl_const_Uint8_Box_t ph)`
- `int ppl_new_BD_Shape_int8_t_from_Uint16_Box (ppl_BD_Shape_int8_t_t *pph, ppl_const_Uint16_Box_t ph)`
- `int ppl_new_BD_Shape_int8_t_from_Uint32_Box (ppl_BD_Shape_int8_t_t *pph, ppl_const_Uint32_Box_t ph)`
- `int ppl_new_BD_Shape_int8_t_from_Uint64_Box (ppl_BD_Shape_int8_t_t *pph, ppl_const_Uint64_Box_t ph)`
- `int ppl_new_BD_Shape_int8_t_from_Z_Box (ppl_BD_Shape_int8_t_t *pph, ppl_const_Z_Box_t ph)`
- `int ppl_new_BD_Shape_int8_t_from_Rational_Box (ppl_BD_Shape_int8_t_t *pph, ppl_const_Rational_Box_t ph)`
- `int ppl_new_BD_Shape_int8_t_from_BD_Shape_int8_t (ppl_BD_Shape_int8_t_t *pph, ppl_const_BD_Shape_int8_t_t ph)`
- `int ppl_new_BD_Shape_int8_t_from_BD_Shape_int16_t (ppl_BD_Shape_int8_t_t *pph, ppl_const_BD_Shape_int16_t_t ph)`
- `int ppl_new_BD_Shape_int8_t_from_BD_Shape_int32_t (ppl_BD_Shape_int8_t_t *pph, ppl_const_BD_Shape_int32_t_t ph)`
- `int ppl_new_BD_Shape_int8_t_from_BD_Shape_int64_t (ppl_BD_Shape_int8_t_t *pph, ppl_const_BD_Shape_int64_t_t ph)`
- `int ppl_new_BD_Shape_int8_t_from_BD_Shape_mpz_class (ppl_BD_Shape_int8_t_t *pph, ppl_const_BD_Shape_mpz_class_t ph)`

- int [ppl_new_BD_Shape_int8_t_from_BD_Shape_mpq_class](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_BD_Shape_mpq_class_t ph)
- int [ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_int8_t](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph)
- int [ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_int16_t](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph)
- int [ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_int32_t](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph)
- int [ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_int64_t](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph)
- int [ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_mpz_class](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph)
- int [ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_mpq_class](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph)
- int [ppl_new_BD_Shape_int8_t_from_C_Polyhedron](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Polyhedron_t ph)
- int [ppl_new_BD_Shape_int8_t_from_NNC_Polyhedron](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Polyhedron_t ph)
- int [ppl_new_BD_Shape_int8_t_from_Grid](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Grid_t ph)
- int [ppl_new_BD_Shape_int8_t_from_Float_Box](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Float_Box_t ph)
- int [ppl_new_BD_Shape_int8_t_from_BD_Shape_float](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_BD_Shape_float_t ph)
- int [ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_float](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_float_t ph)
- int [ppl_new_BD_Shape_int8_t_from_Double_Box](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Double_Box_t ph)
- int [ppl_new_BD_Shape_int8_t_from_BD_Shape_double](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_BD_Shape_double_t ph)
- int [ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_double](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_double_t ph)
- int [ppl_new_BD_Shape_int8_t_from_Long_Double_Box](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Long_Double_Box_t ph)
- int [ppl_new_BD_Shape_int8_t_from_BD_Shape_long_double](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_BD_Shape_long_double_t ph)
- int [ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_long_double](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_long_double_t ph)
- int [ppl_new_BD_Shape_int8_t_from_Int8_Box_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Int8_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_int8_t_from_Int16_Box_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Int16_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_int8_t_from_Int32_Box_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Int32_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_int8_t_from_Int64_Box_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Int64_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_int8_t_from_Uint8_Box_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Uint8_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_int8_t_from_Uint16_Box_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Uint16_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_int8_t_from_Uint32_Box_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Uint32_Box_t ph, int complexity)

- [int ppl_new_BD_Shape_int8_t_from_Uint64_Box_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Uint64_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_int8_t_from_Z_Box_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Z_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_int8_t_from_Rational_Box_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Rational_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_int8_t_from_BD_Shape_int8_t_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)
- [int ppl_new_BD_Shape_int8_t_from_BD_Shape_int16_t_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)
- [int ppl_new_BD_Shape_int8_t_from_BD_Shape_int32_t_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)
- [int ppl_new_BD_Shape_int8_t_from_BD_Shape_int64_t_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)
- [int ppl_new_BD_Shape_int8_t_from_BD_Shape_mpz_class_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)
- [int ppl_new_BD_Shape_int8_t_from_BD_Shape_mpq_class_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)
- [int ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_int8_t_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)
- [int ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_int16_t_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)
- [int ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_int32_t_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)
- [int ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_int64_t_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)
- [int ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_mpz_class_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)
- [int ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_mpq_class_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)
- [int ppl_new_BD_Shape_int8_t_from_C_Polyhedron_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- [int ppl_new_BD_Shape_int8_t_from_NNC_Polyhedron_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- [int ppl_new_BD_Shape_int8_t_from_Grid_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Grid_t ph, int complexity)
- [int ppl_new_BD_Shape_int8_t_from_Float_Box_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Float_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_int8_t_from_BD_Shape_float_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_BD_Shape_float_t ph, int complexity)
- [int ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_float_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)
- [int ppl_new_BD_Shape_int8_t_from_Double_Box_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Double_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_int8_t_from_BD_Shape_double_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_BD_Shape_double_t ph, int complexity)
- [int ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_double_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)
- [int ppl_new_BD_Shape_int8_t_from_Long_Double_Box_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_int8_t_from_BD_Shape_long_double_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity)

- int [ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_long_double_with_complexity](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)
- int [ppl_new_BD_Shape_int8_t_from_Constraint_System](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Constraint_System_t cs)
- int [ppl_new_BD_Shape_int8_t_from_Congruence_System](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Congruence_System_t cs)
- int [ppl_new_BD_Shape_int8_t_from_Generator_System](#) (ppl_BD_Shape_int8_t_t *pph, ppl_const_Generator_System_t cs)
- int [ppl_BD_Shape_int8_t_space_dimension](#) (ppl_const_BD_Shape_int8_t_t ph, [ppl_dimension_type](#) *m)
- int [ppl_BD_Shape_int8_t_affine_dimension](#) (ppl_const_BD_Shape_int8_t_t ph, [ppl_dimension_type](#) *m)
- int [ppl_BD_Shape_int8_t_relation_with_Constraint](#) (ppl_const_BD_Shape_int8_t_t ph, ppl_const_Constraint_t c)
- int [ppl_BD_Shape_int8_t_relation_with_Generator](#) (ppl_const_BD_Shape_int8_t_t ph, ppl_const_Generator_t c)
- int [ppl_BD_Shape_int8_t_relation_with_Congruence](#) (ppl_const_BD_Shape_int8_t_t ph, ppl_const_Congruence_t c)
- int [ppl_BD_Shape_int8_t_get_constraints](#) (ppl_const_BD_Shape_int8_t_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_BD_Shape_int8_t_get_congruences](#) (ppl_const_BD_Shape_int8_t_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_BD_Shape_int8_t_get_minimized_constraints](#) (ppl_const_BD_Shape_int8_t_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_BD_Shape_int8_t_get_minimized_congruences](#) (ppl_const_BD_Shape_int8_t_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_BD_Shape_int8_t_is_empty](#) (ppl_const_BD_Shape_int8_t_t ph)
- int [ppl_BD_Shape_int8_t_is_universe](#) (ppl_const_BD_Shape_int8_t_t ph)
- int [ppl_BD_Shape_int8_t_is_bounded](#) (ppl_const_BD_Shape_int8_t_t ph)
- int [ppl_BD_Shape_int8_t_contains_integer_point](#) (ppl_const_BD_Shape_int8_t_t ph)
- int [ppl_BD_Shape_int8_t_is_topologically_closed](#) (ppl_const_BD_Shape_int8_t_t ph)
- int [ppl_BD_Shape_int8_t_is_discrete](#) (ppl_const_BD_Shape_int8_t_t ph)
- int [ppl_BD_Shape_int8_t_topological_closure_assign](#) (ppl_BD_Shape_int8_t_t ph)
- int [ppl_BD_Shape_int8_t_bounds_from_above](#) (ppl_const_BD_Shape_int8_t_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_BD_Shape_int8_t_bounds_from_below](#) (ppl_const_BD_Shape_int8_t_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_BD_Shape_int8_t_maximize](#) (ppl_const_BD_Shape_int8_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_BD_Shape_int8_t_minimize](#) (ppl_const_BD_Shape_int8_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_BD_Shape_int8_t_maximize_with_point](#) (ppl_const_BD_Shape_int8_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_BD_Shape_int8_t_minimize_with_point](#) (ppl_const_BD_Shape_int8_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_BD_Shape_int8_t_frequency](#) (ppl_const_BD_Shape_int8_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)
- int [ppl_BD_Shape_int8_t_contains_BD_Shape_int8_t](#) (ppl_const_BD_Shape_int8_t_t x, ppl_const_BD_Shape_int8_t_t y)

- `int ppl_BD_Shape_int8_t_strictly_contains_BD_Shape_int8_t` (`ppl_const_BD_Shape_int8_t_t x`, `ppl_const_BD_Shape_int8_t_t y`)
- `int ppl_BD_Shape_int8_t_is_disjoint_from_BD_Shape_int8_t` (`ppl_const_BD_Shape_int8_t_t x`, `ppl_const_BD_Shape_int8_t_t y`)
- `int ppl_BD_Shape_int8_t_equals_BD_Shape_int8_t` (`ppl_const_BD_Shape_int8_t_t x`, `ppl_const_BD_Shape_int8_t_t y`)
- `int ppl_BD_Shape_int8_t_OK` (`ppl_const_BD_Shape_int8_t_t ph`)
- `int ppl_BD_Shape_int8_t_add_constraint` (`ppl_BD_Shape_int8_t_t ph`, `ppl_const_Constraint_t c`)
- `int ppl_BD_Shape_int8_t_add_congruence` (`ppl_BD_Shape_int8_t_t ph`, `ppl_const_Congruence_t c`)
- `int ppl_BD_Shape_int8_t_add_constraints` (`ppl_BD_Shape_int8_t_t ph`, `ppl_const_Constraint_System_t cs`)
- `int ppl_BD_Shape_int8_t_add_congruences` (`ppl_BD_Shape_int8_t_t ph`, `ppl_const_Congruence_System_t cs`)
- `int ppl_BD_Shape_int8_t_refine_with_constraint` (`ppl_BD_Shape_int8_t_t ph`, `ppl_const_Constraint_t c`)
- `int ppl_BD_Shape_int8_t_refine_with_congruence` (`ppl_BD_Shape_int8_t_t ph`, `ppl_const_Congruence_t c`)
- `int ppl_BD_Shape_int8_t_refine_with_constraints` (`ppl_BD_Shape_int8_t_t ph`, `ppl_const_Constraint_System_t cs`)
- `int ppl_BD_Shape_int8_t_refine_with_congruences` (`ppl_BD_Shape_int8_t_t ph`, `ppl_const_Congruence_System_t cs`)
- `int ppl_BD_Shape_int8_t_intersection_assign` (`ppl_BD_Shape_int8_t_t x`, `ppl_const_BD_Shape_int8_t_t y`)
- `int ppl_BD_Shape_int8_t_upper_bound_assign` (`ppl_BD_Shape_int8_t_t x`, `ppl_const_BD_Shape_int8_t_t y`)
- `int ppl_BD_Shape_int8_t_difference_assign` (`ppl_BD_Shape_int8_t_t x`, `ppl_const_BD_Shape_int8_t_t y`)
- `int ppl_BD_Shape_int8_t_concatenate_assign` (`ppl_BD_Shape_int8_t_t x`, `ppl_const_BD_Shape_int8_t_t y`)
- `int ppl_BD_Shape_int8_t_time_elapse_assign` (`ppl_BD_Shape_int8_t_t x`, `ppl_const_BD_Shape_int8_t_t y`)
- `int ppl_BD_Shape_int8_t_upper_bound_assign_if_exact` (`ppl_BD_Shape_int8_t_t x`, `ppl_const_BD_Shape_int8_t_t y`)
- `int ppl_BD_Shape_int8_t_simplify_using_context_assign` (`ppl_BD_Shape_int8_t_t x`, `ppl_const_BD_Shape_int8_t_t y`)
- `int ppl_BD_Shape_int8_t_constrains` (`ppl_BD_Shape_int8_t_t ph`, `ppl_dimension_type var`)
- `int ppl_BD_Shape_int8_t_unconstrain_space_dimension` (`ppl_BD_Shape_int8_t_t ph`, `ppl_dimension_type var`)
- `int ppl_BD_Shape_int8_t_unconstrain_space_dimensions` (`ppl_BD_Shape_int8_t_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`)
- `int ppl_BD_Shape_int8_t_affine_image` (`ppl_BD_Shape_int8_t_t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`)
- `int ppl_BD_Shape_int8_t_affine_preimage` (`ppl_BD_Shape_int8_t_t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`)
- `int ppl_BD_Shape_int8_t_bounded_affine_image` (`ppl_BD_Shape_int8_t_t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t lb`, `ppl_const_Linear_Expression_t ub`, `ppl_const_Coefficient_t d`)
- `int ppl_BD_Shape_int8_t_bounded_affine_preimage` (`ppl_BD_Shape_int8_t_t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t lb`, `ppl_const_Linear_Expression_t ub`, `ppl_const_Coefficient_t d`)

- int [ppl_BD_Shape_int8_t_generalized_affine_image](#) (ppl_BD_Shape_int8_t_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_BD_Shape_int8_t_generalized_affine_preimage](#) (ppl_BD_Shape_int8_t_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_BD_Shape_int8_t_generalized_affine_image_lhs_rhs](#) (ppl_BD_Shape_int8_t_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_BD_Shape_int8_t_generalized_affine_preimage_lhs_rhs](#) (ppl_BD_Shape_int8_t_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_BD_Shape_int8_t_add_space_dimensions_and_embed](#) (ppl_BD_Shape_int8_t_t ph, [ppl_dimension_type](#) d)
- int [ppl_BD_Shape_int8_t_add_space_dimensions_and_project](#) (ppl_BD_Shape_int8_t_t ph, [ppl_dimension_type](#) d)
- int [ppl_BD_Shape_int8_t_remove_space_dimensions](#) (ppl_BD_Shape_int8_t_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_BD_Shape_int8_t_remove_higher_space_dimensions](#) (ppl_BD_Shape_int8_t_t ph, [ppl_dimension_type](#) d)
- int [ppl_BD_Shape_int8_t_expand_space_dimension](#) (ppl_BD_Shape_int8_t_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_BD_Shape_int8_t_fold_space_dimensions](#) (ppl_BD_Shape_int8_t_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_BD_Shape_int8_t_map_space_dimensions](#) (ppl_BD_Shape_int8_t_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_BD_Shape_int8_t_drop_some_non_integer_points](#) (ppl_BD_Shape_int8_t_t ph, int complexity)
- int [ppl_BD_Shape_int8_t_drop_some_non_integer_points_2](#) (ppl_BD_Shape_int8_t_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_BD_Shape_int8_t_external_memory_in_bytes](#) (ppl_const_BD_Shape_int8_t_t ps, size_t *sz)
- int [ppl_BD_Shape_int8_t_total_memory_in_bytes](#) (ppl_const_BD_Shape_int8_t_t ps, size_t *sz)
- int [ppl_BD_Shape_int8_t_BHMZ05_widening_assign_with_tokens](#) (ppl_BD_Shape_int8_t_t x, ppl_const_BD_Shape_int8_t_t y, unsigned *tp)
- int [ppl_BD_Shape_int8_t_H79_widening_assign_with_tokens](#) (ppl_BD_Shape_int8_t_t x, ppl_const_BD_Shape_int8_t_t y, unsigned *tp)
- int [ppl_BD_Shape_int8_t_BHMZ05_widening_assign](#) (ppl_BD_Shape_int8_t_t x, ppl_const_BD_Shape_int8_t_t y)
- int [ppl_BD_Shape_int8_t_H79_widening_assign](#) (ppl_BD_Shape_int8_t_t x, ppl_const_BD_Shape_int8_t_t y)
- int [ppl_BD_Shape_int8_t_widening_assign_with_tokens](#) (ppl_BD_Shape_int8_t_t x, ppl_const_BD_Shape_int8_t_t y, unsigned *tp)
- int [ppl_BD_Shape_int8_t_widening_assign](#) (ppl_BD_Shape_int8_t_t x, ppl_const_BD_Shape_int8_t_t y)
- int [ppl_BD_Shape_int8_t_limited_BHMZ05_extrapolation_assign_with_tokens](#) (ppl_BD_Shape_int8_t_t x, ppl_const_BD_Shape_int8_t_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- int [ppl_BD_Shape_int8_t_limited_H79_extrapolation_assign_with_tokens](#) (ppl_BD_Shape_int8_t_t x, ppl_const_BD_Shape_int8_t_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- int [ppl_BD_Shape_int8_t_limited_CC76_extrapolation_assign_with_tokens](#) (ppl_BD_Shape_int8_t_t x, ppl_const_BD_Shape_int8_t_t y, ppl_const_Constraint_System_t cs, unsigned *tp)

- `int ppl_BD_Shape_int8_t_limited_BHMZ05_extrapolation_assign` (`ppl_BD_Shape_int8_t_t x`, `ppl_const_BD_Shape_int8_t_t y`, `ppl_const_Constraint_System_t cs`)
- `int ppl_BD_Shape_int8_t_limited_H79_extrapolation_assign` (`ppl_BD_Shape_int8_t_t x`, `ppl_const_BD_Shape_int8_t_t y`, `ppl_const_Constraint_System_t cs`)
- `int ppl_BD_Shape_int8_t_limited_CC76_extrapolation_assign` (`ppl_BD_Shape_int8_t_t x`, `ppl_const_BD_Shape_int8_t_t y`, `ppl_const_Constraint_System_t cs`)
- `int ppl_BD_Shape_int8_t_CC76_extrapolation_assign_with_tokens` (`ppl_BD_Shape_int8_t_t x`, `ppl_const_BD_Shape_int8_t_t y`, `unsigned *tp`)
- `int ppl_BD_Shape_int8_t_CC76_extrapolation_assign` (`ppl_BD_Shape_int8_t_t x`, `ppl_const_BD_Shape_int8_t_t y`)
- `int ppl_BD_Shape_int8_t_CC76_narrowing_assign` (`ppl_BD_Shape_int8_t_t x`, `ppl_const_BD_Shape_int8_t_t y`)
- `int ppl_BD_Shape_int8_t_linear_partition` (`ppl_const_BD_Shape_int8_t_t x`, `ppl_const_BD_Shape_int8_t_t y`, `ppl_BD_Shape_int8_t_t *p_inters`, `ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest`)
- `int ppl_BD_Shape_int8_t_wrap_assign` (`ppl_BD_Shape_int8_t_t ph`, `ppl_dimension_type ds[]`, `size_t n`, `enum ppl_enum_Bounded_Integer_Type_Width w`, `enum ppl_enum_Bounded_Integer_Type_Representation r`, `enum ppl_enum_Bounded_Integer_Type_Overflow o`, `const ppl_const_Constraint_System_t *pcs`, `unsigned complexity_threshold`, `int wrap_individually`)
- `int ppl_new_BD_Shape_int8_t_recycle_Constraint_System` (`ppl_BD_Shape_int8_t_t *pph`, `ppl_Constraint_System_t cs`)
- `int ppl_new_BD_Shape_int8_t_recycle_Congruence_System` (`ppl_BD_Shape_int8_t_t *pph`, `ppl_Congruence_System_t cs`)
- `int ppl_new_BD_Shape_int8_t_recycle_Generator_System` (`ppl_BD_Shape_int8_t_t *pph`, `ppl_Generator_System_t cs`)
- `int ppl_assign_BD_Shape_int8_t_from_BD_Shape_int8_t` (`ppl_BD_Shape_int8_t_t dst`, `ppl_const_BD_Shape_int8_t_t src`)
- `int ppl_BD_Shape_int8_t_add_recycled_constraints` (`ppl_BD_Shape_int8_t_t ph`, `ppl_Constraint_System_t cs`)
- `int ppl_BD_Shape_int8_t_add_recycled_congruences` (`ppl_BD_Shape_int8_t_t ph`, `ppl_Congruence_System_t cs`)
- `int ppl_termination_test_MS_BD_Shape_int8_t` (`ppl_const_BD_Shape_int8_t_t pset`)
- `int ppl_termination_test_PR_BD_Shape_int8_t` (`ppl_const_BD_Shape_int8_t_t pset`)
- `int ppl_one_affine_ranking_function_MS_BD_Shape_int8_t` (`ppl_const_BD_Shape_int8_t_t pset`, `ppl_Generator_t point`)
- `int ppl_one_affine_ranking_function_PR_BD_Shape_int8_t` (`ppl_const_BD_Shape_int8_t_t pset`, `ppl_Generator_t point`)
- `int ppl_all_affine_ranking_functions_MS_BD_Shape_int8_t` (`ppl_const_BD_Shape_int8_t_t pset`, `ppl_Polyhedron_t ph`)
- `int ppl_all_affine_ranking_functions_PR_BD_Shape_int8_t` (`ppl_const_BD_Shape_int8_t_t pset`, `ppl_Polyhedron_t ph`)
- `int ppl_termination_test_MS_BD_Shape_int8_t_2` (`ppl_const_BD_Shape_int8_t_t pset_before`, `ppl_const_BD_Shape_int8_t_t pset_after`)
- `int ppl_termination_test_PR_BD_Shape_int8_t_2` (`ppl_const_BD_Shape_int8_t_t pset_before`, `ppl_const_BD_Shape_int8_t_t pset_after`)
- `int ppl_one_affine_ranking_function_MS_BD_Shape_int8_t_2` (`ppl_const_BD_Shape_int8_t_t pset_before`, `ppl_const_BD_Shape_int8_t_t pset_after`, `ppl_Generator_t point`)
- `int ppl_one_affine_ranking_function_PR_BD_Shape_int8_t_2` (`ppl_const_BD_Shape_int8_t_t pset_before`, `ppl_const_BD_Shape_int8_t_t pset_after`, `ppl_Generator_t point`)
- `int ppl_all_affine_ranking_functions_MS_BD_Shape_int8_t_2` (`ppl_const_BD_Shape_int8_t_t pset_before`, `ppl_const_BD_Shape_int8_t_t pset_after`, `ppl_Polyhedron_t ph`)
- `int ppl_all_affine_ranking_functions_PR_BD_Shape_int8_t_2` (`ppl_const_BD_Shape_int8_t_t pset_before`, `ppl_const_BD_Shape_int8_t_t pset_after`, `ppl_Polyhedron_t ph`)

10.10.1 Detailed Description

Types and functions for [ppl_BD_Shape_int8_t_tag](#).

10.10.2 Friends And Related Function Documentation

10.10.2.1 `int ppl_all_affine_ranking_functions_MS_BD_Shape_int8_t (ppl_const_BD_Shape_int8_t_t pset, ppl_Polyhedron_t ph)` [[related](#)]

10.10.2.2 `int ppl_all_affine_ranking_functions_MS_BD_Shape_int8_t_2 (ppl_const_BD_Shape_int8_t_t pset_before, ppl_const_BD_Shape_int8_t_t pset_after, ppl_Polyhedron_t ph)` [[related](#)]

10.10.2.3 `int ppl_all_affine_ranking_functions_PR_BD_Shape_int8_t (ppl_const_BD_Shape_int8_t_t pset, ppl_Polyhedron_t ph)` [[related](#)]

10.10.2.4 `int ppl_all_affine_ranking_functions_PR_BD_Shape_int8_t_2 (ppl_const_BD_Shape_int8_t_t pset_before, ppl_const_BD_Shape_int8_t_t pset_after, ppl_Polyhedron_t ph)` [[related](#)]

10.10.2.5 `int ppl_assign_BD_Shape_int8_t_from_BD_Shape_int8_t (ppl_BD_Shape_int8_t_t dst, ppl_const_BD_Shape_int8_t_t src)` [[related](#)]

10.10.2.6 `int ppl_BD_Shape_int8_t_add_congruence (ppl_BD_Shape_int8_t_t ph, ppl_const_Congruence_t c)` [[related](#)]

10.10.2.7 `int ppl_BD_Shape_int8_t_add_congruences (ppl_BD_Shape_int8_t_t ph, ppl_const_Congruence_System_t cs)` [[related](#)]

10.10.2.8 `int ppl_BD_Shape_int8_t_add_constraint (ppl_BD_Shape_int8_t_t ph, ppl_const_Constraint_t c)` [[related](#)]

- 10.10.2.9 `int ppl_BD_Shape_int8_t_add_constraints (ppl_BD_Shape_int8_t_t ph,
ppl_const_Constraint_System_t cs)` [`related`]
- 10.10.2.10 `int ppl_BD_Shape_int8_t_add_recycled_congruences (ppl_BD_Shape_int8_t_t ph,
ppl_Congruence_System_t cs)` [`related`]
- 10.10.2.11 `int ppl_BD_Shape_int8_t_add_recycled_constraints (ppl_BD_Shape_int8_t_t ph,
ppl_Constraint_System_t cs)` [`related`]
- 10.10.2.12 `int ppl_BD_Shape_int8_t_add_space_dimensions_and_embed (ppl_BD_Shape_int8_t_t
ph, ppl_dimension_type d)` [`related`]
- 10.10.2.13 `int ppl_BD_Shape_int8_t_add_space_dimensions_and_project
(ppl_BD_Shape_int8_t_t ph, ppl_dimension_type d)` [`related`]
- 10.10.2.14 `int ppl_BD_Shape_int8_t_affine_dimension (ppl_const_BD_Shape_int8_t_t ph,
ppl_dimension_type * m)` [`related`]
- 10.10.2.15 `int ppl_BD_Shape_int8_t_affine_image (ppl_BD_Shape_int8_t_t ph,
ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t
d)` [`related`]
- 10.10.2.16 `int ppl_BD_Shape_int8_t_affine_preimage (ppl_BD_Shape_int8_t_t ph,
ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t
d)` [`related`]
- 10.10.2.17 `int ppl_BD_Shape_int8_t_BHMZ05_widening_assign (ppl_BD_Shape_int8_t_t x,
ppl_const_BD_Shape_int8_t_t y)` [`related`]

- 10.10.2.18** `int ppl_BD_Shape_int8_t_BHMZ05_widening_assign_with_tokens`
 (`ppl_BD_Shape_int8_t_t x`, `ppl_const_BD_Shape_int8_t_t y`, `unsigned * tp`)
 [`related`]
- 10.10.2.19** `int ppl_BD_Shape_int8_t_bounded_affine_image` (`ppl_BD_Shape_int8_t_t`
`ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t lb`,
`ppl_const_Linear_Expression_t ub`, `ppl_const_Coefficient_t d`) [`related`]
- 10.10.2.20** `int ppl_BD_Shape_int8_t_bounded_affine_preimage` (`ppl_BD_Shape_int8_t_t`
`ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t lb`,
`ppl_const_Linear_Expression_t ub`, `ppl_const_Coefficient_t d`) [`related`]
- 10.10.2.21** `int ppl_BD_Shape_int8_t_bounds_from_above` (`ppl_const_BD_Shape_int8_t_t ph`,
`ppl_const_Linear_Expression_t le`) [`related`]
- 10.10.2.22** `int ppl_BD_Shape_int8_t_bounds_from_below` (`ppl_const_BD_Shape_int8_t_t ph`,
`ppl_const_Linear_Expression_t le`) [`related`]
- 10.10.2.23** `int ppl_BD_Shape_int8_t_CC76_extrapolation_assign` (`ppl_BD_Shape_int8_t_t x`,
`ppl_const_BD_Shape_int8_t_t y`) [`related`]
- 10.10.2.24** `int ppl_BD_Shape_int8_t_CC76_extrapolation_assign_with_tokens`
 (`ppl_BD_Shape_int8_t_t x`, `ppl_const_BD_Shape_int8_t_t y`, `unsigned * tp`)
 [`related`]
- 10.10.2.25** `int ppl_BD_Shape_int8_t_CC76_narrowing_assign` (`ppl_BD_Shape_int8_t_t x`,
`ppl_const_BD_Shape_int8_t_t y`) [`related`]
- 10.10.2.26** `int ppl_BD_Shape_int8_t_concatenate_assign` (`ppl_BD_Shape_int8_t_t x`,
`ppl_const_BD_Shape_int8_t_t y`) [`related`]

- 10.10.2.27 `int ppl_BD_Shape_int8_t_constrains (ppl_BD_Shape_int8_t ph, ppl_dimension_type var)` [**related**]
- 10.10.2.28 `int ppl_BD_Shape_int8_t_contains_BD_Shape_int8_t (ppl_const_BD_Shape_int8_t x, ppl_const_BD_Shape_int8_t y)` [**related**]
- 10.10.2.29 `int ppl_BD_Shape_int8_t_contains_integer_point (ppl_const_BD_Shape_int8_t ph)` [**related**]
- 10.10.2.30 `int ppl_BD_Shape_int8_t_difference_assign (ppl_BD_Shape_int8_t x, ppl_const_BD_Shape_int8_t y)` [**related**]
- 10.10.2.31 `int ppl_BD_Shape_int8_t_drop_some_non_integer_points (ppl_BD_Shape_int8_t ph, int complexity)` [**related**]
- 10.10.2.32 `int ppl_BD_Shape_int8_t_drop_some_non_integer_points_2 (ppl_BD_Shape_int8_t ph, ppl_dimension_type ds[], size_t n, int complexity)` [**related**]
- 10.10.2.33 `int ppl_BD_Shape_int8_t_equals_BD_Shape_int8_t (ppl_const_BD_Shape_int8_t x, ppl_const_BD_Shape_int8_t y)` [**related**]
- 10.10.2.34 `int ppl_BD_Shape_int8_t_expand_space_dimension (ppl_BD_Shape_int8_t ph, ppl_dimension_type d, ppl_dimension_type m)` [**related**]
- 10.10.2.35 `int ppl_BD_Shape_int8_t_external_memory_in_bytes (ppl_const_BD_Shape_int8_t ps, size_t * sz)` [**related**]

- 10.10.2.36 `int ppl_BD_Shape_int8_t_fold_space_dimensions (ppl_BD_Shape_int8_t_t ph,
ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [**related**]
- 10.10.2.37 `int ppl_BD_Shape_int8_t_frequency (ppl_const_BD_Shape_int8_t_t ph,
ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd,
ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)` [**related**]
- 10.10.2.38 `int ppl_BD_Shape_int8_t_generalized_affine_image (ppl_BD_Shape_int8_t_t
ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.10.2.39 `int ppl_BD_Shape_int8_t_generalized_affine_image_lhs_rhs (ppl_BD_Shape_int8_t_t
ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym,
ppl_const_Linear_Expression_t rhs)` [**related**]
- 10.10.2.40 `int ppl_BD_Shape_int8_t_generalized_affine_preimage (ppl_BD_Shape_int8_t_t
ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.10.2.41 `int ppl_BD_Shape_int8_t_generalized_affine_preimage_lhs_rhs
(ppl_BD_Shape_int8_t_t ph, ppl_const_Linear_Expression_t lhs, enum
ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)`
[**related**]
- 10.10.2.42 `int ppl_BD_Shape_int8_t_get_congruences (ppl_const_BD_Shape_int8_t_t ph,
ppl_const_Congruence_System_t * pcs)` [**related**]
- 10.10.2.43 `int ppl_BD_Shape_int8_t_get_constraints (ppl_const_BD_Shape_int8_t_t ph,
ppl_const_Constraint_System_t * pcs)` [**related**]

- 10.10.2.44 `int ppl_BD_Shape_int8_t_get_minimized_congruences (ppl_const_BD_Shape_int8_t_t ph, ppl_const_Congruence_System_t * pcs)` [`related`]
- 10.10.2.45 `int ppl_BD_Shape_int8_t_get_minimized_constraints (ppl_const_BD_Shape_int8_t_t ph, ppl_const_Constraint_System_t * pcs)` [`related`]
- 10.10.2.46 `int ppl_BD_Shape_int8_t_H79_widening_assign (ppl_BD_Shape_int8_t_t x, ppl_const_BD_Shape_int8_t_t y)` [`related`]
- 10.10.2.47 `int ppl_BD_Shape_int8_t_H79_widening_assign_with_tokens (ppl_BD_Shape_int8_t_t x, ppl_const_BD_Shape_int8_t_t y, unsigned * tp)` [`related`]
- 10.10.2.48 `int ppl_BD_Shape_int8_t_intersection_assign (ppl_BD_Shape_int8_t_t x, ppl_const_BD_Shape_int8_t_t y)` [`related`]
- 10.10.2.49 `int ppl_BD_Shape_int8_t_is_bounded (ppl_const_BD_Shape_int8_t_t ph)` [`related`]
- 10.10.2.50 `int ppl_BD_Shape_int8_t_is_discrete (ppl_const_BD_Shape_int8_t_t ph)` [`related`]
- 10.10.2.51 `int ppl_BD_Shape_int8_t_is_disjoint_from_BD_Shape_int8_t (ppl_const_BD_Shape_int8_t_t x, ppl_const_BD_Shape_int8_t_t y)` [`related`]
- 10.10.2.52 `int ppl_BD_Shape_int8_t_is_empty (ppl_const_BD_Shape_int8_t_t ph)` [`related`]
- 10.10.2.53 `int ppl_BD_Shape_int8_t_is_topologically_closed (ppl_const_BD_Shape_int8_t_t ph)` [`related`]

- 10.10.2.54** `int ppl_BD_Shape_int8_t_is_universe (ppl_const_BD_Shape_int8_t_t ph)`
[related]
- 10.10.2.55** `int ppl_BD_Shape_int8_t_limited_BHMZ05_extrapolation_assign (ppl_BD_Shape_int8_t_t x, ppl_const_BD_Shape_int8_t_t y, ppl_const_Constraint_System_t cs)`
[related]
- 10.10.2.56** `int ppl_BD_Shape_int8_t_limited_BHMZ05_extrapolation_assign_with_tokens (ppl_BD_Shape_int8_t_t x, ppl_const_BD_Shape_int8_t_t y, ppl_const_Constraint_System_t cs, unsigned * tp)` [related]
- 10.10.2.57** `int ppl_BD_Shape_int8_t_limited_CC76_extrapolation_assign (ppl_BD_Shape_int8_t_t x, ppl_const_BD_Shape_int8_t_t y, ppl_const_Constraint_System_t cs)`
[related]
- 10.10.2.58** `int ppl_BD_Shape_int8_t_limited_CC76_extrapolation_assign_with_tokens (ppl_BD_Shape_int8_t_t x, ppl_const_BD_Shape_int8_t_t y, ppl_const_Constraint_System_t cs, unsigned * tp)` [related]
- 10.10.2.59** `int ppl_BD_Shape_int8_t_limited_H79_extrapolation_assign (ppl_BD_Shape_int8_t_t x, ppl_const_BD_Shape_int8_t_t y, ppl_const_Constraint_System_t cs)` [related]
- 10.10.2.60** `int ppl_BD_Shape_int8_t_limited_H79_extrapolation_assign_with_tokens (ppl_BD_Shape_int8_t_t x, ppl_const_BD_Shape_int8_t_t y, ppl_const_Constraint_System_t cs, unsigned * tp)` [related]
- 10.10.2.61** `int ppl_BD_Shape_int8_t_linear_partition (ppl_const_BD_Shape_int8_t_t x, ppl_const_BD_Shape_int8_t_t y, ppl_BD_Shape_int8_t_t * p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t * p_rest)` [related]

- 10.10.2.62 `int ppl_BD_Shape_int8_t_map_space_dimensions (ppl_BD_Shape_int8_t_t ph, ppl_dimension_type maps[], size_t n)` [related]
- 10.10.2.63 `int ppl_BD_Shape_int8_t_maximize (ppl_const_BD_Shape_int8_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [related]
- 10.10.2.64 `int ppl_BD_Shape_int8_t_maximize_with_point (ppl_const_BD_Shape_int8_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` [related]
- 10.10.2.65 `int ppl_BD_Shape_int8_t_minimize (ppl_const_BD_Shape_int8_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [related]
- 10.10.2.66 `int ppl_BD_Shape_int8_t_minimize_with_point (ppl_const_BD_Shape_int8_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` [related]
- 10.10.2.67 `int ppl_BD_Shape_int8_t_OK (ppl_const_BD_Shape_int8_t_t ph)` [related]
- 10.10.2.68 `int ppl_BD_Shape_int8_t_refine_with_congruence (ppl_BD_Shape_int8_t_t ph, ppl_const_Congruence_t c)` [related]
- 10.10.2.69 `int ppl_BD_Shape_int8_t_refine_with_congruences (ppl_BD_Shape_int8_t_t ph, ppl_const_Congruence_System_t cs)` [related]
- 10.10.2.70 `int ppl_BD_Shape_int8_t_refine_with_constraint (ppl_BD_Shape_int8_t_t ph, ppl_const_Constraint_t c)` [related]

- 10.10.2.71** `int ppl_BD_Shape_int8_t_refine_with_constraints (ppl_BD_Shape_int8_t_t ph, ppl_const_Constraint_System_t cs)` [**related**]
- 10.10.2.72** `int ppl_BD_Shape_int8_t_relation_with_Congruence (ppl_const_BD_Shape_int8_t_t ph, ppl_const_Congruence_t c)` [**related**]
- 10.10.2.73** `int ppl_BD_Shape_int8_t_relation_with_Constraint (ppl_const_BD_Shape_int8_t_t ph, ppl_const_Constraint_t c)` [**related**]
- 10.10.2.74** `int ppl_BD_Shape_int8_t_relation_with_Generator (ppl_const_BD_Shape_int8_t_t ph, ppl_const_Generator_t c)` [**related**]
- 10.10.2.75** `int ppl_BD_Shape_int8_t_remove_higher_space_dimensions (ppl_BD_Shape_int8_t_t ph, ppl_dimension_type d)` [**related**]
- 10.10.2.76** `int ppl_BD_Shape_int8_t_remove_space_dimensions (ppl_BD_Shape_int8_t_t ph, ppl_dimension_type ds[], size_t n)` [**related**]
- 10.10.2.77** `int ppl_BD_Shape_int8_t_simplify_using_context_assign (ppl_BD_Shape_int8_t_t x, ppl_const_BD_Shape_int8_t_t y)` [**related**]
- 10.10.2.78** `int ppl_BD_Shape_int8_t_space_dimension (ppl_const_BD_Shape_int8_t_t ph, ppl_dimension_type * m)` [**related**]
- 10.10.2.79** `int ppl_BD_Shape_int8_t_strictly_contains_BD_Shape_int8_t (ppl_const_BD_Shape_int8_t_t x, ppl_const_BD_Shape_int8_t_t y)` [**related**]

- 10.10.2.80 `int ppl_BD_Shape_int8_t_time_elapse_assign (ppl_BD_Shape_int8_t_t x, ppl_const_BD_Shape_int8_t_t y) [related]`
- 10.10.2.81 `int ppl_BD_Shape_int8_t_topological_closure_assign (ppl_BD_Shape_int8_t_t ph) [related]`
- 10.10.2.82 `int ppl_BD_Shape_int8_t_total_memory_in_bytes (ppl_const_BD_Shape_int8_t_t ps, size_t * sz) [related]`
- 10.10.2.83 `int ppl_BD_Shape_int8_t_unconstrain_space_dimension (ppl_BD_Shape_int8_t_t ph, ppl_dimension_type var) [related]`
- 10.10.2.84 `int ppl_BD_Shape_int8_t_unconstrain_space_dimensions (ppl_BD_Shape_int8_t_t ph, ppl_dimension_type ds[], size_t n) [related]`
- 10.10.2.85 `int ppl_BD_Shape_int8_t_upper_bound_assign (ppl_BD_Shape_int8_t_t x, ppl_const_BD_Shape_int8_t_t y) [related]`
- 10.10.2.86 `int ppl_BD_Shape_int8_t_upper_bound_assign_if_exact (ppl_BD_Shape_int8_t_t x, ppl_const_BD_Shape_int8_t_t y) [related]`
- 10.10.2.87 `int ppl_BD_Shape_int8_t_widening_assign (ppl_BD_Shape_int8_t_t x, ppl_const_BD_Shape_int8_t_t y) [related]`
- 10.10.2.88 `int ppl_BD_Shape_int8_t_widening_assign_with_tokens (ppl_BD_Shape_int8_t_t x, ppl_const_BD_Shape_int8_t_t y, unsigned * tp) [related]`

- 10.10.2.89** `int ppl_BD_Shape_int8_t_wrap_assign (ppl_BD_Shape_int8_t_t ph,
ppl_dimension_type ds[], size_t n, enum ppl_enum_Bounded_Integer_Type_Width
w, enum ppl_enum_Bounded_Integer_Type_Representation r, enum
ppl_enum_Bounded_Integer_Type_Overflow o, const ppl_const_Constraint_System_t
* pcs, unsigned complexity_threshold, int wrap_individually)` [**related**]
- 10.10.2.90** `int ppl_delete_BD_Shape_int8_t (ppl_const_BD_Shape_int8_t_t ph)` [**related**]
- 10.10.2.91** `int ppl_new_BD_Shape_int8_t_from_BD_Shape_double (ppl_BD_Shape_int8_t_t *
pph, ppl_const_BD_Shape_double_t ph)` [**related**]
- 10.10.2.92** `int ppl_new_BD_Shape_int8_t_from_BD_Shape_double_with_complexity
(ppl_BD_Shape_int8_t_t * pph, ppl_const_BD_Shape_double_t ph, int complexity)`
[**related**]
- 10.10.2.93** `int ppl_new_BD_Shape_int8_t_from_BD_Shape_float (ppl_BD_Shape_int8_t_t * pph,
ppl_const_BD_Shape_float_t ph)` [**related**]
- 10.10.2.94** `int ppl_new_BD_Shape_int8_t_from_BD_Shape_float_with_complexity
(ppl_BD_Shape_int8_t_t * pph, ppl_const_BD_Shape_float_t ph, int complexity)`
[**related**]
- 10.10.2.95** `int ppl_new_BD_Shape_int8_t_from_BD_Shape_int16_t (ppl_BD_Shape_int8_t_t *
pph, ppl_const_BD_Shape_int16_t_t ph)` [**related**]
- 10.10.2.96** `int ppl_new_BD_Shape_int8_t_from_BD_Shape_int16_t_with_complexity
(ppl_BD_Shape_int8_t_t * pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)`
[**related**]

- 10.10.2.97 `int ppl_new_BD_Shape_int8_t_from_BD_Shape_int32_t (ppl_BD_Shape_int8_t_t *
pph, ppl_const_BD_Shape_int32_t_t ph)` [*related*]
- 10.10.2.98 `int ppl_new_BD_Shape_int8_t_from_BD_Shape_int32_t_with_complexity
(ppl_BD_Shape_int8_t_t * pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)`
[*related*]
- 10.10.2.99 `int ppl_new_BD_Shape_int8_t_from_BD_Shape_int64_t (ppl_BD_Shape_int8_t_t *
pph, ppl_const_BD_Shape_int64_t_t ph)` [*related*]
- 10.10.2.100 `int ppl_new_BD_Shape_int8_t_from_BD_Shape_int64_t_with_complexity
(ppl_BD_Shape_int8_t_t * pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)`
[*related*]
- 10.10.2.101 `int ppl_new_BD_Shape_int8_t_from_BD_Shape_int8_t (ppl_BD_Shape_int8_t_t *
pph, ppl_const_BD_Shape_int8_t_t ph)` [*related*]
- 10.10.2.102 `int ppl_new_BD_Shape_int8_t_from_BD_Shape_int8_t_with_complexity
(ppl_BD_Shape_int8_t_t * pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)`
[*related*]
- 10.10.2.103 `int ppl_new_BD_Shape_int8_t_from_BD_Shape_long_double
(ppl_BD_Shape_int8_t_t * pph, ppl_const_BD_Shape_long_double_t ph)`
[*related*]
- 10.10.2.104 `int ppl_new_BD_Shape_int8_t_from_BD_Shape_long_double_with_complexity
(ppl_BD_Shape_int8_t_t * pph, ppl_const_BD_Shape_long_double_t ph, int
complexity)` [*related*]

- 10.10.2.105** `int ppl_new_BD_Shape_int8_t_from_BD_Shape_mpq_class (ppl_BD_Shape_int8_t_t * pph, ppl_const_BD_Shape_mpq_class_t ph)` [**related**]
- 10.10.2.106** `int ppl_new_BD_Shape_int8_t_from_BD_Shape_mpq_class_with_complexity (ppl_BD_Shape_int8_t_t * pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)` [**related**]
- 10.10.2.107** `int ppl_new_BD_Shape_int8_t_from_BD_Shape_mpz_class (ppl_BD_Shape_int8_t_t * pph, ppl_const_BD_Shape_mpz_class_t ph)` [**related**]
- 10.10.2.108** `int ppl_new_BD_Shape_int8_t_from_BD_Shape_mpz_class_with_complexity (ppl_BD_Shape_int8_t_t * pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)` [**related**]
- 10.10.2.109** `int ppl_new_BD_Shape_int8_t_from_C_Polyhedron (ppl_BD_Shape_int8_t_t * pph, ppl_const_Polyhedron_t ph)` [**related**]
- 10.10.2.110** `int ppl_new_BD_Shape_int8_t_from_C_Polyhedron_with_complexity (ppl_BD_Shape_int8_t_t * pph, ppl_const_Polyhedron_t ph, int complexity)` [**related**]
- 10.10.2.111** `int ppl_new_BD_Shape_int8_t_from_Congruence_System (ppl_BD_Shape_int8_t_t * pph, ppl_const_Congruence_System_t cs)` [**related**]
- 10.10.2.112** `int ppl_new_BD_Shape_int8_t_from_Constraint_System (ppl_BD_Shape_int8_t_t * pph, ppl_const_Constraint_System_t cs)` [**related**]
- 10.10.2.113** `int ppl_new_BD_Shape_int8_t_from_Double_Box (ppl_BD_Shape_int8_t_t * pph, ppl_const_Double_Box_t ph)` [**related**]

- 10.10.2.114 `int ppl_new_BD_Shape_int8_t_from_Double_Box_with_complexity`
 (`ppl_BD_Shape_int8_t_t * pph`, `ppl_const_Double_Box_t ph`, `int complexity`)
 [`related`]
- 10.10.2.115 `int ppl_new_BD_Shape_int8_t_from_Float_Box` (`ppl_BD_Shape_int8_t_t * pph`,
`ppl_const_Float_Box_t ph`) [`related`]
- 10.10.2.116 `int ppl_new_BD_Shape_int8_t_from_Float_Box_with_complexity`
 (`ppl_BD_Shape_int8_t_t * pph`, `ppl_const_Float_Box_t ph`, `int complexity`)
 [`related`]
- 10.10.2.117 `int ppl_new_BD_Shape_int8_t_from_Generator_System` (`ppl_BD_Shape_int8_t_t *`
`pph`, `ppl_const_Generator_System_t cs`) [`related`]
- 10.10.2.118 `int ppl_new_BD_Shape_int8_t_from_Grid` (`ppl_BD_Shape_int8_t_t * pph`,
`ppl_const_Grid_t ph`) [`related`]
- 10.10.2.119 `int ppl_new_BD_Shape_int8_t_from_Grid_with_complexity` (`ppl_BD_Shape_int8_t_t`
`* pph`, `ppl_const_Grid_t ph`, `int complexity`) [`related`]
- 10.10.2.120 `int ppl_new_BD_Shape_int8_t_from_Int16_Box` (`ppl_BD_Shape_int8_t_t * pph`,
`ppl_const_Int16_Box_t ph`) [`related`]
- 10.10.2.121 `int ppl_new_BD_Shape_int8_t_from_Int16_Box_with_complexity`
 (`ppl_BD_Shape_int8_t_t * pph`, `ppl_const_Int16_Box_t ph`, `int complexity`)
 [`related`]
- 10.10.2.122 `int ppl_new_BD_Shape_int8_t_from_Int32_Box` (`ppl_BD_Shape_int8_t_t * pph`,
`ppl_const_Int32_Box_t ph`) [`related`]

- 10.10.2.123 `int ppl_new_BD_Shape_int8_t_from_Int32_Box_with_complexity`
(`ppl_BD_Shape_int8_t_t * pph`, `ppl_const_Int32_Box_t ph`, `int complexity`)
[related]
- 10.10.2.124 `int ppl_new_BD_Shape_int8_t_from_Int64_Box` (`ppl_BD_Shape_int8_t_t * pph`,
`ppl_const_Int64_Box_t ph`) [related]
- 10.10.2.125 `int ppl_new_BD_Shape_int8_t_from_Int64_Box_with_complexity`
(`ppl_BD_Shape_int8_t_t * pph`, `ppl_const_Int64_Box_t ph`, `int complexity`)
[related]
- 10.10.2.126 `int ppl_new_BD_Shape_int8_t_from_Int8_Box` (`ppl_BD_Shape_int8_t_t * pph`,
`ppl_const_Int8_Box_t ph`) [related]
- 10.10.2.127 `int ppl_new_BD_Shape_int8_t_from_Int8_Box_with_complexity`
(`ppl_BD_Shape_int8_t_t * pph`, `ppl_const_Int8_Box_t ph`, `int complexity`)
[related]
- 10.10.2.128 `int ppl_new_BD_Shape_int8_t_from_Long_Double_Box` (`ppl_BD_Shape_int8_t_t *`
`pph`, `ppl_const_Long_Double_Box_t ph`) [related]
- 10.10.2.129 `int ppl_new_BD_Shape_int8_t_from_Long_Double_Box_with_complexity`
(`ppl_BD_Shape_int8_t_t * pph`, `ppl_const_Long_Double_Box_t ph`, `int complexity`)
[related]
- 10.10.2.130 `int ppl_new_BD_Shape_int8_t_from_NNC_Polyhedron` (`ppl_BD_Shape_int8_t_t *`
`pph`, `ppl_const_Polyhedron_t ph`) [related]

- 10.10.2.131 `int ppl_new_BD_Shape_int8_t_from_NNC_Polyhedron_with_complexity`
 (`ppl_BD_Shape_int8_t_t * pph`, `ppl_const_Polyhedron_t ph`, `int complexity`)
 [`related`]
- 10.10.2.132 `int ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_double`
 (`ppl_BD_Shape_int8_t_t * pph`, `ppl_const_Octagonal_Shape_double_t ph`)
 [`related`]
- 10.10.2.133 `int ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_double_with_complexity`
 (`ppl_BD_Shape_int8_t_t * pph`, `ppl_const_Octagonal_Shape_double_t ph`, `int complexity`) [`related`]
- 10.10.2.134 `int ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_float`
 (`ppl_BD_Shape_int8_t_t * pph`, `ppl_const_Octagonal_Shape_float_t ph`)
 [`related`]
- 10.10.2.135 `int ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_float_with_complexity`
 (`ppl_BD_Shape_int8_t_t * pph`, `ppl_const_Octagonal_Shape_float_t ph`, `int complexity`) [`related`]
- 10.10.2.136 `int ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_int16_t`
 (`ppl_BD_Shape_int8_t_t * pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`)
 [`related`]
- 10.10.2.137 `int ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_int16_t_with_complexity`
 (`ppl_BD_Shape_int8_t_t * pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`, `int complexity`) [`related`]
- 10.10.2.138 `int ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_int32_t`
 (`ppl_BD_Shape_int8_t_t * pph`, `ppl_const_Octagonal_Shape_int32_t_t ph`)
 [`related`]

- 10.10.2.139 `int ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_int32_t_with_complexity`
(`ppl_BD_Shape_int8_t_t * pplh`, `ppl_const_Octagonal_Shape_int32_t_t ph`, `int complexity`) [`related`]
- 10.10.2.140 `int ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_int64_t`
(`ppl_BD_Shape_int8_t_t * pplh`, `ppl_const_Octagonal_Shape_int64_t_t ph`)
[`related`]
- 10.10.2.141 `int ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_int64_t_with_complexity`
(`ppl_BD_Shape_int8_t_t * pplh`, `ppl_const_Octagonal_Shape_int64_t_t ph`, `int complexity`) [`related`]
- 10.10.2.142 `int ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_int8_t`
(`ppl_BD_Shape_int8_t_t * pplh`, `ppl_const_Octagonal_Shape_int8_t_t ph`)
[`related`]
- 10.10.2.143 `int ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_int8_t_with_complexity`
(`ppl_BD_Shape_int8_t_t * pplh`, `ppl_const_Octagonal_Shape_int8_t_t ph`, `int complexity`) [`related`]
- 10.10.2.144 `int ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_long_double`
(`ppl_BD_Shape_int8_t_t * pplh`, `ppl_const_Octagonal_Shape_long_double_t_t ph`)
[`related`]
- 10.10.2.145 `int ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_-`
`long_double_with_complexity` (`ppl_BD_Shape_int8_t_t * pplh`,
`ppl_const_Octagonal_Shape_long_double_t_t ph`, `int complexity`) [`related`]
- 10.10.2.146 `int ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_mpq_class`
(`ppl_BD_Shape_int8_t_t * pplh`, `ppl_const_Octagonal_Shape_mpq_class_t_t ph`)
[`related`]

- 10.10.2.147 `int ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_mpq_class_with_complexity`
 (`ppl_BD_Shape_int8_t_t * pph`, `ppl_const_Octagonal_Shape_mpq_class_t ph`, `int complexity`) [`related`]
- 10.10.2.148 `int ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_mpz_class`
 (`ppl_BD_Shape_int8_t_t * pph`, `ppl_const_Octagonal_Shape_mpz_class_t ph`)
 [`related`]
- 10.10.2.149 `int ppl_new_BD_Shape_int8_t_from_Octagonal_Shape_mpz_class_with_complexity`
 (`ppl_BD_Shape_int8_t_t * pph`, `ppl_const_Octagonal_Shape_mpz_class_t ph`, `int complexity`) [`related`]
- 10.10.2.150 `int ppl_new_BD_Shape_int8_t_from_Rational_Box` (`ppl_BD_Shape_int8_t_t * pph`,
`ppl_const_Rational_Box_t ph`) [`related`]
- 10.10.2.151 `int ppl_new_BD_Shape_int8_t_from_Rational_Box_with_complexity`
 (`ppl_BD_Shape_int8_t_t * pph`, `ppl_const_Rational_Box_t ph`, `int complexity`)
 [`related`]
- 10.10.2.152 `int ppl_new_BD_Shape_int8_t_from_space_dimension` (`ppl_BD_Shape_int8_t_t *`
`pph`, `ppl_dimension_type d`, `int empty`) [`related`]
- 10.10.2.153 `int ppl_new_BD_Shape_int8_t_from_Uint16_Box` (`ppl_BD_Shape_int8_t_t * pph`,
`ppl_const_Uint16_Box_t ph`) [`related`]
- 10.10.2.154 `int ppl_new_BD_Shape_int8_t_from_Uint16_Box_with_complexity`
 (`ppl_BD_Shape_int8_t_t * pph`, `ppl_const_Uint16_Box_t ph`, `int complexity`)
 [`related`]

- 10.10.2.155** `int ppl_new_BD_Shape_int8_t_from_Uint32_Box (ppl_BD_Shape_int8_t_t * pph, ppl_const_Uint32_Box_t ph)` [**related**]
- 10.10.2.156** `int ppl_new_BD_Shape_int8_t_from_Uint32_Box_with_complexity (ppl_BD_Shape_int8_t_t * pph, ppl_const_Uint32_Box_t ph, int complexity)` [**related**]
- 10.10.2.157** `int ppl_new_BD_Shape_int8_t_from_Uint64_Box (ppl_BD_Shape_int8_t_t * pph, ppl_const_Uint64_Box_t ph)` [**related**]
- 10.10.2.158** `int ppl_new_BD_Shape_int8_t_from_Uint64_Box_with_complexity (ppl_BD_Shape_int8_t_t * pph, ppl_const_Uint64_Box_t ph, int complexity)` [**related**]
- 10.10.2.159** `int ppl_new_BD_Shape_int8_t_from_Uint8_Box (ppl_BD_Shape_int8_t_t * pph, ppl_const_Uint8_Box_t ph)` [**related**]
- 10.10.2.160** `int ppl_new_BD_Shape_int8_t_from_Uint8_Box_with_complexity (ppl_BD_Shape_int8_t_t * pph, ppl_const_Uint8_Box_t ph, int complexity)` [**related**]
- 10.10.2.161** `int ppl_new_BD_Shape_int8_t_from_Z_Box (ppl_BD_Shape_int8_t_t * pph, ppl_const_Z_Box_t ph)` [**related**]
- 10.10.2.162** `int ppl_new_BD_Shape_int8_t_from_Z_Box_with_complexity (ppl_BD_Shape_int8_t_t * pph, ppl_const_Z_Box_t ph, int complexity)` [**related**]
- 10.10.2.163** `int ppl_new_BD_Shape_int8_t_recycle_Congruence_System (ppl_BD_Shape_int8_t_t * pph, ppl_Congruence_System_t cs)` [**related**]

- 10.10.2.164 `int ppl_new_BD_Shape_int8_t_recycle_Constraint_System (ppl_BD_Shape_int8_t_t *
pplh, ppl_Constraint_System_t cs) [related]`
- 10.10.2.165 `int ppl_new_BD_Shape_int8_t_recycle_Generator_System (ppl_BD_Shape_int8_t_t *
pplh, ppl_Generator_System_t cs) [related]`
- 10.10.2.166 `int ppl_one_affine_ranking_function_MS_BD_Shape_int8_t
(ppl_const_BD_Shape_int8_t_t pset, ppl_Generator_t point) [related]`
- 10.10.2.167 `int ppl_one_affine_ranking_function_MS_BD_Shape_int8_t_2
(ppl_const_BD_Shape_int8_t_t pset_before, ppl_const_BD_Shape_int8_t_t pset_after,
ppl_Generator_t point) [related]`
- 10.10.2.168 `int ppl_one_affine_ranking_function_PR_BD_Shape_int8_t
(ppl_const_BD_Shape_int8_t_t pset, ppl_Generator_t point) [related]`
- 10.10.2.169 `int ppl_one_affine_ranking_function_PR_BD_Shape_int8_t_2
(ppl_const_BD_Shape_int8_t_t pset_before, ppl_const_BD_Shape_int8_t_t pset_after,
ppl_Generator_t point) [related]`
- 10.10.2.170 `int ppl_termination_test_MS_BD_Shape_int8_t (ppl_const_BD_Shape_int8_t_t pset)
[related]`
- 10.10.2.171 `int ppl_termination_test_MS_BD_Shape_int8_t_2 (ppl_const_BD_Shape_int8_t_t
pset_before, ppl_const_BD_Shape_int8_t_t pset_after) [related]`
- 10.10.2.172 `int ppl_termination_test_PR_BD_Shape_int8_t (ppl_const_BD_Shape_int8_t_t pset)
[related]`

10.10.2.173 `int ppl_termination_test_PR_BD_Shape_int8_t_2 (ppl_const_BD_Shape_int8_t_t pset_before, ppl_const_BD_Shape_int8_t_t pset_after)` [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.11 ppl_BD_Shape_long_double_tag Interface Reference

Types and functions for [ppl_BD_Shape_long_double_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_BD_Shape_long_double (ppl_const_BD_Shape_long_double_t ph)`
- `int ppl_new_BD_Shape_long_double_from_space_dimension (ppl_BD_Shape_long_double_t *pph, ppl_dimension_type d, int empty)`
- `int ppl_new_BD_Shape_long_double_from_Int8_Box (ppl_BD_Shape_long_double_t *pph, ppl_const_Int8_Box_t ph)`
- `int ppl_new_BD_Shape_long_double_from_Int16_Box (ppl_BD_Shape_long_double_t *pph, ppl_const_Int16_Box_t ph)`
- `int ppl_new_BD_Shape_long_double_from_Int32_Box (ppl_BD_Shape_long_double_t *pph, ppl_const_Int32_Box_t ph)`
- `int ppl_new_BD_Shape_long_double_from_Int64_Box (ppl_BD_Shape_long_double_t *pph, ppl_const_Int64_Box_t ph)`
- `int ppl_new_BD_Shape_long_double_from_UInt8_Box (ppl_BD_Shape_long_double_t *pph, ppl_const_UInt8_Box_t ph)`
- `int ppl_new_BD_Shape_long_double_from_UInt16_Box (ppl_BD_Shape_long_double_t *pph, ppl_const_UInt16_Box_t ph)`
- `int ppl_new_BD_Shape_long_double_from_UInt32_Box (ppl_BD_Shape_long_double_t *pph, ppl_const_UInt32_Box_t ph)`
- `int ppl_new_BD_Shape_long_double_from_UInt64_Box (ppl_BD_Shape_long_double_t *pph, ppl_const_UInt64_Box_t ph)`
- `int ppl_new_BD_Shape_long_double_from_Z_Box (ppl_BD_Shape_long_double_t *pph, ppl_const_Z_Box_t ph)`
- `int ppl_new_BD_Shape_long_double_from_Rational_Box (ppl_BD_Shape_long_double_t *pph, ppl_const_Rational_Box_t ph)`
- `int ppl_new_BD_Shape_long_double_from_BD_Shape_int8_t (ppl_BD_Shape_long_double_t *pph, ppl_const_BD_Shape_int8_t_t ph)`
- `int ppl_new_BD_Shape_long_double_from_BD_Shape_int16_t (ppl_BD_Shape_long_double_t *pph, ppl_const_BD_Shape_int16_t_t ph)`
- `int ppl_new_BD_Shape_long_double_from_BD_Shape_int32_t (ppl_BD_Shape_long_double_t *pph, ppl_const_BD_Shape_int32_t_t ph)`
- `int ppl_new_BD_Shape_long_double_from_BD_Shape_int64_t (ppl_BD_Shape_long_double_t *pph, ppl_const_BD_Shape_int64_t_t ph)`
- `int ppl_new_BD_Shape_long_double_from_BD_Shape_mpz_class (ppl_BD_Shape_long_double_t *pph, ppl_const_BD_Shape_mpz_class_t ph)`

- [int ppl_new_BD_Shape_long_double_from_BD_Shape_mpq_class](#) (ppl_BD_Shape_long_double_t *pph, ppl_const_BD_Shape_mpq_class_t ph)
- [int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_int8_t](#) (ppl_BD_Shape_long_double_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph)
- [int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_int16_t](#) (ppl_BD_Shape_long_double_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph)
- [int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_int32_t](#) (ppl_BD_Shape_long_double_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph)
- [int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_int64_t](#) (ppl_BD_Shape_long_double_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph)
- [int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_mpz_class](#) (ppl_BD_Shape_long_double_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph)
- [int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_mpq_class](#) (ppl_BD_Shape_long_double_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph)
- [int ppl_new_BD_Shape_long_double_from_C_Polyhedron](#) (ppl_BD_Shape_long_double_t *pph, ppl_const_Polyhedron_t ph)
- [int ppl_new_BD_Shape_long_double_from_NNC_Polyhedron](#) (ppl_BD_Shape_long_double_t *pph, ppl_const_Polyhedron_t ph)
- [int ppl_new_BD_Shape_long_double_from_Grid](#) (ppl_BD_Shape_long_double_t *pph, ppl_const_Grid_t ph)
- [int ppl_new_BD_Shape_long_double_from_Float_Box](#) (ppl_BD_Shape_long_double_t *pph, ppl_const_Float_Box_t ph)
- [int ppl_new_BD_Shape_long_double_from_BD_Shape_float](#) (ppl_BD_Shape_long_double_t *pph, ppl_const_BD_Shape_float_t ph)
- [int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_float](#) (ppl_BD_Shape_long_double_t *pph, ppl_const_Octagonal_Shape_float_t ph)
- [int ppl_new_BD_Shape_long_double_from_Double_Box](#) (ppl_BD_Shape_long_double_t *pph, ppl_const_Double_Box_t ph)
- [int ppl_new_BD_Shape_long_double_from_BD_Shape_double](#) (ppl_BD_Shape_long_double_t *pph, ppl_const_BD_Shape_double_t ph)
- [int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_double](#) (ppl_BD_Shape_long_double_t *pph, ppl_const_Octagonal_Shape_double_t ph)
- [int ppl_new_BD_Shape_long_double_from_Long_Double_Box](#) (ppl_BD_Shape_long_double_t *pph, ppl_const_Long_Double_Box_t ph)
- [int ppl_new_BD_Shape_long_double_from_BD_Shape_long_double](#) (ppl_BD_Shape_long_double_t *pph, ppl_const_BD_Shape_long_double_t ph)
- [int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_long_double](#) (ppl_BD_Shape_long_double_t *pph, ppl_const_Octagonal_Shape_long_double_t ph)
- [int ppl_new_BD_Shape_long_double_from_Int8_Box_with_complexity](#) (ppl_BD_Shape_long_double_t *pph, ppl_const_Int8_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_long_double_from_Int16_Box_with_complexity](#) (ppl_BD_Shape_long_double_t *pph, ppl_const_Int16_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_long_double_from_Int32_Box_with_complexity](#) (ppl_BD_Shape_long_double_t *pph, ppl_const_Int32_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_long_double_from_Int64_Box_with_complexity](#) (ppl_BD_Shape_long_double_t *pph, ppl_const_Int64_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_long_double_from_Uint8_Box_with_complexity](#) (ppl_BD_Shape_long_double_t *pph, ppl_const_Uint8_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_long_double_from_Uint16_Box_with_complexity](#) (ppl_BD_Shape_long_double_t *pph, ppl_const_Uint16_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_long_double_from_Uint32_Box_with_complexity](#) (ppl_BD_Shape_long_double_t *pph, ppl_const_Uint32_Box_t ph, int complexity)

- `int ppl_new_BD_Shape_long_double_from_Uint64_Box_with_complexity` (`ppl_BD_Shape_long_double_t *pph`, `ppl_const_Uint64_Box_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_long_double_from_Z_Box_with_complexity` (`ppl_BD_Shape_long_double_t *pph`, `ppl_const_Z_Box_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_long_double_from_Rational_Box_with_complexity` (`ppl_BD_Shape_long_double_t *pph`, `ppl_const_Rational_Box_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_long_double_from_BD_Shape_int8_t_with_complexity` (`ppl_BD_Shape_long_double_t *pph`, `ppl_const_BD_Shape_int8_t_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_long_double_from_BD_Shape_int16_t_with_complexity` (`ppl_BD_Shape_long_double_t *pph`, `ppl_const_BD_Shape_int16_t_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_long_double_from_BD_Shape_int32_t_with_complexity` (`ppl_BD_Shape_long_double_t *pph`, `ppl_const_BD_Shape_int32_t_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_long_double_from_BD_Shape_int64_t_with_complexity` (`ppl_BD_Shape_long_double_t *pph`, `ppl_const_BD_Shape_int64_t_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_long_double_from_BD_Shape_mpz_class_with_complexity` (`ppl_BD_Shape_long_double_t *pph`, `ppl_const_BD_Shape_mpz_class_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_long_double_from_BD_Shape_mpq_class_with_complexity` (`ppl_BD_Shape_long_double_t *pph`, `ppl_const_BD_Shape_mpq_class_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_int8_t_with_complexity` (`ppl_BD_Shape_long_double_t *pph`, `ppl_const_Octagonal_Shape_int8_t_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_int16_t_with_complexity` (`ppl_BD_Shape_long_double_t *pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_int32_t_with_complexity` (`ppl_BD_Shape_long_double_t *pph`, `ppl_const_Octagonal_Shape_int32_t_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_int64_t_with_complexity` (`ppl_BD_Shape_long_double_t *pph`, `ppl_const_Octagonal_Shape_int64_t_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_mpz_class_with_complexity` (`ppl_BD_Shape_long_double_t *pph`, `ppl_const_Octagonal_Shape_mpz_class_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_mpq_class_with_complexity` (`ppl_BD_Shape_long_double_t *pph`, `ppl_const_Octagonal_Shape_mpq_class_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_long_double_from_C_Polyhedron_with_complexity` (`ppl_BD_Shape_long_double_t *pph`, `ppl_const_Polyhedron_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_long_double_from_NNC_Polyhedron_with_complexity` (`ppl_BD_Shape_long_double_t *pph`, `ppl_const_Polyhedron_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_long_double_from_Grid_with_complexity` (`ppl_BD_Shape_long_double_t *pph`, `ppl_const_Grid_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_long_double_from_Float_Box_with_complexity` (`ppl_BD_Shape_long_double_t *pph`, `ppl_const_Float_Box_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_long_double_from_BD_Shape_float_with_complexity` (`ppl_BD_Shape_long_double_t *pph`, `ppl_const_BD_Shape_float_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_float_with_complexity` (`ppl_BD_Shape_long_double_t *pph`, `ppl_const_Octagonal_Shape_float_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_long_double_from_Double_Box_with_complexity` (`ppl_BD_Shape_long_double_t *pph`, `ppl_const_Double_Box_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_long_double_from_BD_Shape_double_with_complexity` (`ppl_BD_Shape_long_double_t *pph`, `ppl_const_BD_Shape_double_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_double_with_complexity` (`ppl_BD_Shape_long_double_t *pph`, `ppl_const_Octagonal_Shape_double_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_long_double_from_Long_Double_Box_with_complexity` (`ppl_BD_Shape_long_double_t *pph`, `ppl_const_Long_Double_Box_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_long_double_from_BD_Shape_long_double_with_complexity` (`ppl_BD_Shape_long_double_t *pph`, `ppl_const_BD_Shape_long_double_t ph`, `int complexity`)

- [int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_long_double_with_complexity](#) (ppl_BD_Shape_long_double_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)
- [int ppl_new_BD_Shape_long_double_from_Constraint_System](#) (ppl_BD_Shape_long_double_t *pph, ppl_const_Constraint_System_t cs)
- [int ppl_new_BD_Shape_long_double_from_Congruence_System](#) (ppl_BD_Shape_long_double_t *pph, ppl_const_Congruence_System_t cs)
- [int ppl_new_BD_Shape_long_double_from_Generator_System](#) (ppl_BD_Shape_long_double_t *pph, ppl_const_Generator_System_t cs)
- [int ppl_BD_Shape_long_double_space_dimension](#) (ppl_const_BD_Shape_long_double_t ph, [ppl_dimension_type](#) *m)
- [int ppl_BD_Shape_long_double_affine_dimension](#) (ppl_const_BD_Shape_long_double_t ph, [ppl_dimension_type](#) *m)
- [int ppl_BD_Shape_long_double_relation_with_Constraint](#) (ppl_const_BD_Shape_long_double_t ph, ppl_const_Constraint_t c)
- [int ppl_BD_Shape_long_double_relation_with_Generator](#) (ppl_const_BD_Shape_long_double_t ph, ppl_const_Generator_t c)
- [int ppl_BD_Shape_long_double_relation_with_Congruence](#) (ppl_const_BD_Shape_long_double_t ph, ppl_const_Congruence_t c)
- [int ppl_BD_Shape_long_double_get_constraints](#) (ppl_const_BD_Shape_long_double_t ph, ppl_const_Constraint_System_t *pcs)
- [int ppl_BD_Shape_long_double_get_congruences](#) (ppl_const_BD_Shape_long_double_t ph, ppl_const_Congruence_System_t *pcs)
- [int ppl_BD_Shape_long_double_get_minimized_constraints](#) (ppl_const_BD_Shape_long_double_t ph, ppl_const_Constraint_System_t *pcs)
- [int ppl_BD_Shape_long_double_get_minimized_congruences](#) (ppl_const_BD_Shape_long_double_t ph, ppl_const_Congruence_System_t *pcs)
- [int ppl_BD_Shape_long_double_is_empty](#) (ppl_const_BD_Shape_long_double_t ph)
- [int ppl_BD_Shape_long_double_is_universe](#) (ppl_const_BD_Shape_long_double_t ph)
- [int ppl_BD_Shape_long_double_is_bounded](#) (ppl_const_BD_Shape_long_double_t ph)
- [int ppl_BD_Shape_long_double_contains_integer_point](#) (ppl_const_BD_Shape_long_double_t ph)
- [int ppl_BD_Shape_long_double_is_topologically_closed](#) (ppl_const_BD_Shape_long_double_t ph)
- [int ppl_BD_Shape_long_double_is_discrete](#) (ppl_const_BD_Shape_long_double_t ph)
- [int ppl_BD_Shape_long_double_topological_closure_assign](#) (ppl_BD_Shape_long_double_t ph)
- [int ppl_BD_Shape_long_double_bounds_from_above](#) (ppl_const_BD_Shape_long_double_t ph, ppl_const_Linear_Expression_t le)
- [int ppl_BD_Shape_long_double_bounds_from_below](#) (ppl_const_BD_Shape_long_double_t ph, ppl_const_Linear_Expression_t le)
- [int ppl_BD_Shape_long_double_maximize](#) (ppl_const_BD_Shape_long_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- [int ppl_BD_Shape_long_double_minimize](#) (ppl_const_BD_Shape_long_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- [int ppl_BD_Shape_long_double_maximize_with_point](#) (ppl_const_BD_Shape_long_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- [int ppl_BD_Shape_long_double_minimize_with_point](#) (ppl_const_BD_Shape_long_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- [int ppl_BD_Shape_long_double_frequency](#) (ppl_const_BD_Shape_long_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)

- int [ppl_BD_Shape_long_double_contains_BD_Shape_long_double](#) (ppl_const_BD_Shape_long_double_t x, ppl_const_BD_Shape_long_double_t y)
- int [ppl_BD_Shape_long_double_strictly_contains_BD_Shape_long_double](#) (ppl_const_BD_Shape_long_double_t x, ppl_const_BD_Shape_long_double_t y)
- int [ppl_BD_Shape_long_double_is_disjoint_from_BD_Shape_long_double](#) (ppl_const_BD_Shape_long_double_t x, ppl_const_BD_Shape_long_double_t y)
- int [ppl_BD_Shape_long_double_equals_BD_Shape_long_double](#) (ppl_const_BD_Shape_long_double_t x, ppl_const_BD_Shape_long_double_t y)
- int [ppl_BD_Shape_long_double_OK](#) (ppl_const_BD_Shape_long_double_t ph)
- int [ppl_BD_Shape_long_double_add_constraint](#) (ppl_BD_Shape_long_double_t ph, ppl_const_Constraint_t c)
- int [ppl_BD_Shape_long_double_add_congruence](#) (ppl_BD_Shape_long_double_t ph, ppl_const_Congruence_t c)
- int [ppl_BD_Shape_long_double_add_constraints](#) (ppl_BD_Shape_long_double_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_BD_Shape_long_double_add_congruences](#) (ppl_BD_Shape_long_double_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_BD_Shape_long_double_refine_with_constraint](#) (ppl_BD_Shape_long_double_t ph, ppl_const_Constraint_t c)
- int [ppl_BD_Shape_long_double_refine_with_congruence](#) (ppl_BD_Shape_long_double_t ph, ppl_const_Congruence_t c)
- int [ppl_BD_Shape_long_double_refine_with_constraints](#) (ppl_BD_Shape_long_double_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_BD_Shape_long_double_refine_with_congruences](#) (ppl_BD_Shape_long_double_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_BD_Shape_long_double_intersection_assign](#) (ppl_BD_Shape_long_double_t x, ppl_const_BD_Shape_long_double_t y)
- int [ppl_BD_Shape_long_double_upper_bound_assign](#) (ppl_BD_Shape_long_double_t x, ppl_const_BD_Shape_long_double_t y)
- int [ppl_BD_Shape_long_double_difference_assign](#) (ppl_BD_Shape_long_double_t x, ppl_const_BD_Shape_long_double_t y)
- int [ppl_BD_Shape_long_double_concatenate_assign](#) (ppl_BD_Shape_long_double_t x, ppl_const_BD_Shape_long_double_t y)
- int [ppl_BD_Shape_long_double_time_elapse_assign](#) (ppl_BD_Shape_long_double_t x, ppl_const_BD_Shape_long_double_t y)
- int [ppl_BD_Shape_long_double_upper_bound_assign_if_exact](#) (ppl_BD_Shape_long_double_t x, ppl_const_BD_Shape_long_double_t y)
- int [ppl_BD_Shape_long_double_simplify_using_context_assign](#) (ppl_BD_Shape_long_double_t x, ppl_const_BD_Shape_long_double_t y)
- int [ppl_BD_Shape_long_double_constrains](#) (ppl_BD_Shape_long_double_t ph, [ppl_dimension_type](#) var)
- int [ppl_BD_Shape_long_double_unconstrain_space_dimension](#) (ppl_BD_Shape_long_double_t ph, [ppl_dimension_type](#) var)
- int [ppl_BD_Shape_long_double_unconstrain_space_dimensions](#) (ppl_BD_Shape_long_double_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_BD_Shape_long_double_affine_image](#) (ppl_BD_Shape_long_double_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_BD_Shape_long_double_affine_preimage](#) (ppl_BD_Shape_long_double_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_BD_Shape_long_double_bounded_affine_image](#) (ppl_BD_Shape_long_double_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)

- `int ppl_BD_Shape_long_double_bounded_affine_preimage` (`ppl_BD_Shape_long_double_t` ph, `ppl_dimension_type` var, `ppl_const_Linear_Expression_t` lb, `ppl_const_Linear_Expression_t` ub, `ppl_const_Coefficient_t` d)
- `int ppl_BD_Shape_long_double_generalized_affine_image` (`ppl_BD_Shape_long_double_t` ph, `ppl_dimension_type` var, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- `int ppl_BD_Shape_long_double_generalized_affine_preimage` (`ppl_BD_Shape_long_double_t` ph, `ppl_dimension_type` var, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- `int ppl_BD_Shape_long_double_generalized_affine_image_lhs_rhs` (`ppl_BD_Shape_long_double_t` ph, `ppl_const_Linear_Expression_t` lhs, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` rhs)
- `int ppl_BD_Shape_long_double_generalized_affine_preimage_lhs_rhs` (`ppl_BD_Shape_long_double_t` ph, `ppl_const_Linear_Expression_t` lhs, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` rhs)
- `int ppl_BD_Shape_long_double_add_space_dimensions_and_embed` (`ppl_BD_Shape_long_double_t` ph, `ppl_dimension_type` d)
- `int ppl_BD_Shape_long_double_add_space_dimensions_and_project` (`ppl_BD_Shape_long_double_t` ph, `ppl_dimension_type` d)
- `int ppl_BD_Shape_long_double_remove_space_dimensions` (`ppl_BD_Shape_long_double_t` ph, `ppl_dimension_type` ds[], `size_t` n)
- `int ppl_BD_Shape_long_double_remove_higher_space_dimensions` (`ppl_BD_Shape_long_double_t` ph, `ppl_dimension_type` d)
- `int ppl_BD_Shape_long_double_expand_space_dimension` (`ppl_BD_Shape_long_double_t` ph, `ppl_dimension_type` d, `ppl_dimension_type` m)
- `int ppl_BD_Shape_long_double_fold_space_dimensions` (`ppl_BD_Shape_long_double_t` ph, `ppl_dimension_type` ds[], `size_t` n, `ppl_dimension_type` d)
- `int ppl_BD_Shape_long_double_map_space_dimensions` (`ppl_BD_Shape_long_double_t` ph, `ppl_dimension_type` maps[], `size_t` n)
- `int ppl_BD_Shape_long_double_drop_some_non_integer_points` (`ppl_BD_Shape_long_double_t` ph, `int` complexity)
- `int ppl_BD_Shape_long_double_drop_some_non_integer_points_2` (`ppl_BD_Shape_long_double_t` ph, `ppl_dimension_type` ds[], `size_t` n, `int` complexity)
- `int ppl_BD_Shape_long_double_external_memory_in_bytes` (`ppl_const_BD_Shape_long_double_t` ps, `size_t` *sz)
- `int ppl_BD_Shape_long_double_total_memory_in_bytes` (`ppl_const_BD_Shape_long_double_t` ps, `size_t` *sz)
- `int ppl_BD_Shape_long_double_BHMZ05_widening_assign_with_tokens` (`ppl_BD_Shape_long_double_t` x, `ppl_const_BD_Shape_long_double_t` y, `unsigned` *tp)
- `int ppl_BD_Shape_long_double_H79_widening_assign_with_tokens` (`ppl_BD_Shape_long_double_t` x, `ppl_const_BD_Shape_long_double_t` y, `unsigned` *tp)
- `int ppl_BD_Shape_long_double_BHMZ05_widening_assign` (`ppl_BD_Shape_long_double_t` x, `ppl_const_BD_Shape_long_double_t` y)
- `int ppl_BD_Shape_long_double_H79_widening_assign` (`ppl_BD_Shape_long_double_t` x, `ppl_const_BD_Shape_long_double_t` y)
- `int ppl_BD_Shape_long_double_widening_assign_with_tokens` (`ppl_BD_Shape_long_double_t` x, `ppl_const_BD_Shape_long_double_t` y, `unsigned` *tp)
- `int ppl_BD_Shape_long_double_widening_assign` (`ppl_BD_Shape_long_double_t` x, `ppl_const_BD_Shape_long_double_t` y)
- `int ppl_BD_Shape_long_double_limited_BHMZ05_extrapolation_assign_with_tokens` (`ppl_BD_Shape_long_double_t` x, `ppl_const_BD_Shape_long_double_t` y, `ppl_const_Constraint_System_t` cs, `unsigned` *tp)

- `int ppl_BD_Shape_long_double_limited_H79_extrapolation_assign_with_tokens` (`ppl_BD_Shape_long_double_t x`, `ppl_const_BD_Shape_long_double_t y`, `ppl_const_Constraint_System_t cs`, `unsigned *tp`)
- `int ppl_BD_Shape_long_double_limited_CC76_extrapolation_assign_with_tokens` (`ppl_BD_Shape_long_double_t x`, `ppl_const_BD_Shape_long_double_t y`, `ppl_const_Constraint_System_t cs`, `unsigned *tp`)
- `int ppl_BD_Shape_long_double_limited_BHMZ05_extrapolation_assign` (`ppl_BD_Shape_long_double_t x`, `ppl_const_BD_Shape_long_double_t y`, `ppl_const_Constraint_System_t cs`)
- `int ppl_BD_Shape_long_double_limited_H79_extrapolation_assign` (`ppl_BD_Shape_long_double_t x`, `ppl_const_BD_Shape_long_double_t y`, `ppl_const_Constraint_System_t cs`)
- `int ppl_BD_Shape_long_double_limited_CC76_extrapolation_assign` (`ppl_BD_Shape_long_double_t x`, `ppl_const_BD_Shape_long_double_t y`, `ppl_const_Constraint_System_t cs`)
- `int ppl_BD_Shape_long_double_CC76_extrapolation_assign_with_tokens` (`ppl_BD_Shape_long_double_t x`, `ppl_const_BD_Shape_long_double_t y`, `unsigned *tp`)
- `int ppl_BD_Shape_long_double_CC76_extrapolation_assign` (`ppl_BD_Shape_long_double_t x`, `ppl_const_BD_Shape_long_double_t y`)
- `int ppl_BD_Shape_long_double_CC76_narrowing_assign` (`ppl_BD_Shape_long_double_t x`, `ppl_const_BD_Shape_long_double_t y`)
- `int ppl_BD_Shape_long_double_linear_partition` (`ppl_const_BD_Shape_long_double_t x`, `ppl_const_BD_Shape_long_double_t y`, `ppl_BD_Shape_long_double_t *p_inters`, `ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest`)
- `int ppl_BD_Shape_long_double_wrap_assign` (`ppl_BD_Shape_long_double_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`, `enum ppl_enum_Bounded_Integer_Type_Width w`, `enum ppl_enum_Bounded_Integer_Type_Representation r`, `enum ppl_enum_Bounded_Integer_Type_Overflow o`, `const ppl_const_Constraint_System_t *pcs`, `unsigned complexity_threshold`, `int wrap_individually`)
- `int ppl_new_BD_Shape_long_double_recycle_Constraint_System` (`ppl_BD_Shape_long_double_t *pph`, `ppl_Constraint_System_t cs`)
- `int ppl_new_BD_Shape_long_double_recycle_Congruence_System` (`ppl_BD_Shape_long_double_t *pph`, `ppl_Congruence_System_t cs`)
- `int ppl_new_BD_Shape_long_double_recycle_Generator_System` (`ppl_BD_Shape_long_double_t *pph`, `ppl_Generator_System_t cs`)
- `int ppl_assign_BD_Shape_long_double_from_BD_Shape_long_double` (`ppl_BD_Shape_long_double_t dst`, `ppl_const_BD_Shape_long_double_t src`)
- `int ppl_BD_Shape_long_double_add_recycled_constraints` (`ppl_BD_Shape_long_double_t ph`, `ppl_Constraint_System_t cs`)
- `int ppl_BD_Shape_long_double_add_recycled_congruences` (`ppl_BD_Shape_long_double_t ph`, `ppl_Congruence_System_t cs`)
- `int ppl_termination_test_MS_BD_Shape_long_double` (`ppl_const_BD_Shape_long_double_t pset`)
- `int ppl_termination_test_PR_BD_Shape_long_double` (`ppl_const_BD_Shape_long_double_t pset`)
- `int ppl_one_affine_ranking_function_MS_BD_Shape_long_double` (`ppl_const_BD_Shape_long_double_t pset`, `ppl_Generator_t point`)
- `int ppl_one_affine_ranking_function_PR_BD_Shape_long_double` (`ppl_const_BD_Shape_long_double_t pset`, `ppl_Generator_t point`)
- `int ppl_all_affine_ranking_functions_MS_BD_Shape_long_double` (`ppl_const_BD_Shape_long_double_t pset`, `ppl_Polyhedron_t ph`)
- `int ppl_all_affine_ranking_functions_PR_BD_Shape_long_double` (`ppl_const_BD_Shape_long_double_t pset`, `ppl_Polyhedron_t ph`)
- `int ppl_termination_test_MS_BD_Shape_long_double_2` (`ppl_const_BD_Shape_long_double_t pset_before`, `ppl_const_BD_Shape_long_double_t pset_after`)
- `int ppl_termination_test_PR_BD_Shape_long_double_2` (`ppl_const_BD_Shape_long_double_t pset_before`, `ppl_const_BD_Shape_long_double_t pset_after`)

- int [ppl_one_affine_ranking_function_MS_BD_Shape_long_double_2](#) (ppl_const_BD_Shape_long_double_t pset_before, ppl_const_BD_Shape_long_double_t pset_after, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_BD_Shape_long_double_2](#) (ppl_const_BD_Shape_long_double_t pset_before, ppl_const_BD_Shape_long_double_t pset_after, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_BD_Shape_long_double_2](#) (ppl_const_BD_Shape_long_double_t pset_before, ppl_const_BD_Shape_long_double_t pset_after, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_BD_Shape_long_double_2](#) (ppl_const_BD_Shape_long_double_t pset_before, ppl_const_BD_Shape_long_double_t pset_after, ppl_Polyhedron_t ph)

10.11.1 Detailed Description

Types and functions for [ppl_BD_Shape_long_double_tag](#).

10.11.2 Friends And Related Function Documentation

- 10.11.2.1** int [ppl_all_affine_ranking_functions_MS_BD_Shape_long_double](#) (ppl_const_BD_Shape_long_double_t *pset*, ppl_Polyhedron_t *ph*) [[related](#)]
- 10.11.2.2** int [ppl_all_affine_ranking_functions_MS_BD_Shape_long_double_2](#) (ppl_const_BD_Shape_long_double_t *pset_before*, ppl_const_BD_Shape_long_double_t *pset_after*, ppl_Polyhedron_t *ph*) [[related](#)]
- 10.11.2.3** int [ppl_all_affine_ranking_functions_PR_BD_Shape_long_double](#) (ppl_const_BD_Shape_long_double_t *pset*, ppl_Polyhedron_t *ph*) [[related](#)]
- 10.11.2.4** int [ppl_all_affine_ranking_functions_PR_BD_Shape_long_double_2](#) (ppl_const_BD_Shape_long_double_t *pset_before*, ppl_const_BD_Shape_long_double_t *pset_after*, ppl_Polyhedron_t *ph*) [[related](#)]
- 10.11.2.5** int [ppl_assign_BD_Shape_long_double_from_BD_Shape_long_double](#) (ppl_BD_Shape_long_double_t *dst*, ppl_const_BD_Shape_long_double_t *src*) [[related](#)]

- 10.11.2.6 `int ppl_BD_Shape_long_double_add_congruence (ppl_BD_Shape_long_double_t ph,
ppl_const_Congruence_t c)` [`related`]
- 10.11.2.7 `int ppl_BD_Shape_long_double_add_congruences (ppl_BD_Shape_long_double_t ph,
ppl_const_Congruence_System_t cs)` [`related`]
- 10.11.2.8 `int ppl_BD_Shape_long_double_add_constraint (ppl_BD_Shape_long_double_t ph,
ppl_const_Constraint_t c)` [`related`]
- 10.11.2.9 `int ppl_BD_Shape_long_double_add_constraints (ppl_BD_Shape_long_double_t ph,
ppl_const_Constraint_System_t cs)` [`related`]
- 10.11.2.10 `int ppl_BD_Shape_long_double_add_recycled_congruences
(ppl_BD_Shape_long_double_t ph, ppl_Congruence_System_t cs)` [`related`]
- 10.11.2.11 `int ppl_BD_Shape_long_double_add_recycled_constraints
(ppl_BD_Shape_long_double_t ph, ppl_Constraint_System_t cs)` [`related`]
- 10.11.2.12 `int ppl_BD_Shape_long_double_add_space_dimensions_and_embed
(ppl_BD_Shape_long_double_t ph, ppl_dimension_type d)` [`related`]
- 10.11.2.13 `int ppl_BD_Shape_long_double_add_space_dimensions_and_project
(ppl_BD_Shape_long_double_t ph, ppl_dimension_type d)` [`related`]
- 10.11.2.14 `int ppl_BD_Shape_long_double_affine_dimension (ppl_const_BD_Shape_long_
double_t ph, ppl_dimension_type * m)` [`related`]

- 10.11.2.15 `int ppl_BD_Shape_long_double_affine_image (ppl_BD_Shape_long_double_t ph,
ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t
d)` [related]
- 10.11.2.16 `int ppl_BD_Shape_long_double_affine_preimage (ppl_BD_Shape_long_double_t ph,
ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t
d)` [related]
- 10.11.2.17 `int ppl_BD_Shape_long_double_BHMZ05_widening_assign (ppl_-
BD_Shape_long_double_t x, ppl_const_BD_Shape_long_double_t y)`
[related]
- 10.11.2.18 `int ppl_BD_Shape_long_double_BHMZ05_widening_assign_with_tokens
(ppl_BD_Shape_long_double_t x, ppl_const_BD_Shape_long_double_t y, unsigned *
tp)` [related]
- 10.11.2.19 `int ppl_BD_Shape_long_double_bounded_affine_image (ppl_BD_Shape_long_double_t
ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb,
ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [related]
- 10.11.2.20 `int ppl_BD_Shape_long_double_bounded_affine_preimage (ppl_BD_Shape_-
long_double_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb,
ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [related]
- 10.11.2.21 `int ppl_BD_Shape_long_double_bounds_from_above (ppl_const_-
BD_Shape_long_double_t ph, ppl_const_Linear_Expression_t le)`
[related]
- 10.11.2.22 `int ppl_BD_Shape_long_double_bounds_from_below (ppl_const_-
BD_Shape_long_double_t ph, ppl_const_Linear_Expression_t le)`
[related]

- 10.11.2.23 `int ppl_BD_Shape_long_double_CC76_extrapolation_assign`
(`ppl_BD_Shape_long_double_t x`, `ppl_const_BD_Shape_long_double_t y`)
[related]
- 10.11.2.24 `int ppl_BD_Shape_long_double_CC76_extrapolation_assign_with_tokens`
(`ppl_BD_Shape_long_double_t x`, `ppl_const_BD_Shape_long_double_t y`, `unsigned *tp`) [related]
- 10.11.2.25 `int ppl_BD_Shape_long_double_CC76_narrowing_assign` (`ppl_BD_Shape_long_double_t x`, `ppl_const_BD_Shape_long_double_t y`)
[related]
- 10.11.2.26 `int ppl_BD_Shape_long_double_concatenate_assign` (`ppl_BD_Shape_long_double_t x`, `ppl_const_BD_Shape_long_double_t y`) [related]
- 10.11.2.27 `int ppl_BD_Shape_long_double_constrains` (`ppl_BD_Shape_long_double_t ph`, `ppl_dimension_type var`) [related]
- 10.11.2.28 `int ppl_BD_Shape_long_double_contains_BD_Shape_long_double`
(`ppl_const_BD_Shape_long_double_t x`, `ppl_const_BD_Shape_long_double_t y`)
[related]
- 10.11.2.29 `int ppl_BD_Shape_long_double_contains_integer_point` (`ppl_const_BD_Shape_long_double_t ph`) [related]
- 10.11.2.30 `int ppl_BD_Shape_long_double_difference_assign` (`ppl_BD_Shape_long_double_t x`, `ppl_const_BD_Shape_long_double_t y`) [related]
- 10.11.2.31 `int ppl_BD_Shape_long_double_drop_some_non_integer_points`
(`ppl_BD_Shape_long_double_t ph`, `int complexity`) [related]

- 10.11.2.32 `int ppl_BD_Shape_long_double_drop_some_non_integer_points_2`
 (`ppl_BD_Shape_long_double_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`, `int complexity`)
 [related]
- 10.11.2.33 `int ppl_BD_Shape_long_double_equals_BD_Shape_long_double`
 (`ppl_const_BD_Shape_long_double_t x`, `ppl_const_BD_Shape_long_double_t y`)
 [related]
- 10.11.2.34 `int ppl_BD_Shape_long_double_expand_space_dimension` (`ppl_BD_Shape_long_double_t ph`, `ppl_dimension_type d`, `ppl_dimension_type m`)
 [related]
- 10.11.2.35 `int ppl_BD_Shape_long_double_external_memory_in_bytes`
 (`ppl_const_BD_Shape_long_double_t ps`, `size_t * sz`) [related]
- 10.11.2.36 `int ppl_BD_Shape_long_double_fold_space_dimensions` (`ppl_BD_Shape_long_double_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`, `ppl_dimension_type d`)
 [related]
- 10.11.2.37 `int ppl_BD_Shape_long_double_frequency` (`ppl_const_BD_Shape_long_double_t ph`,
`ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_fn`, `ppl_Coefficient_t ext_fd`,
`ppl_Coefficient_t ext_vn`, `ppl_Coefficient_t ext_vd`) [related]
- 10.11.2.38 `int ppl_BD_Shape_long_double_generalized_affine_image` (`ppl_BD_Shape_long_double_t ph`, `ppl_dimension_type var`, `enum ppl_enum_Constraint_Type relsym`,
`ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`) [related]
- 10.11.2.39 `int ppl_BD_Shape_long_double_generalized_affine_image_lhs_rhs`
 (`ppl_BD_Shape_long_double_t ph`, `ppl_const_Linear_Expression_t lhs`, `enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
 [related]

- 10.11.2.40** `int ppl_BD_Shape_long_double_generalized_affine_preimage (ppl_BD_Shape_long_double_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` **[related]**
- 10.11.2.41** `int ppl_BD_Shape_long_double_generalized_affine_preimage_lhs_rhs (ppl_BD_Shape_long_double_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` **[related]**
- 10.11.2.42** `int ppl_BD_Shape_long_double_get_congruences (ppl_const_BD_Shape_long_double_t ph, ppl_const_Congruence_System_t * pcs)` **[related]**
- 10.11.2.43** `int ppl_BD_Shape_long_double_get_constraints (ppl_const_BD_Shape_long_double_t ph, ppl_const_Constraint_System_t * pcs)` **[related]**
- 10.11.2.44** `int ppl_BD_Shape_long_double_get_minimized_congruences (ppl_const_BD_Shape_long_double_t ph, ppl_const_Congruence_System_t * pcs)` **[related]**
- 10.11.2.45** `int ppl_BD_Shape_long_double_get_minimized_constraints (ppl_const_BD_Shape_long_double_t ph, ppl_const_Constraint_System_t * pcs)` **[related]**
- 10.11.2.46** `int ppl_BD_Shape_long_double_H79_widening_assign (ppl_BD_Shape_long_double_t x, ppl_const_BD_Shape_long_double_t y)` **[related]**
- 10.11.2.47** `int ppl_BD_Shape_long_double_H79_widening_assign_with_tokens (ppl_BD_Shape_long_double_t x, ppl_const_BD_Shape_long_double_t y, unsigned * tp)` **[related]**

- 10.11.2.48 `int ppl_BD_Shape_long_double_intersection_assign (ppl_BD_Shape_long_double_t x, ppl_const_BD_Shape_long_double_t y)` [`related`]
- 10.11.2.49 `int ppl_BD_Shape_long_double_is_bounded (ppl_const_BD_Shape_long_double_t ph)` [`related`]
- 10.11.2.50 `int ppl_BD_Shape_long_double_is_discrete (ppl_const_BD_Shape_long_double_t ph)` [`related`]
- 10.11.2.51 `int ppl_BD_Shape_long_double_is_disjoint_from_BD_Shape_long_double (ppl_const_BD_Shape_long_double_t x, ppl_const_BD_Shape_long_double_t y)` [`related`]
- 10.11.2.52 `int ppl_BD_Shape_long_double_is_empty (ppl_const_BD_Shape_long_double_t ph)` [`related`]
- 10.11.2.53 `int ppl_BD_Shape_long_double_is_topologically_closed (ppl_const_BD_Shape_long_double_t ph)` [`related`]
- 10.11.2.54 `int ppl_BD_Shape_long_double_is_universe (ppl_const_BD_Shape_long_double_t ph)` [`related`]
- 10.11.2.55 `int ppl_BD_Shape_long_double_limited_BHMZ05_extrapolation_assign (ppl_BD_Shape_long_double_t x, ppl_const_BD_Shape_long_double_t y, ppl_const_Constraint_System_t cs)` [`related`]
- 10.11.2.56 `int ppl_BD_Shape_long_double_limited_BHMZ05_extrapolation_assign_with_tokens (ppl_BD_Shape_long_double_t x, ppl_const_BD_Shape_long_double_t y, ppl_const_Constraint_System_t cs, unsigned * tp)` [`related`]

- 10.11.2.57** `int ppl_BD_Shape_long_double_limited_CC76_extrapolation_assign`
 (`ppl_BD_Shape_long_double_t x`, `ppl_const_BD_Shape_long_double_t y`,
`ppl_const_Constraint_System_t cs`) [`related`]
- 10.11.2.58** `int ppl_BD_Shape_long_double_limited_CC76_extrapolation_assign_with_tokens`
 (`ppl_BD_Shape_long_double_t x`, `ppl_const_BD_Shape_long_double_t y`,
`ppl_const_Constraint_System_t cs`, `unsigned * tp`) [`related`]
- 10.11.2.59** `int ppl_BD_Shape_long_double_limited_H79_extrapolation_assign`
 (`ppl_BD_Shape_long_double_t x`, `ppl_const_BD_Shape_long_double_t y`,
`ppl_const_Constraint_System_t cs`) [`related`]
- 10.11.2.60** `int ppl_BD_Shape_long_double_limited_H79_extrapolation_assign_with_tokens`
 (`ppl_BD_Shape_long_double_t x`, `ppl_const_BD_Shape_long_double_t y`,
`ppl_const_Constraint_System_t cs`, `unsigned * tp`) [`related`]
- 10.11.2.61** `int ppl_BD_Shape_long_double_linear_partition` (`ppl_const_BD_Shape_long_double_t`
`x`, `ppl_const_BD_Shape_long_double_t y`, `ppl_BD_Shape_long_double_t * p_inters`,
`ppl_Pointset_Powerset_NNC_Polyhedron_t * p_rest`) [`related`]
- 10.11.2.62** `int ppl_BD_Shape_long_double_map_space_dimensions` (`ppl_BD_-`
`Shape_long_double_t ph`, `ppl_dimension_type maps[]`, `size_t n`)
 [`related`]
- 10.11.2.63** `int ppl_BD_Shape_long_double_maximize` (`ppl_const_BD_Shape_long_double_t ph`,
`ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`,
`int * poptimum`) [`related`]
- 10.11.2.64** `int ppl_BD_Shape_long_double_maximize_with_point` (`ppl_const_BD_Shape_-`
`long_double_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`,
`ppl_Coefficient_t ext_d`, `int * poptimum`, `ppl_Generator_t point`) [`related`]

- 10.11.2.65 `int ppl_BD_Shape_long_double_minimize (ppl_const_BD_Shape_long_double_t ph,
ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d,
int *poptimum)` [related]
- 10.11.2.66 `int ppl_BD_Shape_long_double_minimize_with_point (ppl_const_BD_Shape_
long_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n,
ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` [related]
- 10.11.2.67 `int ppl_BD_Shape_long_double_OK (ppl_const_BD_Shape_long_double_t ph)`
[related]
- 10.11.2.68 `int ppl_BD_Shape_long_double_refine_with_congruence
(ppl_BD_Shape_long_double_t ph, ppl_const_Congruence_t c)` [related]
- 10.11.2.69 `int ppl_BD_Shape_long_double_refine_with_congruences (ppl_
BD_Shape_long_double_t ph, ppl_const_Congruence_System_t cs)`
[related]
- 10.11.2.70 `int ppl_BD_Shape_long_double_refine_with_constraint (ppl_BD_Shape_long_double_t
ph, ppl_const_Constraint_t c)` [related]
- 10.11.2.71 `int ppl_BD_Shape_long_double_refine_with_constraints (ppl_
BD_Shape_long_double_t ph, ppl_const_Constraint_System_t cs)`
[related]
- 10.11.2.72 `int ppl_BD_Shape_long_double_relation_with_Congruence
(ppl_const_BD_Shape_long_double_t ph, ppl_const_Congruence_t c)` [related]
- 10.11.2.73 `int ppl_BD_Shape_long_double_relation_with_Constraint
(ppl_const_BD_Shape_long_double_t ph, ppl_const_Constraint_t c)` [related]

- 10.11.2.74** `int ppl_BD_Shape_long_double_relation_with_Generator`
 (`ppl_const_BD_Shape_long_double_t ph`, `ppl_const_Generator_t c`) [**related**]
- 10.11.2.75** `int ppl_BD_Shape_long_double_remove_higher_space_dimensions`
 (`ppl_BD_Shape_long_double_t ph`, `ppl_dimension_type d`) [**related**]
- 10.11.2.76** `int ppl_BD_Shape_long_double_remove_space_dimensions`
 (`ppl_BD_Shape_long_double_t ph`, `ppl_dimension_type ds[]`, `size_t n`) [**related**]
- 10.11.2.77** `int ppl_BD_Shape_long_double_simplify_using_context_assign`
 (`ppl_BD_Shape_long_double_t x`, `ppl_const_BD_Shape_long_double_t y`)
 [**related**]
- 10.11.2.78** `int ppl_BD_Shape_long_double_space_dimension` (`ppl_const_BD_Shape_long_double_t ph`, `ppl_dimension_type * m`) [**related**]
- 10.11.2.79** `int ppl_BD_Shape_long_double_strictly_contains_BD_Shape_long_double`
 (`ppl_const_BD_Shape_long_double_t x`, `ppl_const_BD_Shape_long_double_t y`)
 [**related**]
- 10.11.2.80** `int ppl_BD_Shape_long_double_time_elapse_assign` (`ppl_BD_Shape_long_double_t x`,
`ppl_const_BD_Shape_long_double_t y`) [**related**]
- 10.11.2.81** `int ppl_BD_Shape_long_double_topological_closure_assign`
 (`ppl_BD_Shape_long_double_t ph`) [**related**]
- 10.11.2.82** `int ppl_BD_Shape_long_double_total_memory_in_bytes`
 (`ppl_const_BD_Shape_long_double_t ps`, `size_t * sz`) [**related**]

- 10.11.2.83** `int ppl_BD_Shape_long_double_unconstrain_space_dimension`
`(ppl_BD_Shape_long_double_t ph, ppl_dimension_type var)` [**related**]
- 10.11.2.84** `int ppl_BD_Shape_long_double_unconstrain_space_dimensions`
`(ppl_BD_Shape_long_double_t ph, ppl_dimension_type ds[], size_t n)` [**related**]
- 10.11.2.85** `int ppl_BD_Shape_long_double_upper_bound_assign` `(ppl_BD_Shape_long_double_t`
`x, ppl_const_BD_Shape_long_double_t y)` [**related**]
- 10.11.2.86** `int ppl_BD_Shape_long_double_upper_bound_assign_if_exact`
`(ppl_BD_Shape_long_double_t x, ppl_const_BD_Shape_long_double_t y)`
[related]
- 10.11.2.87** `int ppl_BD_Shape_long_double_widening_assign` `(ppl_BD_Shape_long_double_t x,
ppl_const_BD_Shape_long_double_t y) [related]`
- 10.11.2.88** `int ppl_BD_Shape_long_double_widening_assign_with_tokens`
`(ppl_BD_Shape_long_double_t x, ppl_const_BD_Shape_long_double_t y, unsigned *
tp) [related]`
- 10.11.2.89** `int ppl_BD_Shape_long_double_wrap_assign` `(ppl_BD_Shape_long_double_t ph,
ppl_dimension_type ds[], size_t n, enum ppl_enum_Bounded_Integer_Type_Width
w, enum ppl_enum_Bounded_Integer_Type_Representation r, enum
ppl_enum_Bounded_Integer_Type_Overflow o, const ppl_const_Constraint_System_t
*pcs, unsigned complexity_threshold, int wrap_individually) [related]`
- 10.11.2.90** `int ppl_delete_BD_Shape_long_double` `(ppl_const_BD_Shape_long_double_t ph)`
[related]

- 10.11.2.91** `int ppl_new_BD_Shape_long_double_from_BD_Shape_double`
(`ppl_BD_Shape_long_double_t *pph`, `ppl_const_BD_Shape_double_t ph`)
[related]
- 10.11.2.92** `int ppl_new_BD_Shape_long_double_from_BD_Shape_double_with_complexity`
(`ppl_BD_Shape_long_double_t *pph`, `ppl_const_BD_Shape_double_t ph`, `int complexity`) [related]
- 10.11.2.93** `int ppl_new_BD_Shape_long_double_from_BD_Shape_float`
(`ppl_BD_Shape_long_double_t *pph`, `ppl_const_BD_Shape_float_t ph`) [related]
- 10.11.2.94** `int ppl_new_BD_Shape_long_double_from_BD_Shape_float_with_complexity`
(`ppl_BD_Shape_long_double_t *pph`, `ppl_const_BD_Shape_float_t ph`, `int complexity`)
[related]
- 10.11.2.95** `int ppl_new_BD_Shape_long_double_from_BD_Shape_int16_t`
(`ppl_BD_Shape_long_double_t *pph`, `ppl_const_BD_Shape_int16_t_t ph`)
[related]
- 10.11.2.96** `int ppl_new_BD_Shape_long_double_from_BD_Shape_int16_t_with_complexity`
(`ppl_BD_Shape_long_double_t *pph`, `ppl_const_BD_Shape_int16_t_t ph`, `int complexity`) [related]
- 10.11.2.97** `int ppl_new_BD_Shape_long_double_from_BD_Shape_int32_t`
(`ppl_BD_Shape_long_double_t *pph`, `ppl_const_BD_Shape_int32_t_t ph`)
[related]
- 10.11.2.98** `int ppl_new_BD_Shape_long_double_from_BD_Shape_int32_t_with_complexity`
(`ppl_BD_Shape_long_double_t *pph`, `ppl_const_BD_Shape_int32_t_t ph`, `int complexity`) [related]

- 10.11.2.99 `int ppl_new_BD_Shape_long_double_from_BD_Shape_int64_t`
 (`ppl_BD_Shape_long_double_t * pph`, `ppl_const_BD_Shape_int64_t_t ph`)
 [related]
- 10.11.2.100 `int ppl_new_BD_Shape_long_double_from_BD_Shape_int64_t_with_complexity`
 (`ppl_BD_Shape_long_double_t * pph`, `ppl_const_BD_Shape_int64_t_t ph`, `int complexity`) [related]
- 10.11.2.101 `int ppl_new_BD_Shape_long_double_from_BD_Shape_int8_t`
 (`ppl_BD_Shape_long_double_t * pph`, `ppl_const_BD_Shape_int8_t_t ph`)
 [related]
- 10.11.2.102 `int ppl_new_BD_Shape_long_double_from_BD_Shape_int8_t_with_complexity`
 (`ppl_BD_Shape_long_double_t * pph`, `ppl_const_BD_Shape_int8_t_t ph`, `int complexity`) [related]
- 10.11.2.103 `int ppl_new_BD_Shape_long_double_from_BD_Shape_long_double`
 (`ppl_BD_Shape_long_double_t * pph`, `ppl_const_BD_Shape_long_double_t_t ph`)
 [related]
- 10.11.2.104 `int ppl_new_BD_Shape_long_double_from_BD_Shape_long_double_with_complexity`
 (`ppl_BD_Shape_long_double_t * pph`, `ppl_const_BD_Shape_long_double_t_t ph`, `int complexity`) [related]
- 10.11.2.105 `int ppl_new_BD_Shape_long_double_from_BD_Shape_mpq_class`
 (`ppl_BD_Shape_long_double_t * pph`, `ppl_const_BD_Shape_mpq_class_t_t ph`)
 [related]
- 10.11.2.106 `int ppl_new_BD_Shape_long_double_from_BD_Shape_mpq_class_with_complexity`
 (`ppl_BD_Shape_long_double_t * pph`, `ppl_const_BD_Shape_mpq_class_t_t ph`, `int complexity`) [related]

- 10.11.2.107 **int ppl_new_BD_Shape_long_double_from_BD_Shape_mpz_class**
 (ppl_BD_Shape_long_double_t * *pph*, ppl_const_BD_Shape_mpz_class_t *ph*)
 [related]
- 10.11.2.108 **int ppl_new_BD_Shape_long_double_from_BD_Shape_mpz_class_with_complexity**
 (ppl_BD_Shape_long_double_t * *pph*, ppl_const_BD_Shape_mpz_class_t *ph*, int *complexity*) [related]
- 10.11.2.109 **int ppl_new_BD_Shape_long_double_from_C_Polyhedron**
 (ppl_BD_Shape_long_double_t * *pph*, ppl_const_Polyhedron_t *ph*) [related]
- 10.11.2.110 **int ppl_new_BD_Shape_long_double_from_C_Polyhedron_with_complexity**
 (ppl_BD_Shape_long_double_t * *pph*, ppl_const_Polyhedron_t *ph*, int *complexity*)
 [related]
- 10.11.2.111 **int ppl_new_BD_Shape_long_double_from_Congruence_System**
 (ppl_BD_Shape_long_double_t * *pph*, ppl_const_Congruence_System_t *cs*)
 [related]
- 10.11.2.112 **int ppl_new_BD_Shape_long_double_from_Constraint_System**
 (ppl_BD_Shape_long_double_t * *pph*, ppl_const_Constraint_System_t *cs*)
 [related]
- 10.11.2.113 **int ppl_new_BD_Shape_long_double_from_Double_Box** (ppl_BD_Shape_long_double_t * *pph*, ppl_const_Double_Box_t *ph*)
 [related]
- 10.11.2.114 **int ppl_new_BD_Shape_long_double_from_Double_Box_with_complexity**
 (ppl_BD_Shape_long_double_t * *pph*, ppl_const_Double_Box_t *ph*, int *complexity*)
 [related]

- 10.11.2.115 `int ppl_new_BD_Shape_long_double_from_Float_Box (ppl_BD_Shape_long_double_t * pph, ppl_const_Float_Box_t ph)` [related]
- 10.11.2.116 `int ppl_new_BD_Shape_long_double_from_Float_Box_with_complexity (ppl_BD_Shape_long_double_t * pph, ppl_const_Float_Box_t ph, int complexity)` [related]
- 10.11.2.117 `int ppl_new_BD_Shape_long_double_from_Generator_System (ppl_BD_Shape_long_double_t * pph, ppl_const_Generator_System_t cs)` [related]
- 10.11.2.118 `int ppl_new_BD_Shape_long_double_from_Grid (ppl_BD_Shape_long_double_t * pph, ppl_const_Grid_t ph)` [related]
- 10.11.2.119 `int ppl_new_BD_Shape_long_double_from_Grid_with_complexity (ppl_BD_Shape_long_double_t * pph, ppl_const_Grid_t ph, int complexity)` [related]
- 10.11.2.120 `int ppl_new_BD_Shape_long_double_from_Int16_Box (ppl_BD_Shape_long_double_t * pph, ppl_const_Int16_Box_t ph)` [related]
- 10.11.2.121 `int ppl_new_BD_Shape_long_double_from_Int16_Box_with_complexity (ppl_BD_Shape_long_double_t * pph, ppl_const_Int16_Box_t ph, int complexity)` [related]
- 10.11.2.122 `int ppl_new_BD_Shape_long_double_from_Int32_Box (ppl_BD_Shape_long_double_t * pph, ppl_const_Int32_Box_t ph)` [related]

- 10.11.2.123 `int ppl_new_BD_Shape_long_double_from_Int32_Box_with_complexity`
(`ppl_BD_Shape_long_double_t * pph`, `ppl_const_Int32_Box_t ph`, `int complexity`)
[related]
- 10.11.2.124 `int ppl_new_BD_Shape_long_double_from_Int64_Box` (`ppl_-`
`BD_Shape_long_double_t * pph`, `ppl_const_Int64_Box_t ph`)
[related]
- 10.11.2.125 `int ppl_new_BD_Shape_long_double_from_Int64_Box_with_complexity`
(`ppl_BD_Shape_long_double_t * pph`, `ppl_const_Int64_Box_t ph`, `int complexity`)
[related]
- 10.11.2.126 `int ppl_new_BD_Shape_long_double_from_Int8_Box` (`ppl_BD_Shape_long_double_t`
`* pph`, `ppl_const_Int8_Box_t ph`) [related]
- 10.11.2.127 `int ppl_new_BD_Shape_long_double_from_Int8_Box_with_complexity`
(`ppl_BD_Shape_long_double_t * pph`, `ppl_const_Int8_Box_t ph`, `int complexity`)
[related]
- 10.11.2.128 `int ppl_new_BD_Shape_long_double_from_Long_Double_Box`
(`ppl_BD_Shape_long_double_t * pph`, `ppl_const_Long_Double_Box_t ph`)
[related]
- 10.11.2.129 `int ppl_new_BD_Shape_long_double_from_Long_Double_Box_with_complexity`
(`ppl_BD_Shape_long_double_t * pph`, `ppl_const_Long_Double_Box_t ph`, `int`
`complexity`) [related]
- 10.11.2.130 `int ppl_new_BD_Shape_long_double_from_NNC_Polyhedron`
(`ppl_BD_Shape_long_double_t * pph`, `ppl_const_Polyhedron_t ph`) [related]

- 10.11.2.131 `int ppl_new_BD_Shape_long_double_from_NNC_Polyhedron_with_complexity`
`(ppl_BD_Shape_long_double_t * pph, ppl_const_Polyhedron_t ph, int complexity)`
`[related]`
- 10.11.2.132 `int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_double`
`(ppl_BD_Shape_long_double_t * pph, ppl_const_Octagonal_Shape_double_t ph)`
`[related]`
- 10.11.2.133 `int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_-`
`double_with_complexity (ppl_BD_Shape_long_double_t * pph,`
`ppl_const_Octagonal_Shape_double_t ph, int complexity) [related]`
- 10.11.2.134 `int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_float`
`(ppl_BD_Shape_long_double_t * pph, ppl_const_Octagonal_Shape_float_t ph)`
`[related]`
- 10.11.2.135 `int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_float_with_complexity`
`(ppl_BD_Shape_long_double_t * pph, ppl_const_Octagonal_Shape_float_t ph, int`
`complexity) [related]`
- 10.11.2.136 `int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_int16_t`
`(ppl_BD_Shape_long_double_t * pph, ppl_const_Octagonal_Shape_int16_t_t ph)`
`[related]`
- 10.11.2.137 `int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_-`
`int16_t_with_complexity (ppl_BD_Shape_long_double_t * pph,`
`ppl_const_Octagonal_Shape_int16_t_t ph, int complexity) [related]`
- 10.11.2.138 `int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_int32_t`
`(ppl_BD_Shape_long_double_t * pph, ppl_const_Octagonal_Shape_int32_t_t ph)`
`[related]`

- 10.11.2.139 `int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_int32_t_with_complexity (ppl_BD_Shape_long_double_t * pph, ppl_const_Octagonal_Shape_int32_t ph, int complexity)` [`related`]
- 10.11.2.140 `int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_int64_t (ppl_BD_Shape_long_double_t * pph, ppl_const_Octagonal_Shape_int64_t ph)` [`related`]
- 10.11.2.141 `int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_int64_t_with_complexity (ppl_BD_Shape_long_double_t * pph, ppl_const_Octagonal_Shape_int64_t ph, int complexity)` [`related`]
- 10.11.2.142 `int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_int8_t (ppl_BD_Shape_long_double_t * pph, ppl_const_Octagonal_Shape_int8_t ph)` [`related`]
- 10.11.2.143 `int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_int8_t_with_complexity (ppl_BD_Shape_long_double_t * pph, ppl_const_Octagonal_Shape_int8_t ph, int complexity)` [`related`]
- 10.11.2.144 `int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_long_double (ppl_BD_Shape_long_double_t * pph, ppl_const_Octagonal_Shape_long_double_t ph)` [`related`]
- 10.11.2.145 `int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_long_double_with_complexity (ppl_BD_Shape_long_double_t * pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)` [`related`]
- 10.11.2.146 `int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_mpq_class (ppl_BD_Shape_long_double_t * pph, ppl_const_Octagonal_Shape_mpq_class_t ph)` [`related`]

- 10.11.2.147 `int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_-
mpq_class_with_complexity (ppl_BD_Shape_long_double_t * pph,
ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)` [related]
- 10.11.2.148 `int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_mpz_class
(ppl_BD_Shape_long_double_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph)`
[related]
- 10.11.2.149 `int ppl_new_BD_Shape_long_double_from_Octagonal_Shape_-
mpz_class_with_complexity (ppl_BD_Shape_long_double_t * pph,
ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)` [related]
- 10.11.2.150 `int ppl_new_BD_Shape_long_double_from_Rational_Box
(ppl_BD_Shape_long_double_t * pph, ppl_const_Rational_Box_t ph)` [related]
- 10.11.2.151 `int ppl_new_BD_Shape_long_double_from_Rational_Box_with_complexity
(ppl_BD_Shape_long_double_t * pph, ppl_const_Rational_Box_t ph, int complexity)`
[related]
- 10.11.2.152 `int ppl_new_BD_Shape_long_double_from_space_dimension
(ppl_BD_Shape_long_double_t * pph, ppl_dimension_type d, int empty)`
[related]
- 10.11.2.153 `int ppl_new_BD_Shape_long_double_from_Uint16_Box (ppl_-
BD_Shape_long_double_t * pph, ppl_const_Uint16_Box_t ph)`
[related]
- 10.11.2.154 `int ppl_new_BD_Shape_long_double_from_Uint16_Box_with_complexity
(ppl_BD_Shape_long_double_t * pph, ppl_const_Uint16_Box_t ph, int complexity)`
[related]

- 10.11.2.155 `int ppl_new_BD_Shape_long_double_from_Uint32_Box (ppl_BD_Shape_long_double_t * pph, ppl_const_Uint32_Box_t ph)`
[related]
- 10.11.2.156 `int ppl_new_BD_Shape_long_double_from_Uint32_Box_with_complexity (ppl_BD_Shape_long_double_t * pph, ppl_const_Uint32_Box_t ph, int complexity)`
[related]
- 10.11.2.157 `int ppl_new_BD_Shape_long_double_from_Uint64_Box (ppl_BD_Shape_long_double_t * pph, ppl_const_Uint64_Box_t ph)`
[related]
- 10.11.2.158 `int ppl_new_BD_Shape_long_double_from_Uint64_Box_with_complexity (ppl_BD_Shape_long_double_t * pph, ppl_const_Uint64_Box_t ph, int complexity)`
[related]
- 10.11.2.159 `int ppl_new_BD_Shape_long_double_from_Uint8_Box (ppl_BD_Shape_long_double_t * pph, ppl_const_Uint8_Box_t ph)`
[related]
- 10.11.2.160 `int ppl_new_BD_Shape_long_double_from_Uint8_Box_with_complexity (ppl_BD_Shape_long_double_t * pph, ppl_const_Uint8_Box_t ph, int complexity)`
[related]
- 10.11.2.161 `int ppl_new_BD_Shape_long_double_from_Z_Box (ppl_BD_Shape_long_double_t * pph, ppl_const_Z_Box_t ph)` [related]
- 10.11.2.162 `int ppl_new_BD_Shape_long_double_from_Z_Box_with_complexity (ppl_BD_Shape_long_double_t * pph, ppl_const_Z_Box_t ph, int complexity)`
[related]

- 10.11.2.163 `int ppl_new_BD_Shape_long_double_recycle_Congruence_System`
`(ppl_BD_Shape_long_double_t * pph, ppl_Congruence_System_t cs)` `[related]`
- 10.11.2.164 `int ppl_new_BD_Shape_long_double_recycle_Constraint_System`
`(ppl_BD_Shape_long_double_t * pph, ppl_Constraint_System_t cs)` `[related]`
- 10.11.2.165 `int ppl_new_BD_Shape_long_double_recycle_Generator_System`
`(ppl_BD_Shape_long_double_t * pph, ppl_Generator_System_t cs)` `[related]`
- 10.11.2.166 `int ppl_one_affine_ranking_function_MS_BD_Shape_long_double`
`(ppl_const_BD_Shape_long_double_t pset, ppl_Generator_t point)` `[related]`
- 10.11.2.167 `int ppl_one_affine_ranking_function_MS_BD_Shape_long_double_2` `(ppl_const_-`
`BD_Shape_long_double_t pset_before, ppl_const_BD_Shape_long_double_t`
`pset_after, ppl_Generator_t point)` `[related]`
- 10.11.2.168 `int ppl_one_affine_ranking_function_PR_BD_Shape_long_double`
`(ppl_const_BD_Shape_long_double_t pset, ppl_Generator_t point)` `[related]`
- 10.11.2.169 `int ppl_one_affine_ranking_function_PR_BD_Shape_long_double_2` `(ppl_const_BD_-`
`Shape_long_double_t pset_before, ppl_const_BD_Shape_long_double_t pset_after,`
`ppl_Generator_t point)` `[related]`
- 10.11.2.170 `int ppl_termination_test_MS_BD_Shape_long_double` `(ppl_const_BD_Shape_long_-`
`double_t pset)` `[related]`
- 10.11.2.171 `int ppl_termination_test_MS_BD_Shape_long_double_2` `(ppl_const_BD_Shape_-`
`long_double_t pset_before, ppl_const_BD_Shape_long_double_t pset_after)`
`[related]`

10.11.2.172 `int ppl_termination_test_PR_BD_Shape_long_double (ppl_const_BD_Shape_long_double_t pset)` [**related**]

10.11.2.173 `int ppl_termination_test_PR_BD_Shape_long_double_2 (ppl_const_BD_Shape_long_double_t pset_before, ppl_const_BD_Shape_long_double_t pset_after)` [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.12 ppl_BD_Shape_mpq_class_tag Interface Reference

Types and functions for [ppl_BD_Shape_mpq_class_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_BD_Shape_mpq_class (ppl_const_BD_Shape_mpq_class_t ph)`
- `int ppl_new_BD_Shape_mpq_class_from_space_dimension (ppl_BD_Shape_mpq_class_t *pph, ppl_dimension_type d, int empty)`
- `int ppl_new_BD_Shape_mpq_class_from_Int8_Box (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Int8_Box_t ph)`
- `int ppl_new_BD_Shape_mpq_class_from_Int16_Box (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Int16_Box_t ph)`
- `int ppl_new_BD_Shape_mpq_class_from_Int32_Box (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Int32_Box_t ph)`
- `int ppl_new_BD_Shape_mpq_class_from_Int64_Box (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Int64_Box_t ph)`
- `int ppl_new_BD_Shape_mpq_class_from_Uint8_Box (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Uint8_Box_t ph)`
- `int ppl_new_BD_Shape_mpq_class_from_Uint16_Box (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Uint16_Box_t ph)`
- `int ppl_new_BD_Shape_mpq_class_from_Uint32_Box (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Uint32_Box_t ph)`
- `int ppl_new_BD_Shape_mpq_class_from_Uint64_Box (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Uint64_Box_t ph)`
- `int ppl_new_BD_Shape_mpq_class_from_Z_Box (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Z_Box_t ph)`
- `int ppl_new_BD_Shape_mpq_class_from_Rational_Box (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Rational_Box_t ph)`
- `int ppl_new_BD_Shape_mpq_class_from_BD_Shape_int8_t (ppl_BD_Shape_mpq_class_t *pph, ppl_const_BD_Shape_int8_t_t ph)`
- `int ppl_new_BD_Shape_mpq_class_from_BD_Shape_int16_t (ppl_BD_Shape_mpq_class_t *pph, ppl_const_BD_Shape_int16_t_t ph)`

- [int ppl_new_BD_Shape_mpq_class_from_BD_Shape_int32_t](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_BD_Shape_int32_t_t ph)
- [int ppl_new_BD_Shape_mpq_class_from_BD_Shape_int64_t](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_BD_Shape_int64_t_t ph)
- [int ppl_new_BD_Shape_mpq_class_from_BD_Shape_mpz_class](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_BD_Shape_mpz_class_t ph)
- [int ppl_new_BD_Shape_mpq_class_from_BD_Shape_mpq_class](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_BD_Shape_mpq_class_t ph)
- [int ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_int8_t](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph)
- [int ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_int16_t](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph)
- [int ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_int32_t](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph)
- [int ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_int64_t](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph)
- [int ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_mpz_class](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph)
- [int ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_mpq_class](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph)
- [int ppl_new_BD_Shape_mpq_class_from_C_Polyhedron](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Polyhedron_t ph)
- [int ppl_new_BD_Shape_mpq_class_from_NNC_Polyhedron](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Polyhedron_t ph)
- [int ppl_new_BD_Shape_mpq_class_from_Grid](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Grid_t ph)
- [int ppl_new_BD_Shape_mpq_class_from_Float_Box](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Float_Box_t ph)
- [int ppl_new_BD_Shape_mpq_class_from_BD_Shape_float](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_BD_Shape_float_t ph)
- [int ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_float](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_float_t ph)
- [int ppl_new_BD_Shape_mpq_class_from_Double_Box](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Double_Box_t ph)
- [int ppl_new_BD_Shape_mpq_class_from_BD_Shape_double](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_BD_Shape_double_t ph)
- [int ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_double](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_double_t ph)
- [int ppl_new_BD_Shape_mpq_class_from_Long_Double_Box](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Long_Double_Box_t ph)
- [int ppl_new_BD_Shape_mpq_class_from_BD_Shape_long_double](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_BD_Shape_long_double_t ph)
- [int ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_long_double](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_long_double_t ph)
- [int ppl_new_BD_Shape_mpq_class_from_Int8_Box_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Int8_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_mpq_class_from_Int16_Box_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Int16_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_mpq_class_from_Int32_Box_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Int32_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_mpq_class_from_Int64_Box_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Int64_Box_t ph, int complexity)

- int [ppl_new_BD_Shape_mpq_class_from_Uint8_Box_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Uint8_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_mpq_class_from_Uint16_Box_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Uint16_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_mpq_class_from_Uint32_Box_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Uint32_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_mpq_class_from_Uint64_Box_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Uint64_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_mpq_class_from_Z_Box_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Z_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_mpq_class_from_Rational_Box_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Rational_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_mpq_class_from_BD_Shape_int8_t_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)
- int [ppl_new_BD_Shape_mpq_class_from_BD_Shape_int16_t_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)
- int [ppl_new_BD_Shape_mpq_class_from_BD_Shape_int32_t_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)
- int [ppl_new_BD_Shape_mpq_class_from_BD_Shape_int64_t_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)
- int [ppl_new_BD_Shape_mpq_class_from_BD_Shape_mpz_class_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_BD_Shape_mpq_class_from_BD_Shape_mpq_class_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_int8_t_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)
- int [ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_int16_t_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)
- int [ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_int32_t_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)
- int [ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_int64_t_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)
- int [ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_mpz_class_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_mpq_class_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_BD_Shape_mpq_class_from_C_Polyhedron_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_BD_Shape_mpq_class_from_NNC_Polyhedron_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_BD_Shape_mpq_class_from_Grid_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Grid_t ph, int complexity)
- int [ppl_new_BD_Shape_mpq_class_from_Float_Box_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Float_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_mpq_class_from_BD_Shape_float_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_BD_Shape_float_t ph, int complexity)
- int [ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_float_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)
- int [ppl_new_BD_Shape_mpq_class_from_Double_Box_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Double_Box_t ph, int complexity)
- int [ppl_new_BD_Shape_mpq_class_from_BD_Shape_double_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_BD_Shape_double_t ph, int complexity)

- [int ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_double_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)
- [int ppl_new_BD_Shape_mpq_class_from_Long_Double_Box_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_mpq_class_from_BD_Shape_long_double_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity)
- [int ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_long_double_with_complexity](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)
- [int ppl_new_BD_Shape_mpq_class_from_Constraint_System](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Constraint_System_t cs)
- [int ppl_new_BD_Shape_mpq_class_from_Congruence_System](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Congruence_System_t cs)
- [int ppl_new_BD_Shape_mpq_class_from_Generator_System](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_const_Generator_System_t cs)
- [int ppl_BD_Shape_mpq_class_space_dimension](#) (ppl_const_BD_Shape_mpq_class_t ph, [ppl_dimension_type](#) *m)
- [int ppl_BD_Shape_mpq_class_affine_dimension](#) (ppl_const_BD_Shape_mpq_class_t ph, [ppl_dimension_type](#) *m)
- [int ppl_BD_Shape_mpq_class_relation_with_Constraint](#) (ppl_const_BD_Shape_mpq_class_t ph, ppl_const_Constraint_t c)
- [int ppl_BD_Shape_mpq_class_relation_with_Generator](#) (ppl_const_BD_Shape_mpq_class_t ph, ppl_const_Generator_t c)
- [int ppl_BD_Shape_mpq_class_relation_with_Congruence](#) (ppl_const_BD_Shape_mpq_class_t ph, ppl_const_Congruence_t c)
- [int ppl_BD_Shape_mpq_class_get_constraints](#) (ppl_const_BD_Shape_mpq_class_t ph, ppl_const_Constraint_System_t *pcs)
- [int ppl_BD_Shape_mpq_class_get_congruences](#) (ppl_const_BD_Shape_mpq_class_t ph, ppl_const_Congruence_System_t *pcs)
- [int ppl_BD_Shape_mpq_class_get_minimized_constraints](#) (ppl_const_BD_Shape_mpq_class_t ph, ppl_const_Constraint_System_t *pcs)
- [int ppl_BD_Shape_mpq_class_get_minimized_congruences](#) (ppl_const_BD_Shape_mpq_class_t ph, ppl_const_Congruence_System_t *pcs)
- [int ppl_BD_Shape_mpq_class_is_empty](#) (ppl_const_BD_Shape_mpq_class_t ph)
- [int ppl_BD_Shape_mpq_class_is_universe](#) (ppl_const_BD_Shape_mpq_class_t ph)
- [int ppl_BD_Shape_mpq_class_is_bounded](#) (ppl_const_BD_Shape_mpq_class_t ph)
- [int ppl_BD_Shape_mpq_class_contains_integer_point](#) (ppl_const_BD_Shape_mpq_class_t ph)
- [int ppl_BD_Shape_mpq_class_is_topologically_closed](#) (ppl_const_BD_Shape_mpq_class_t ph)
- [int ppl_BD_Shape_mpq_class_is_discrete](#) (ppl_const_BD_Shape_mpq_class_t ph)
- [int ppl_BD_Shape_mpq_class_topological_closure_assign](#) (ppl_BD_Shape_mpq_class_t ph)
- [int ppl_BD_Shape_mpq_class_bounds_from_above](#) (ppl_const_BD_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le)
- [int ppl_BD_Shape_mpq_class_bounds_from_below](#) (ppl_const_BD_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le)
- [int ppl_BD_Shape_mpq_class_maximize](#) (ppl_const_BD_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- [int ppl_BD_Shape_mpq_class_minimize](#) (ppl_const_BD_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- [int ppl_BD_Shape_mpq_class_maximize_with_point](#) (ppl_const_BD_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)

- int [ppl_BD_Shape_mpq_class_minimize_with_point](#) (ppl_const_BD_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_BD_Shape_mpq_class_frequency](#) (ppl_const_BD_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)
- int [ppl_BD_Shape_mpq_class_contains_BD_Shape_mpq_class](#) (ppl_const_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y)
- int [ppl_BD_Shape_mpq_class_strictly_contains_BD_Shape_mpq_class](#) (ppl_const_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y)
- int [ppl_BD_Shape_mpq_class_is_disjoint_from_BD_Shape_mpq_class](#) (ppl_const_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y)
- int [ppl_BD_Shape_mpq_class_equals_BD_Shape_mpq_class](#) (ppl_const_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y)
- int [ppl_BD_Shape_mpq_class_OK](#) (ppl_const_BD_Shape_mpq_class_t ph)
- int [ppl_BD_Shape_mpq_class_add_constraint](#) (ppl_BD_Shape_mpq_class_t ph, ppl_const_Constraint_t c)
- int [ppl_BD_Shape_mpq_class_add_congruence](#) (ppl_BD_Shape_mpq_class_t ph, ppl_const_Congruence_t c)
- int [ppl_BD_Shape_mpq_class_add_constraints](#) (ppl_BD_Shape_mpq_class_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_BD_Shape_mpq_class_add_congruences](#) (ppl_BD_Shape_mpq_class_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_BD_Shape_mpq_class_refine_with_constraint](#) (ppl_BD_Shape_mpq_class_t ph, ppl_const_Constraint_t c)
- int [ppl_BD_Shape_mpq_class_refine_with_congruence](#) (ppl_BD_Shape_mpq_class_t ph, ppl_const_Congruence_t c)
- int [ppl_BD_Shape_mpq_class_refine_with_constraints](#) (ppl_BD_Shape_mpq_class_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_BD_Shape_mpq_class_refine_with_congruences](#) (ppl_BD_Shape_mpq_class_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_BD_Shape_mpq_class_intersection_assign](#) (ppl_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y)
- int [ppl_BD_Shape_mpq_class_upper_bound_assign](#) (ppl_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y)
- int [ppl_BD_Shape_mpq_class_difference_assign](#) (ppl_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y)
- int [ppl_BD_Shape_mpq_class_concatenate_assign](#) (ppl_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y)
- int [ppl_BD_Shape_mpq_class_time_elapse_assign](#) (ppl_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y)
- int [ppl_BD_Shape_mpq_class_upper_bound_assign_if_exact](#) (ppl_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y)
- int [ppl_BD_Shape_mpq_class_simplify_using_context_assign](#) (ppl_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y)
- int [ppl_BD_Shape_mpq_class_constrains](#) (ppl_BD_Shape_mpq_class_t ph, [ppl_dimension_type](#) var)
- int [ppl_BD_Shape_mpq_class_unconstrain_space_dimension](#) (ppl_BD_Shape_mpq_class_t ph, [ppl_dimension_type](#) var)
- int [ppl_BD_Shape_mpq_class_unconstrain_space_dimensions](#) (ppl_BD_Shape_mpq_class_t ph, [ppl_dimension_type](#) ds[], size_t n)

- int [ppl_BD_Shape_mpq_class_affine_image](#) (ppl_BD_Shape_mpq_class_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_BD_Shape_mpq_class_affine_preimage](#) (ppl_BD_Shape_mpq_class_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_BD_Shape_mpq_class_bounded_affine_image](#) (ppl_BD_Shape_mpq_class_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_BD_Shape_mpq_class_bounded_affine_preimage](#) (ppl_BD_Shape_mpq_class_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_BD_Shape_mpq_class_generalized_affine_image](#) (ppl_BD_Shape_mpq_class_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_BD_Shape_mpq_class_generalized_affine_preimage](#) (ppl_BD_Shape_mpq_class_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_BD_Shape_mpq_class_generalized_affine_image_lhs_rhs](#) (ppl_BD_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_BD_Shape_mpq_class_generalized_affine_preimage_lhs_rhs](#) (ppl_BD_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_BD_Shape_mpq_class_add_space_dimensions_and_embed](#) (ppl_BD_Shape_mpq_class_t ph, [ppl_dimension_type](#) d)
- int [ppl_BD_Shape_mpq_class_add_space_dimensions_and_project](#) (ppl_BD_Shape_mpq_class_t ph, [ppl_dimension_type](#) d)
- int [ppl_BD_Shape_mpq_class_remove_space_dimensions](#) (ppl_BD_Shape_mpq_class_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_BD_Shape_mpq_class_remove_higher_space_dimensions](#) (ppl_BD_Shape_mpq_class_t ph, [ppl_dimension_type](#) d)
- int [ppl_BD_Shape_mpq_class_expand_space_dimension](#) (ppl_BD_Shape_mpq_class_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_BD_Shape_mpq_class_fold_space_dimensions](#) (ppl_BD_Shape_mpq_class_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_BD_Shape_mpq_class_map_space_dimensions](#) (ppl_BD_Shape_mpq_class_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_BD_Shape_mpq_class_drop_some_non_integer_points](#) (ppl_BD_Shape_mpq_class_t ph, int complexity)
- int [ppl_BD_Shape_mpq_class_drop_some_non_integer_points_2](#) (ppl_BD_Shape_mpq_class_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_BD_Shape_mpq_class_external_memory_in_bytes](#) (ppl_const_BD_Shape_mpq_class_t ps, size_t *sz)
- int [ppl_BD_Shape_mpq_class_total_memory_in_bytes](#) (ppl_const_BD_Shape_mpq_class_t ps, size_t *sz)
- int [ppl_BD_Shape_mpq_class_BHMZ05_widening_assign_with_tokens](#) (ppl_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y, unsigned *tp)
- int [ppl_BD_Shape_mpq_class_H79_widening_assign_with_tokens](#) (ppl_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y, unsigned *tp)
- int [ppl_BD_Shape_mpq_class_BHMZ05_widening_assign](#) (ppl_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y)
- int [ppl_BD_Shape_mpq_class_H79_widening_assign](#) (ppl_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y)

- int [ppl_BD_Shape_mpq_class_widening_assign_with_tokens](#) (ppl_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y, unsigned *tp)
- int [ppl_BD_Shape_mpq_class_widening_assign](#) (ppl_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y)
- int [ppl_BD_Shape_mpq_class_limited_BHMZ05_extrapolation_assign_with_tokens](#) (ppl_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- int [ppl_BD_Shape_mpq_class_limited_H79_extrapolation_assign_with_tokens](#) (ppl_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- int [ppl_BD_Shape_mpq_class_limited_CC76_extrapolation_assign_with_tokens](#) (ppl_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- int [ppl_BD_Shape_mpq_class_limited_BHMZ05_extrapolation_assign](#) (ppl_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y, ppl_const_Constraint_System_t cs)
- int [ppl_BD_Shape_mpq_class_limited_H79_extrapolation_assign](#) (ppl_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y, ppl_const_Constraint_System_t cs)
- int [ppl_BD_Shape_mpq_class_limited_CC76_extrapolation_assign](#) (ppl_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y, ppl_const_Constraint_System_t cs)
- int [ppl_BD_Shape_mpq_class_CC76_extrapolation_assign_with_tokens](#) (ppl_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y, unsigned *tp)
- int [ppl_BD_Shape_mpq_class_CC76_extrapolation_assign](#) (ppl_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y)
- int [ppl_BD_Shape_mpq_class_CC76_narrowing_assign](#) (ppl_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y)
- int [ppl_BD_Shape_mpq_class_linear_partition](#) (ppl_const_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y, ppl_BD_Shape_mpq_class_t *p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest)
- int [ppl_BD_Shape_mpq_class_wrap_assign](#) (ppl_BD_Shape_mpq_class_t ph, [ppl_dimension_type](#) ds[], size_t n, enum [ppl_enum_Bounded_Integer_Type_Width](#) w, enum [ppl_enum_Bounded_Integer_Type_Representation](#) r, enum [ppl_enum_Bounded_Integer_Type_Overflow](#) o, const ppl_const_Constraint_System_t *pcs, unsigned complexity_threshold, int wrap_individually)
- int [ppl_new_BD_Shape_mpq_class_recycle_Constraint_System](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_Constraint_System_t cs)
- int [ppl_new_BD_Shape_mpq_class_recycle_Congruence_System](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_Congruence_System_t cs)
- int [ppl_new_BD_Shape_mpq_class_recycle_Generator_System](#) (ppl_BD_Shape_mpq_class_t *pph, ppl_Generator_System_t cs)
- int [ppl_assign_BD_Shape_mpq_class_from_BD_Shape_mpq_class](#) (ppl_BD_Shape_mpq_class_t dst, ppl_const_BD_Shape_mpq_class_t src)
- int [ppl_BD_Shape_mpq_class_add_recycled_constraints](#) (ppl_BD_Shape_mpq_class_t ph, ppl_Constraint_System_t cs)
- int [ppl_BD_Shape_mpq_class_add_recycled_congruences](#) (ppl_BD_Shape_mpq_class_t ph, ppl_Congruence_System_t cs)
- int [ppl_termination_test_MS_BD_Shape_mpq_class](#) (ppl_const_BD_Shape_mpq_class_t pset)
- int [ppl_termination_test_PR_BD_Shape_mpq_class](#) (ppl_const_BD_Shape_mpq_class_t pset)
- int [ppl_one_affine_ranking_function_MS_BD_Shape_mpq_class](#) (ppl_const_BD_Shape_mpq_class_t pset, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_BD_Shape_mpq_class](#) (ppl_const_BD_Shape_mpq_class_t pset, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_BD_Shape_mpq_class](#) (ppl_const_BD_Shape_mpq_class_t pset, ppl_Polyhedron_t ph)

- `int ppl_all_affine_ranking_functions_PR_BD_Shape_mpq_class` (`ppl_const_BD_Shape_mpq_class_t pset`, `ppl_Polyhedron_t ph`)
- `int ppl_termination_test_MS_BD_Shape_mpq_class_2` (`ppl_const_BD_Shape_mpq_class_t pset_before`, `ppl_const_BD_Shape_mpq_class_t pset_after`)
- `int ppl_termination_test_PR_BD_Shape_mpq_class_2` (`ppl_const_BD_Shape_mpq_class_t pset_before`, `ppl_const_BD_Shape_mpq_class_t pset_after`)
- `int ppl_one_affine_ranking_function_MS_BD_Shape_mpq_class_2` (`ppl_const_BD_Shape_mpq_class_t pset_before`, `ppl_const_BD_Shape_mpq_class_t pset_after`, `ppl_Generator_t point`)
- `int ppl_one_affine_ranking_function_PR_BD_Shape_mpq_class_2` (`ppl_const_BD_Shape_mpq_class_t pset_before`, `ppl_const_BD_Shape_mpq_class_t pset_after`, `ppl_Generator_t point`)
- `int ppl_all_affine_ranking_functions_MS_BD_Shape_mpq_class_2` (`ppl_const_BD_Shape_mpq_class_t pset_before`, `ppl_const_BD_Shape_mpq_class_t pset_after`, `ppl_Polyhedron_t ph`)
- `int ppl_all_affine_ranking_functions_PR_BD_Shape_mpq_class_2` (`ppl_const_BD_Shape_mpq_class_t pset_before`, `ppl_const_BD_Shape_mpq_class_t pset_after`, `ppl_Polyhedron_t ph`)

10.12.1 Detailed Description

Types and functions for `ppl_BD_Shape_mpq_class_tag`.

10.12.2 Friends And Related Function Documentation

- 10.12.2.1** `int ppl_all_affine_ranking_functions_MS_BD_Shape_mpq_class`
(`ppl_const_BD_Shape_mpq_class_t pset`, `ppl_Polyhedron_t ph`) [[related](#)]
- 10.12.2.2** `int ppl_all_affine_ranking_functions_MS_BD_Shape_mpq_class_2`
(`ppl_const_BD_Shape_mpq_class_t pset_before`, `ppl_const_BD_Shape_mpq_class_t pset_after`, `ppl_Polyhedron_t ph`) [[related](#)]
- 10.12.2.3** `int ppl_all_affine_ranking_functions_PR_BD_Shape_mpq_class`
(`ppl_const_BD_Shape_mpq_class_t pset`, `ppl_Polyhedron_t ph`) [[related](#)]
- 10.12.2.4** `int ppl_all_affine_ranking_functions_PR_BD_Shape_mpq_class_2`
(`ppl_const_BD_Shape_mpq_class_t pset_before`, `ppl_const_BD_Shape_mpq_class_t pset_after`, `ppl_Polyhedron_t ph`) [[related](#)]
- 10.12.2.5** `int ppl_assign_BD_Shape_mpq_class_from_BD_Shape_mpq_class`
(`ppl_BD_Shape_mpq_class_t dst`, `ppl_const_BD_Shape_mpq_class_t src`) [[related](#)]

- 10.12.2.6** `int ppl_BD_Shape_mpq_class_add_congruence (ppl_BD_Shape_mpq_class_t ph,
ppl_const_Congruence_t c)` [**related**]
- 10.12.2.7** `int ppl_BD_Shape_mpq_class_add_congruences (ppl_BD_Shape_mpq_class_t ph,
ppl_const_Congruence_System_t cs)` [**related**]
- 10.12.2.8** `int ppl_BD_Shape_mpq_class_add_constraint (ppl_BD_Shape_mpq_class_t ph,
ppl_const_Constraint_t c)` [**related**]
- 10.12.2.9** `int ppl_BD_Shape_mpq_class_add_constraints (ppl_BD_Shape_mpq_class_t ph,
ppl_const_Constraint_System_t cs)` [**related**]
- 10.12.2.10** `int ppl_BD_Shape_mpq_class_add_recycled_congruences
(ppl_BD_Shape_mpq_class_t ph, ppl_Congruence_System_t cs)` [**related**]
- 10.12.2.11** `int ppl_BD_Shape_mpq_class_add_recycled_constraints (ppl_BD_Shape_mpq_class_t
ph, ppl_Constraint_System_t cs)` [**related**]
- 10.12.2.12** `int ppl_BD_Shape_mpq_class_add_space_dimensions_and_embed
(ppl_BD_Shape_mpq_class_t ph, ppl_dimension_type d)` [**related**]
- 10.12.2.13** `int ppl_BD_Shape_mpq_class_add_space_dimensions_and_project
(ppl_BD_Shape_mpq_class_t ph, ppl_dimension_type d)` [**related**]
- 10.12.2.14** `int ppl_BD_Shape_mpq_class_affine_dimension (ppl_const_BD_Shape_mpq_class_t
ph, ppl_dimension_type * m)` [**related**]

- 10.12.2.15 `int ppl_BD_Shape_mpq_class_affine_image (ppl_BD_Shape_mpq_class_t ph,
ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t
d)` [related]
- 10.12.2.16 `int ppl_BD_Shape_mpq_class_affine_preimage (ppl_BD_Shape_mpq_class_t ph,
ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t
d)` [related]
- 10.12.2.17 `int ppl_BD_Shape_mpq_class_BHMZ05_widening_assign (ppl_-
BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y)`
[related]
- 10.12.2.18 `int ppl_BD_Shape_mpq_class_BHMZ05_widening_assign_with_tokens
(ppl_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y, unsigned * tp)`
[related]
- 10.12.2.19 `int ppl_BD_Shape_mpq_class_bounded_affine_image (ppl_BD_Shape_mpq_class_t
ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb,
ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [related]
- 10.12.2.20 `int ppl_BD_Shape_mpq_class_bounded_affine_preimage (ppl_BD_Shape_mpq_class_t
ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb,
ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [related]
- 10.12.2.21 `int ppl_BD_Shape_mpq_class_bounds_from_above (ppl_const_-
BD_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le)`
[related]
- 10.12.2.22 `int ppl_BD_Shape_mpq_class_bounds_from_below (ppl_const_-
BD_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le)`
[related]

- 10.12.2.23 `int ppl_BD_Shape_mpq_class_CC76_extrapolation_assign`
(`ppl_BD_Shape_mpq_class_t x`, `ppl_const_BD_Shape_mpq_class_t y`) [`related`]
- 10.12.2.24 `int ppl_BD_Shape_mpq_class_CC76_extrapolation_assign_with_tokens`
(`ppl_BD_Shape_mpq_class_t x`, `ppl_const_BD_Shape_mpq_class_t y`, `unsigned * tp`)
[`related`]
- 10.12.2.25 `int ppl_BD_Shape_mpq_class_CC76_narrowing_assign` (`ppl_BD_Shape_mpq_class_t x`,
`ppl_const_BD_Shape_mpq_class_t y`) [`related`]
- 10.12.2.26 `int ppl_BD_Shape_mpq_class_concatenate_assign` (`ppl_BD_Shape_mpq_class_t x`,
`ppl_const_BD_Shape_mpq_class_t y`) [`related`]
- 10.12.2.27 `int ppl_BD_Shape_mpq_class_constrains` (`ppl_BD_Shape_mpq_class_t ph`,
`ppl_dimension_type var`) [`related`]
- 10.12.2.28 `int ppl_BD_Shape_mpq_class_contains_BD_Shape_mpq_class`
(`ppl_const_BD_Shape_mpq_class_t x`, `ppl_const_BD_Shape_mpq_class_t y`)
[`related`]
- 10.12.2.29 `int ppl_BD_Shape_mpq_class_contains_integer_point` (`ppl_const_BD_Shape_mpq_`-
`class_t ph`) [`related`]
- 10.12.2.30 `int ppl_BD_Shape_mpq_class_difference_assign` (`ppl_BD_Shape_mpq_class_t x`,
`ppl_const_BD_Shape_mpq_class_t y`) [`related`]
- 10.12.2.31 `int ppl_BD_Shape_mpq_class_drop_some_non_integer_points`
(`ppl_BD_Shape_mpq_class_t ph`, `int complexity`) [`related`]

- 10.12.2.32** `int ppl_BD_Shape_mpq_class_drop_some_non_integer_points_2`
 (`ppl_BD_Shape_mpq_class_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`, `int complexity`)
 [**related**]
- 10.12.2.33** `int ppl_BD_Shape_mpq_class_equals_BD_Shape_mpq_class`
 (`ppl_const_BD_Shape_mpq_class_t x`, `ppl_const_BD_Shape_mpq_class_t y`)
 [**related**]
- 10.12.2.34** `int ppl_BD_Shape_mpq_class_expand_space_dimension` (`ppl_BD_Shape_mpq_class_t`
`ph`, `ppl_dimension_type d`, `ppl_dimension_type m`) [**related**]
- 10.12.2.35** `int ppl_BD_Shape_mpq_class_external_memory_in_bytes`
 (`ppl_const_BD_Shape_mpq_class_t ps`, `size_t * sz`) [**related**]
- 10.12.2.36** `int ppl_BD_Shape_mpq_class_fold_space_dimensions` (`ppl_BD_Shape_mpq_class_t`
`ph`, `ppl_dimension_type ds[ ]`, `size_t n`, `ppl_dimension_type d`) [**related**]
- 10.12.2.37** `int ppl_BD_Shape_mpq_class_frequency` (`ppl_const_BD_Shape_mpq_class_t ph`,
`ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_fn`, `ppl_Coefficient_t ext_fd`,
`ppl_Coefficient_t ext_vn`, `ppl_Coefficient_t ext_vd`) [**related**]
- 10.12.2.38** `int ppl_BD_Shape_mpq_class_generalized_affine_image` (`ppl_BD_Shape_mpq_class_t`
`ph`, `ppl_dimension_type var`, `enum ppl_enum_Constraint_Type relsym`,
`ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`) [**related**]
- 10.12.2.39** `int ppl_BD_Shape_mpq_class_generalized_affine_image_lhs_rhs`
 (`ppl_BD_Shape_mpq_class_t ph`, `ppl_const_Linear_Expression_t lhs`, `enum`
`ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
 [**related**]

- 10.12.2.40** `int ppl_BD_Shape_mpq_class_generalized_affine_preimage (ppl_BD_Shape_mpq_class_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.12.2.41** `int ppl_BD_Shape_mpq_class_generalized_affine_preimage_lhs_rhs (ppl_BD_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` [**related**]
- 10.12.2.42** `int ppl_BD_Shape_mpq_class_get_congruences (ppl_const_BD_Shape_mpq_class_t ph, ppl_const_Congruence_System_t * pcs)` [**related**]
- 10.12.2.43** `int ppl_BD_Shape_mpq_class_get_constraints (ppl_const_BD_Shape_mpq_class_t ph, ppl_const_Constraint_System_t * pcs)` [**related**]
- 10.12.2.44** `int ppl_BD_Shape_mpq_class_get_minimized_congruences (ppl_const_BD_Shape_mpq_class_t ph, ppl_const_Congruence_System_t * pcs)` [**related**]
- 10.12.2.45** `int ppl_BD_Shape_mpq_class_get_minimized_constraints (ppl_const_BD_Shape_mpq_class_t ph, ppl_const_Constraint_System_t * pcs)` [**related**]
- 10.12.2.46** `int ppl_BD_Shape_mpq_class_H79_widening_assign (ppl_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y)` [**related**]
- 10.12.2.47** `int ppl_BD_Shape_mpq_class_H79_widening_assign_with_tokens (ppl_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y, unsigned * tp)` [**related**]

- 10.12.2.48 `int ppl_BD_Shape_mpq_class_intersection_assign (ppl_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y)` [`related`]
- 10.12.2.49 `int ppl_BD_Shape_mpq_class_is_bounded (ppl_const_BD_Shape_mpq_class_t ph)` [`related`]
- 10.12.2.50 `int ppl_BD_Shape_mpq_class_is_discrete (ppl_const_BD_Shape_mpq_class_t ph)` [`related`]
- 10.12.2.51 `int ppl_BD_Shape_mpq_class_is_disjoint_from_BD_Shape_mpq_class (ppl_const_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y)` [`related`]
- 10.12.2.52 `int ppl_BD_Shape_mpq_class_is_empty (ppl_const_BD_Shape_mpq_class_t ph)` [`related`]
- 10.12.2.53 `int ppl_BD_Shape_mpq_class_is_topologically_closed (ppl_const_BD_Shape_mpq_class_t ph)` [`related`]
- 10.12.2.54 `int ppl_BD_Shape_mpq_class_is_universe (ppl_const_BD_Shape_mpq_class_t ph)` [`related`]
- 10.12.2.55 `int ppl_BD_Shape_mpq_class_limited_BHMZ05_extrapolation_assign (ppl_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y, ppl_const_Constraint_System_t cs)` [`related`]
- 10.12.2.56 `int ppl_BD_Shape_mpq_class_limited_BHMZ05_extrapolation_assign_with_tokens (ppl_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y, ppl_const_Constraint_System_t cs, unsigned * tp)` [`related`]

- 10.12.2.57** `int ppl_BD_Shape_mpq_class_limited_CC76_extrapolation_assign`
 (`ppl_BD_Shape_mpq_class_t x`, `ppl_const_BD_Shape_mpq_class_t y`,
`ppl_const_Constraint_System_t cs`) [`related`]
- 10.12.2.58** `int ppl_BD_Shape_mpq_class_limited_CC76_extrapolation_assign_with_tokens`
 (`ppl_BD_Shape_mpq_class_t x`, `ppl_const_BD_Shape_mpq_class_t y`,
`ppl_const_Constraint_System_t cs`, `unsigned *tp`) [`related`]
- 10.12.2.59** `int ppl_BD_Shape_mpq_class_limited_H79_extrapolation_assign`
 (`ppl_BD_Shape_mpq_class_t x`, `ppl_const_BD_Shape_mpq_class_t y`,
`ppl_const_Constraint_System_t cs`) [`related`]
- 10.12.2.60** `int ppl_BD_Shape_mpq_class_limited_H79_extrapolation_assign_with_tokens`
 (`ppl_BD_Shape_mpq_class_t x`, `ppl_const_BD_Shape_mpq_class_t y`,
`ppl_const_Constraint_System_t cs`, `unsigned *tp`) [`related`]
- 10.12.2.61** `int ppl_BD_Shape_mpq_class_linear_partition` (`ppl_const_BD_Shape_mpq_class_t`
`x`, `ppl_const_BD_Shape_mpq_class_t y`, `ppl_BD_Shape_mpq_class_t *p_inters`,
`ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest`) [`related`]
- 10.12.2.62** `int ppl_BD_Shape_mpq_class_map_space_dimensions` (`ppl_BD_Shape_mpq_class_t`
`ph`, `ppl_dimension_type maps[]`, `size_t n`) [`related`]
- 10.12.2.63** `int ppl_BD_Shape_mpq_class_maximize` (`ppl_const_BD_Shape_mpq_class_t ph`,
`ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`,
`int *poptimum`) [`related`]
- 10.12.2.64** `int ppl_BD_Shape_mpq_class_maximize_with_point` (`ppl_const_BD_Shape_-`
`mpq_class_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`,
`ppl_Coefficient_t ext_d`, `int *poptimum`, `ppl_Generator_t point`) [`related`]

- 10.12.2.65 `int ppl_BD_Shape_mpq_class_minimize (ppl_const_BD_Shape_mpq_class_t ph,
ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d,
int * poptimum)` [`related`]
- 10.12.2.66 `int ppl_BD_Shape_mpq_class_minimize_with_point (ppl_const_BD_Shape_
mpq_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n,
ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` [`related`]
- 10.12.2.67 `int ppl_BD_Shape_mpq_class_OK (ppl_const_BD_Shape_mpq_class_t ph)`
[`related`]
- 10.12.2.68 `int ppl_BD_Shape_mpq_class_refine_with_congruence (ppl_BD_Shape_mpq_class_t
ph, ppl_const_Congruence_t c)` [`related`]
- 10.12.2.69 `int ppl_BD_Shape_mpq_class_refine_with_congruences (ppl_BD_Shape_mpq_class_t
ph, ppl_const_Congruence_System_t cs)` [`related`]
- 10.12.2.70 `int ppl_BD_Shape_mpq_class_refine_with_constraint (ppl_BD_Shape_mpq_class_t ph,
ppl_const_Constraint_t c)` [`related`]
- 10.12.2.71 `int ppl_BD_Shape_mpq_class_refine_with_constraints (ppl_BD_Shape_mpq_class_t
ph, ppl_const_Constraint_System_t cs)` [`related`]
- 10.12.2.72 `int ppl_BD_Shape_mpq_class_relation_with_Congruence
(ppl_const_BD_Shape_mpq_class_t ph, ppl_const_Congruence_t c)` [`related`]
- 10.12.2.73 `int ppl_BD_Shape_mpq_class_relation_with_Constraint (ppl_
const_BD_Shape_mpq_class_t ph, ppl_const_Constraint_t c)`
[`related`]

- 10.12.2.74 `int ppl_BD_Shape_mpq_class_relation_with_Generator (ppl_const_BD_Shape_mpq_class_t ph, ppl_const_Generator_t c)` `[related]`
- 10.12.2.75 `int ppl_BD_Shape_mpq_class_remove_higher_space_dimensions (ppl_BD_Shape_mpq_class_t ph, ppl_dimension_type d)` `[related]`
- 10.12.2.76 `int ppl_BD_Shape_mpq_class_remove_space_dimensions (ppl_BD_Shape_mpq_class_t ph, ppl_dimension_type ds[], size_t n)` `[related]`
- 10.12.2.77 `int ppl_BD_Shape_mpq_class_simplify_using_context_assign (ppl_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y)` `[related]`
- 10.12.2.78 `int ppl_BD_Shape_mpq_class_space_dimension (ppl_const_BD_Shape_mpq_class_t ph, ppl_dimension_type * m)` `[related]`
- 10.12.2.79 `int ppl_BD_Shape_mpq_class_strictly_contains_BD_Shape_mpq_class (ppl_const_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y)` `[related]`
- 10.12.2.80 `int ppl_BD_Shape_mpq_class_time_elapse_assign (ppl_BD_Shape_mpq_class_t x, ppl_const_BD_Shape_mpq_class_t y)` `[related]`
- 10.12.2.81 `int ppl_BD_Shape_mpq_class_topological_closure_assign (ppl_BD_Shape_mpq_class_t ph)` `[related]`
- 10.12.2.82 `int ppl_BD_Shape_mpq_class_total_memory_in_bytes (ppl_const_BD_Shape_mpq_class_t ps, size_t * sz)` `[related]`

- 10.12.2.83** `int ppl_BD_Shape_mpq_class_unconstrain_space_dimension`
 (`ppl_BD_Shape_mpq_class_t ph`, `ppl_dimension_type var`) [**related**]
- 10.12.2.84** `int ppl_BD_Shape_mpq_class_unconstrain_space_dimensions`
 (`ppl_BD_Shape_mpq_class_t ph`, `ppl_dimension_type ds[]`, `size_t n`) [**related**]
- 10.12.2.85** `int ppl_BD_Shape_mpq_class_upper_bound_assign` (`ppl_BD_Shape_mpq_class_t x`,
`ppl_const_BD_Shape_mpq_class_t y`) [**related**]
- 10.12.2.86** `int ppl_BD_Shape_mpq_class_upper_bound_assign_if_exact`
 (`ppl_BD_Shape_mpq_class_t x`, `ppl_const_BD_Shape_mpq_class_t y`) [**related**]
- 10.12.2.87** `int ppl_BD_Shape_mpq_class_widening_assign` (`ppl_BD_Shape_mpq_class_t x`,
`ppl_const_BD_Shape_mpq_class_t y`) [**related**]
- 10.12.2.88** `int ppl_BD_Shape_mpq_class_widening_assign_with_tokens` (`ppl_BD_-`
`Shape_mpq_class_t x`, `ppl_const_BD_Shape_mpq_class_t y`, `unsigned * tp`)
 [**related**]
- 10.12.2.89** `int ppl_BD_Shape_mpq_class_wrap_assign` (`ppl_BD_Shape_mpq_class_t ph`,
`ppl_dimension_type ds[]`, `size_t n`, `enum ppl_enum_Bounded_Integer_Type_Width`
`w`, `enum ppl_enum_Bounded_Integer_Type_Representation r`, `enum`
`ppl_enum_Bounded_Integer_Type_Overflow o`, `const ppl_const_Constraint_System_t`
`* pcs`, `unsigned complexity_threshold`, `int wrap_individually`) [**related**]
- 10.12.2.90** `int ppl_delete_BD_Shape_mpq_class` (`ppl_const_BD_Shape_mpq_class_t ph`)
 [**related**]
- 10.12.2.91** `int ppl_new_BD_Shape_mpq_class_from_BD_Shape_double`
 (`ppl_BD_Shape_mpq_class_t * pph`, `ppl_const_BD_Shape_double_t ph`) [**related**]

- 10.12.2.92** `int ppl_new_BD_Shape_mpq_class_from_BD_Shape_double_with_complexity`
(`ppl_BD_Shape_mpq_class_t * pph`, `ppl_const_BD_Shape_double_t ph`, `int complexity`) [`related`]
- 10.12.2.93** `int ppl_new_BD_Shape_mpq_class_from_BD_Shape_float` (`ppl_BD_Shape_mpq_class_t * pph`, `ppl_const_BD_Shape_float_t ph`) [`related`]
- 10.12.2.94** `int ppl_new_BD_Shape_mpq_class_from_BD_Shape_float_with_complexity`
(`ppl_BD_Shape_mpq_class_t * pph`, `ppl_const_BD_Shape_float_t ph`, `int complexity`) [`related`]
- 10.12.2.95** `int ppl_new_BD_Shape_mpq_class_from_BD_Shape_int16_t`
(`ppl_BD_Shape_mpq_class_t * pph`, `ppl_const_BD_Shape_int16_t_t ph`) [`related`]
- 10.12.2.96** `int ppl_new_BD_Shape_mpq_class_from_BD_Shape_int16_t_with_complexity`
(`ppl_BD_Shape_mpq_class_t * pph`, `ppl_const_BD_Shape_int16_t_t ph`, `int complexity`) [`related`]
- 10.12.2.97** `int ppl_new_BD_Shape_mpq_class_from_BD_Shape_int32_t`
(`ppl_BD_Shape_mpq_class_t * pph`, `ppl_const_BD_Shape_int32_t_t ph`) [`related`]
- 10.12.2.98** `int ppl_new_BD_Shape_mpq_class_from_BD_Shape_int32_t_with_complexity`
(`ppl_BD_Shape_mpq_class_t * pph`, `ppl_const_BD_Shape_int32_t_t ph`, `int complexity`) [`related`]
- 10.12.2.99** `int ppl_new_BD_Shape_mpq_class_from_BD_Shape_int64_t`
(`ppl_BD_Shape_mpq_class_t * pph`, `ppl_const_BD_Shape_int64_t_t ph`) [`related`]

- 10.12.2.100 `int ppl_new_BD_Shape_mpq_class_from_BD_Shape_int64_t_with_complexity`
 (`ppl_BD_Shape_mpq_class_t *pph`, `ppl_const_BD_Shape_int64_t_t ph`, `int complexity`) [`related`]
- 10.12.2.101 `int ppl_new_BD_Shape_mpq_class_from_BD_Shape_int8_t`
 (`ppl_BD_Shape_mpq_class_t *pph`, `ppl_const_BD_Shape_int8_t_t ph`) [`related`]
- 10.12.2.102 `int ppl_new_BD_Shape_mpq_class_from_BD_Shape_int8_t_with_complexity`
 (`ppl_BD_Shape_mpq_class_t *pph`, `ppl_const_BD_Shape_int8_t_t ph`, `int complexity`) [`related`]
- 10.12.2.103 `int ppl_new_BD_Shape_mpq_class_from_BD_Shape_long_double`
 (`ppl_BD_Shape_mpq_class_t *pph`, `ppl_const_BD_Shape_long_double_t ph`) [`related`]
- 10.12.2.104 `int ppl_new_BD_Shape_mpq_class_from_BD_Shape_long_double_with_complexity`
 (`ppl_BD_Shape_mpq_class_t *pph`, `ppl_const_BD_Shape_long_double_t ph`, `int complexity`) [`related`]
- 10.12.2.105 `int ppl_new_BD_Shape_mpq_class_from_BD_Shape_mpq_class`
 (`ppl_BD_Shape_mpq_class_t *pph`, `ppl_const_BD_Shape_mpq_class_t ph`) [`related`]
- 10.12.2.106 `int ppl_new_BD_Shape_mpq_class_from_BD_Shape_mpq_class_with_complexity`
 (`ppl_BD_Shape_mpq_class_t *pph`, `ppl_const_BD_Shape_mpq_class_t ph`, `int complexity`) [`related`]
- 10.12.2.107 `int ppl_new_BD_Shape_mpq_class_from_BD_Shape_mpz_class`
 (`ppl_BD_Shape_mpq_class_t *pph`, `ppl_const_BD_Shape_mpz_class_t ph`) [`related`]

- 10.12.2.108** int ppl_new_BD_Shape_mpq_class_from_BD_Shape_mpz_class_with_complexity
(ppl_BD_Shape_mpq_class_t * *pph*, ppl_const_BD_Shape_mpz_class_t *ph*, int *complexity*) [**related**]
- 10.12.2.109** int ppl_new_BD_Shape_mpq_class_from_C_Polyhedron
(ppl_BD_Shape_mpq_class_t * *pph*, ppl_const_Polyhedron_t *ph*) [**related**]
- 10.12.2.110** int ppl_new_BD_Shape_mpq_class_from_C_Polyhedron_with_complexity
(ppl_BD_Shape_mpq_class_t * *pph*, ppl_const_Polyhedron_t *ph*, int *complexity*)
[**related**]
- 10.12.2.111** int ppl_new_BD_Shape_mpq_class_from_Congruence_System
(ppl_BD_Shape_mpq_class_t * *pph*, ppl_const_Congruence_System_t *cs*)
[**related**]
- 10.12.2.112** int ppl_new_BD_Shape_mpq_class_from_Constraint_System
(ppl_BD_Shape_mpq_class_t * *pph*, ppl_const_Constraint_System_t *cs*)
[**related**]
- 10.12.2.113** int ppl_new_BD_Shape_mpq_class_from_Double_Box (ppl_BD_Shape_mpq_class_t
* *pph*, ppl_const_Double_Box_t *ph*) [**related**]
- 10.12.2.114** int ppl_new_BD_Shape_mpq_class_from_Double_Box_with_complexity
(ppl_BD_Shape_mpq_class_t * *pph*, ppl_const_Double_Box_t *ph*, int *complexity*)
[**related**]
- 10.12.2.115** int ppl_new_BD_Shape_mpq_class_from_Float_Box (ppl_BD_Shape_mpq_class_t *
pph, ppl_const_Float_Box_t *ph*) [**related**]

- 10.12.2.116 `int ppl_new_BD_Shape_mpq_class_from_Float_Box_with_complexity`
 (`ppl_BD_Shape_mpq_class_t * pph`, `ppl_const_Float_Box_t ph`, `int complexity`)
 [`related`]
- 10.12.2.117 `int ppl_new_BD_Shape_mpq_class_from_Generator_System`
 (`ppl_BD_Shape_mpq_class_t * pph`, `ppl_const_Generator_System_t cs`)
 [`related`]
- 10.12.2.118 `int ppl_new_BD_Shape_mpq_class_from_Grid` (`ppl_BD_Shape_mpq_class_t * pph`,
`ppl_const_Grid_t ph`) [`related`]
- 10.12.2.119 `int ppl_new_BD_Shape_mpq_class_from_Grid_with_complexity`
 (`ppl_BD_Shape_mpq_class_t * pph`, `ppl_const_Grid_t ph`, `int complexity`)
 [`related`]
- 10.12.2.120 `int ppl_new_BD_Shape_mpq_class_from_Int16_Box` (`ppl_BD_Shape_mpq_class_t *`
`pph`, `ppl_const_Int16_Box_t ph`) [`related`]
- 10.12.2.121 `int ppl_new_BD_Shape_mpq_class_from_Int16_Box_with_complexity`
 (`ppl_BD_Shape_mpq_class_t * pph`, `ppl_const_Int16_Box_t ph`, `int complexity`)
 [`related`]
- 10.12.2.122 `int ppl_new_BD_Shape_mpq_class_from_Int32_Box` (`ppl_BD_Shape_mpq_class_t *`
`pph`, `ppl_const_Int32_Box_t ph`) [`related`]
- 10.12.2.123 `int ppl_new_BD_Shape_mpq_class_from_Int32_Box_with_complexity`
 (`ppl_BD_Shape_mpq_class_t * pph`, `ppl_const_Int32_Box_t ph`, `int complexity`)
 [`related`]

10.12.2.124 `int ppl_new_BD_Shape_mpq_class_from_Int64_Box (ppl_BD_Shape_mpq_class_t * pph, ppl_const_Int64_Box_t ph)` [**related**]

10.12.2.125 `int ppl_new_BD_Shape_mpq_class_from_Int64_Box_with_complexity (ppl_BD_Shape_mpq_class_t * pph, ppl_const_Int64_Box_t ph, int complexity)` [**related**]

10.12.2.126 `int ppl_new_BD_Shape_mpq_class_from_Int8_Box (ppl_BD_Shape_mpq_class_t * pph, ppl_const_Int8_Box_t ph)` [**related**]

10.12.2.127 `int ppl_new_BD_Shape_mpq_class_from_Int8_Box_with_complexity (ppl_BD_Shape_mpq_class_t * pph, ppl_const_Int8_Box_t ph, int complexity)` [**related**]

10.12.2.128 `int ppl_new_BD_Shape_mpq_class_from_Long_Double_Box (ppl_BD_Shape_mpq_class_t * pph, ppl_const_Long_Double_Box_t ph)` [**related**]

10.12.2.129 `int ppl_new_BD_Shape_mpq_class_from_Long_Double_Box_with_complexity (ppl_BD_Shape_mpq_class_t * pph, ppl_const_Long_Double_Box_t ph, int complexity)` [**related**]

10.12.2.130 `int ppl_new_BD_Shape_mpq_class_from_NNC_Polyhedron (ppl_BD_Shape_mpq_class_t * pph, ppl_const_Polyhedron_t ph)` [**related**]

10.12.2.131 `int ppl_new_BD_Shape_mpq_class_from_NNC_Polyhedron_with_complexity (ppl_BD_Shape_mpq_class_t * pph, ppl_const_Polyhedron_t ph, int complexity)` [**related**]

- 10.12.2.132 `int ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_double`
 (`ppl_BD_Shape_mpq_class_t *pph`, `ppl_const_Octagonal_Shape_double_t ph`)
 [related]
- 10.12.2.133 `int ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_double_with_complexity`
 (`ppl_BD_Shape_mpq_class_t *pph`, `ppl_const_Octagonal_Shape_double_t ph`, `int complexity`) [related]
- 10.12.2.134 `int ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_float`
 (`ppl_BD_Shape_mpq_class_t *pph`, `ppl_const_Octagonal_Shape_float_t ph`)
 [related]
- 10.12.2.135 `int ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_float_with_complexity`
 (`ppl_BD_Shape_mpq_class_t *pph`, `ppl_const_Octagonal_Shape_float_t ph`, `int complexity`) [related]
- 10.12.2.136 `int ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_int16_t`
 (`ppl_BD_Shape_mpq_class_t *pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`)
 [related]
- 10.12.2.137 `int ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_int16_t_with_complexity`
 (`ppl_BD_Shape_mpq_class_t *pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`, `int complexity`) [related]
- 10.12.2.138 `int ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_int32_t`
 (`ppl_BD_Shape_mpq_class_t *pph`, `ppl_const_Octagonal_Shape_int32_t_t ph`)
 [related]
- 10.12.2.139 `int ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_int32_t_with_complexity`
 (`ppl_BD_Shape_mpq_class_t *pph`, `ppl_const_Octagonal_Shape_int32_t_t ph`, `int complexity`) [related]

- 10.12.2.140 `int ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_int64_t`
(`ppl_BD_Shape_mpq_class_t * pph`, `ppl_const_Octagonal_Shape_int64_t_t ph`)
[related]
- 10.12.2.141 `int ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_int64_t_with_complexity`
(`ppl_BD_Shape_mpq_class_t * pph`, `ppl_const_Octagonal_Shape_int64_t_t ph`, `int complexity`) [related]
- 10.12.2.142 `int ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_int8_t`
(`ppl_BD_Shape_mpq_class_t * pph`, `ppl_const_Octagonal_Shape_int8_t_t ph`)
[related]
- 10.12.2.143 `int ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_int8_t_with_complexity`
(`ppl_BD_Shape_mpq_class_t * pph`, `ppl_const_Octagonal_Shape_int8_t_t ph`, `int complexity`) [related]
- 10.12.2.144 `int ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_long_double`
(`ppl_BD_Shape_mpq_class_t * pph`, `ppl_const_Octagonal_Shape_long_double_t ph`)
[related]
- 10.12.2.145 `int ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_-`
`long_double_with_complexity` (`ppl_BD_Shape_mpq_class_t * pph`,
`ppl_const_Octagonal_Shape_long_double_t ph`, `int complexity`) [related]
- 10.12.2.146 `int ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_mpq_class`
(`ppl_BD_Shape_mpq_class_t * pph`, `ppl_const_Octagonal_Shape_mpq_class_t ph`)
[related]
- 10.12.2.147 `int ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_-`
`mpq_class_with_complexity` (`ppl_BD_Shape_mpq_class_t * pph`,
`ppl_const_Octagonal_Shape_mpq_class_t ph`, `int complexity`) [related]

- 10.12.2.148 `int ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_mpz_class`
`(ppl_BD_Shape_mpq_class_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph)`
`[related]`
- 10.12.2.149 `int ppl_new_BD_Shape_mpq_class_from_Octagonal_Shape_-`
`mpz_class_with_complexity (ppl_BD_Shape_mpq_class_t * pph,`
`ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity) [related]`
- 10.12.2.150 `int ppl_new_BD_Shape_mpq_class_from_Rational_Box` `(ppl_BD_Shape_mpq_class_t`
`* pph, ppl_const_Rational_Box_t ph) [related]`
- 10.12.2.151 `int ppl_new_BD_Shape_mpq_class_from_Rational_Box_with_complexity`
`(ppl_BD_Shape_mpq_class_t * pph, ppl_const_Rational_Box_t ph, int complexity)`
`[related]`
- 10.12.2.152 `int ppl_new_BD_Shape_mpq_class_from_space_dimension`
`(ppl_BD_Shape_mpq_class_t * pph, ppl_dimension_type d, int empty) [related]`
- 10.12.2.153 `int ppl_new_BD_Shape_mpq_class_from_Uint16_Box` `(ppl_BD_Shape_mpq_class_t *`
`pph, ppl_const_Uint16_Box_t ph) [related]`
- 10.12.2.154 `int ppl_new_BD_Shape_mpq_class_from_Uint16_Box_with_complexity`
`(ppl_BD_Shape_mpq_class_t * pph, ppl_const_Uint16_Box_t ph, int complexity)`
`[related]`
- 10.12.2.155 `int ppl_new_BD_Shape_mpq_class_from_Uint32_Box` `(ppl_BD_Shape_mpq_class_t *`
`pph, ppl_const_Uint32_Box_t ph) [related]`

- 10.12.2.156 `int ppl_new_BD_Shape_mpq_class_from_Uint32_Box_with_complexity`
 (`ppl_BD_Shape_mpq_class_t * pph`, `ppl_const_Uint32_Box_t ph`, `int complexity`)
 [related]
- 10.12.2.157 `int ppl_new_BD_Shape_mpq_class_from_Uint64_Box` (`ppl_BD_Shape_mpq_class_t *`
`pph`, `ppl_const_Uint64_Box_t ph`) [related]
- 10.12.2.158 `int ppl_new_BD_Shape_mpq_class_from_Uint64_Box_with_complexity`
 (`ppl_BD_Shape_mpq_class_t * pph`, `ppl_const_Uint64_Box_t ph`, `int complexity`)
 [related]
- 10.12.2.159 `int ppl_new_BD_Shape_mpq_class_from_Uint8_Box` (`ppl_BD_Shape_mpq_class_t *`
`pph`, `ppl_const_Uint8_Box_t ph`) [related]
- 10.12.2.160 `int ppl_new_BD_Shape_mpq_class_from_Uint8_Box_with_complexity`
 (`ppl_BD_Shape_mpq_class_t * pph`, `ppl_const_Uint8_Box_t ph`, `int complexity`)
 [related]
- 10.12.2.161 `int ppl_new_BD_Shape_mpq_class_from_Z_Box` (`ppl_BD_Shape_mpq_class_t * pph`,
`ppl_const_Z_Box_t ph`) [related]
- 10.12.2.162 `int ppl_new_BD_Shape_mpq_class_from_Z_Box_with_complexity`
 (`ppl_BD_Shape_mpq_class_t * pph`, `ppl_const_Z_Box_t ph`, `int complexity`)
 [related]
- 10.12.2.163 `int ppl_new_BD_Shape_mpq_class_recycle_Congruence_System`
 (`ppl_BD_Shape_mpq_class_t * pph`, `ppl_Congruence_System_t cs`) [related]
- 10.12.2.164 `int ppl_new_BD_Shape_mpq_class_recycle_Constraint_System`
 (`ppl_BD_Shape_mpq_class_t * pph`, `ppl_Constraint_System_t cs`) [related]

- 10.12.2.165 `int ppl_new_BD_Shape_mpq_class_recycle_Generator_System`
`(ppl_BD_Shape_mpq_class_t * pph, ppl_Generator_System_t cs)` [**related**]
- 10.12.2.166 `int ppl_one_affine_ranking_function_MS_BD_Shape_mpq_class`
`(ppl_const_BD_Shape_mpq_class_t pset, ppl_Generator_t point)` [**related**]
- 10.12.2.167 `int ppl_one_affine_ranking_function_MS_BD_Shape_mpq_class_2`
`(ppl_const_BD_Shape_mpq_class_t pset_before, ppl_const_BD_Shape_mpq_class_t`
`pset_after, ppl_Generator_t point)` [**related**]
- 10.12.2.168 `int ppl_one_affine_ranking_function_PR_BD_Shape_mpq_class`
`(ppl_const_BD_Shape_mpq_class_t pset, ppl_Generator_t point)` [**related**]
- 10.12.2.169 `int ppl_one_affine_ranking_function_PR_BD_Shape_mpq_class_2`
`(ppl_const_BD_Shape_mpq_class_t pset_before, ppl_const_BD_Shape_mpq_class_t`
`pset_after, ppl_Generator_t point)` [**related**]
- 10.12.2.170 `int ppl_termination_test_MS_BD_Shape_mpq_class` (`ppl_const_BD_Shape_mpq_-`
`class_t pset)` [**related**]
- 10.12.2.171 `int ppl_termination_test_MS_BD_Shape_mpq_class_2` (`ppl_const_BD_Shape_-`
`mpq_class_t pset_before, ppl_const_BD_Shape_mpq_class_t pset_after)`
[related]
- 10.12.2.172 `int ppl_termination_test_PR_BD_Shape_mpq_class` (`ppl_const_BD_Shape_mpq_-`
`class_t pset)` [**related**]
- 10.12.2.173 `int ppl_termination_test_PR_BD_Shape_mpq_class_2` (`ppl_const_BD_Shape_-`
`mpq_class_t pset_before, ppl_const_BD_Shape_mpq_class_t pset_after)`
[related]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.13 ppl_BD_Shape_mpz_class_tag Interface Reference

Types and functions for [ppl_BD_Shape_mpz_class_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- [int ppl_delete_BD_Shape_mpz_class](#) ([ppl_const_BD_Shape_mpz_class_t](#) ph)
- [int ppl_new_BD_Shape_mpz_class_from_space_dimension](#) ([ppl_BD_Shape_mpz_class_t](#) *pph, [ppl_dimension_type](#) d, int empty)
- [int ppl_new_BD_Shape_mpz_class_from_Int8_Box](#) ([ppl_BD_Shape_mpz_class_t](#) *pph, [ppl_const_Int8_Box_t](#) ph)
- [int ppl_new_BD_Shape_mpz_class_from_Int16_Box](#) ([ppl_BD_Shape_mpz_class_t](#) *pph, [ppl_const_Int16_Box_t](#) ph)
- [int ppl_new_BD_Shape_mpz_class_from_Int32_Box](#) ([ppl_BD_Shape_mpz_class_t](#) *pph, [ppl_const_Int32_Box_t](#) ph)
- [int ppl_new_BD_Shape_mpz_class_from_Int64_Box](#) ([ppl_BD_Shape_mpz_class_t](#) *pph, [ppl_const_Int64_Box_t](#) ph)
- [int ppl_new_BD_Shape_mpz_class_from_Uint8_Box](#) ([ppl_BD_Shape_mpz_class_t](#) *pph, [ppl_const_Uint8_Box_t](#) ph)
- [int ppl_new_BD_Shape_mpz_class_from_Uint16_Box](#) ([ppl_BD_Shape_mpz_class_t](#) *pph, [ppl_const_Uint16_Box_t](#) ph)
- [int ppl_new_BD_Shape_mpz_class_from_Uint32_Box](#) ([ppl_BD_Shape_mpz_class_t](#) *pph, [ppl_const_Uint32_Box_t](#) ph)
- [int ppl_new_BD_Shape_mpz_class_from_Uint64_Box](#) ([ppl_BD_Shape_mpz_class_t](#) *pph, [ppl_const_Uint64_Box_t](#) ph)
- [int ppl_new_BD_Shape_mpz_class_from_Z_Box](#) ([ppl_BD_Shape_mpz_class_t](#) *pph, [ppl_const_Z_Box_t](#) ph)
- [int ppl_new_BD_Shape_mpz_class_from_Rational_Box](#) ([ppl_BD_Shape_mpz_class_t](#) *pph, [ppl_const_Rational_Box_t](#) ph)
- [int ppl_new_BD_Shape_mpz_class_from_BD_Shape_int8_t](#) ([ppl_BD_Shape_mpz_class_t](#) *pph, [ppl_const_BD_Shape_int8_t_t](#) ph)
- [int ppl_new_BD_Shape_mpz_class_from_BD_Shape_int16_t](#) ([ppl_BD_Shape_mpz_class_t](#) *pph, [ppl_const_BD_Shape_int16_t_t](#) ph)
- [int ppl_new_BD_Shape_mpz_class_from_BD_Shape_int32_t](#) ([ppl_BD_Shape_mpz_class_t](#) *pph, [ppl_const_BD_Shape_int32_t_t](#) ph)
- [int ppl_new_BD_Shape_mpz_class_from_BD_Shape_int64_t](#) ([ppl_BD_Shape_mpz_class_t](#) *pph, [ppl_const_BD_Shape_int64_t_t](#) ph)
- [int ppl_new_BD_Shape_mpz_class_from_BD_Shape_mpz_class](#) ([ppl_BD_Shape_mpz_class_t](#) *pph, [ppl_const_BD_Shape_mpz_class_t](#) ph)
- [int ppl_new_BD_Shape_mpz_class_from_BD_Shape_mpq_class](#) ([ppl_BD_Shape_mpz_class_t](#) *pph, [ppl_const_BD_Shape_mpq_class_t](#) ph)
- [int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_int8_t](#) ([ppl_BD_Shape_mpz_class_t](#) *pph, [ppl_const_Octagonal_Shape_int8_t_t](#) ph)

- [int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_int16_t](#) (ppl_BD_Shape_mpz_class_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph)
- [int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_int32_t](#) (ppl_BD_Shape_mpz_class_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph)
- [int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_int64_t](#) (ppl_BD_Shape_mpz_class_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph)
- [int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_mpz_class](#) (ppl_BD_Shape_mpz_class_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph)
- [int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_mpq_class](#) (ppl_BD_Shape_mpz_class_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph)
- [int ppl_new_BD_Shape_mpz_class_from_C_Polyhedron](#) (ppl_BD_Shape_mpz_class_t *pph, ppl_const_Polyhedron_t ph)
- [int ppl_new_BD_Shape_mpz_class_from_NNC_Polyhedron](#) (ppl_BD_Shape_mpz_class_t *pph, ppl_const_Polyhedron_t ph)
- [int ppl_new_BD_Shape_mpz_class_from_Grid](#) (ppl_BD_Shape_mpz_class_t *pph, ppl_const_Grid_t ph)
- [int ppl_new_BD_Shape_mpz_class_from_Float_Box](#) (ppl_BD_Shape_mpz_class_t *pph, ppl_const_Float_Box_t ph)
- [int ppl_new_BD_Shape_mpz_class_from_BD_Shape_float](#) (ppl_BD_Shape_mpz_class_t *pph, ppl_const_BD_Shape_float_t ph)
- [int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_float](#) (ppl_BD_Shape_mpz_class_t *pph, ppl_const_Octagonal_Shape_float_t ph)
- [int ppl_new_BD_Shape_mpz_class_from_Double_Box](#) (ppl_BD_Shape_mpz_class_t *pph, ppl_const_Double_Box_t ph)
- [int ppl_new_BD_Shape_mpz_class_from_BD_Shape_double](#) (ppl_BD_Shape_mpz_class_t *pph, ppl_const_BD_Shape_double_t ph)
- [int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_double](#) (ppl_BD_Shape_mpz_class_t *pph, ppl_const_Octagonal_Shape_double_t ph)
- [int ppl_new_BD_Shape_mpz_class_from_Long_Double_Box](#) (ppl_BD_Shape_mpz_class_t *pph, ppl_const_Long_Double_Box_t ph)
- [int ppl_new_BD_Shape_mpz_class_from_BD_Shape_long_double](#) (ppl_BD_Shape_mpz_class_t *pph, ppl_const_BD_Shape_long_double_t ph)
- [int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_long_double](#) (ppl_BD_Shape_mpz_class_t *pph, ppl_const_Octagonal_Shape_long_double_t ph)
- [int ppl_new_BD_Shape_mpz_class_from_Int8_Box_with_complexity](#) (ppl_BD_Shape_mpz_class_t *pph, ppl_const_Int8_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_mpz_class_from_Int16_Box_with_complexity](#) (ppl_BD_Shape_mpz_class_t *pph, ppl_const_Int16_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_mpz_class_from_Int32_Box_with_complexity](#) (ppl_BD_Shape_mpz_class_t *pph, ppl_const_Int32_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_mpz_class_from_Int64_Box_with_complexity](#) (ppl_BD_Shape_mpz_class_t *pph, ppl_const_Int64_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_mpz_class_from_Uint8_Box_with_complexity](#) (ppl_BD_Shape_mpz_class_t *pph, ppl_const_Uint8_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_mpz_class_from_Uint16_Box_with_complexity](#) (ppl_BD_Shape_mpz_class_t *pph, ppl_const_Uint16_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_mpz_class_from_Uint32_Box_with_complexity](#) (ppl_BD_Shape_mpz_class_t *pph, ppl_const_Uint32_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_mpz_class_from_Uint64_Box_with_complexity](#) (ppl_BD_Shape_mpz_class_t *pph, ppl_const_Uint64_Box_t ph, int complexity)
- [int ppl_new_BD_Shape_mpz_class_from_Z_Box_with_complexity](#) (ppl_BD_Shape_mpz_class_t *pph, ppl_const_Z_Box_t ph, int complexity)

- `int ppl_new_BD_Shape_mpz_class_from_Rational_Box_with_complexity` (`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_Rational_Box_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_mpz_class_from_BD_Shape_int8_t_with_complexity` (`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_BD_Shape_int8_t_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_mpz_class_from_BD_Shape_int16_t_with_complexity` (`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_BD_Shape_int16_t_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_mpz_class_from_BD_Shape_int32_t_with_complexity` (`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_BD_Shape_int32_t_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_mpz_class_from_BD_Shape_int64_t_with_complexity` (`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_BD_Shape_int64_t_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_mpz_class_from_BD_Shape_mpz_class_with_complexity` (`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_BD_Shape_mpz_class_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_mpz_class_from_BD_Shape_mpq_class_with_complexity` (`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_BD_Shape_mpq_class_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_int8_t_with_complexity` (`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_Octagonal_Shape_int8_t_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_int16_t_with_complexity` (`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_int32_t_with_complexity` (`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_Octagonal_Shape_int32_t_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_int64_t_with_complexity` (`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_Octagonal_Shape_int64_t_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_mpz_class_with_complexity` (`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_Octagonal_Shape_mpz_class_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_mpq_class_with_complexity` (`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_Octagonal_Shape_mpq_class_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_mpz_class_from_C_Polyhedron_with_complexity` (`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_Polyhedron_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_mpz_class_from_NNC_Polyhedron_with_complexity` (`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_Polyhedron_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_mpz_class_from_Grid_with_complexity` (`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_Grid_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_mpz_class_from_Float_Box_with_complexity` (`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_Float_Box_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_mpz_class_from_BD_Shape_float_with_complexity` (`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_BD_Shape_float_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_float_with_complexity` (`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_Octagonal_Shape_float_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_mpz_class_from_Double_Box_with_complexity` (`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_Double_Box_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_mpz_class_from_BD_Shape_double_with_complexity` (`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_BD_Shape_double_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_double_with_complexity` (`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_Octagonal_Shape_double_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_mpz_class_from_Long_Double_Box_with_complexity` (`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_Long_Double_Box_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_mpz_class_from_BD_Shape_long_double_with_complexity` (`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_BD_Shape_long_double_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_long_double_with_complexity` (`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_Octagonal_Shape_long_double_t ph`, `int complexity`)
- `int ppl_new_BD_Shape_mpz_class_from_Constraint_System` (`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_Constraint_System_t cs`)

- `int ppl_new_BD_Shape_mpz_class_from_Congruence_System` (`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_Congruence_System_t cs`)
- `int ppl_new_BD_Shape_mpz_class_from_Generator_System` (`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_Generator_System_t cs`)
- `int ppl_BD_Shape_mpz_class_space_dimension` (`ppl_const_BD_Shape_mpz_class_t ph`, `ppl_dimension_type *m`)
- `int ppl_BD_Shape_mpz_class_affine_dimension` (`ppl_const_BD_Shape_mpz_class_t ph`, `ppl_dimension_type *m`)
- `int ppl_BD_Shape_mpz_class_relation_with_Constraint` (`ppl_const_BD_Shape_mpz_class_t ph`, `ppl_const_Constraint_t c`)
- `int ppl_BD_Shape_mpz_class_relation_with_Generator` (`ppl_const_BD_Shape_mpz_class_t ph`, `ppl_const_Generator_t c`)
- `int ppl_BD_Shape_mpz_class_relation_with_Congruence` (`ppl_const_BD_Shape_mpz_class_t ph`, `ppl_const_Congruence_t c`)
- `int ppl_BD_Shape_mpz_class_get_constraints` (`ppl_const_BD_Shape_mpz_class_t ph`, `ppl_const_Constraint_System_t *pcs`)
- `int ppl_BD_Shape_mpz_class_get_congruences` (`ppl_const_BD_Shape_mpz_class_t ph`, `ppl_const_Congruence_System_t *pcs`)
- `int ppl_BD_Shape_mpz_class_get_minimized_constraints` (`ppl_const_BD_Shape_mpz_class_t ph`, `ppl_const_Constraint_System_t *pcs`)
- `int ppl_BD_Shape_mpz_class_get_minimized_congruences` (`ppl_const_BD_Shape_mpz_class_t ph`, `ppl_const_Congruence_System_t *pcs`)
- `int ppl_BD_Shape_mpz_class_is_empty` (`ppl_const_BD_Shape_mpz_class_t ph`)
- `int ppl_BD_Shape_mpz_class_is_universe` (`ppl_const_BD_Shape_mpz_class_t ph`)
- `int ppl_BD_Shape_mpz_class_is_bounded` (`ppl_const_BD_Shape_mpz_class_t ph`)
- `int ppl_BD_Shape_mpz_class_contains_integer_point` (`ppl_const_BD_Shape_mpz_class_t ph`)
- `int ppl_BD_Shape_mpz_class_is_topologically_closed` (`ppl_const_BD_Shape_mpz_class_t ph`)
- `int ppl_BD_Shape_mpz_class_is_discrete` (`ppl_const_BD_Shape_mpz_class_t ph`)
- `int ppl_BD_Shape_mpz_class_topological_closure_assign` (`ppl_BD_Shape_mpz_class_t ph`)
- `int ppl_BD_Shape_mpz_class_bounds_from_above` (`ppl_const_BD_Shape_mpz_class_t ph`, `ppl_const_Linear_Expression_t le`)
- `int ppl_BD_Shape_mpz_class_bounds_from_below` (`ppl_const_BD_Shape_mpz_class_t ph`, `ppl_const_Linear_Expression_t le`)
- `int ppl_BD_Shape_mpz_class_maximize` (`ppl_const_BD_Shape_mpz_class_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int *poptimum`)
- `int ppl_BD_Shape_mpz_class_minimize` (`ppl_const_BD_Shape_mpz_class_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int *poptimum`)
- `int ppl_BD_Shape_mpz_class_maximize_with_point` (`ppl_const_BD_Shape_mpz_class_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int *poptimum`, `ppl_Generator_t point`)
- `int ppl_BD_Shape_mpz_class_minimize_with_point` (`ppl_const_BD_Shape_mpz_class_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int *poptimum`, `ppl_Generator_t point`)
- `int ppl_BD_Shape_mpz_class_frequency` (`ppl_const_BD_Shape_mpz_class_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_fn`, `ppl_Coefficient_t ext_fd`, `ppl_Coefficient_t ext_vn`, `ppl_Coefficient_t ext_vd`)
- `int ppl_BD_Shape_mpz_class_contains_BD_Shape_mpz_class` (`ppl_const_BD_Shape_mpz_class_t x`, `ppl_const_BD_Shape_mpz_class_t y`)
- `int ppl_BD_Shape_mpz_class_strictly_contains_BD_Shape_mpz_class` (`ppl_const_BD_Shape_mpz_class_t x`, `ppl_const_BD_Shape_mpz_class_t y`)
- `int ppl_BD_Shape_mpz_class_is_disjoint_from_BD_Shape_mpz_class` (`ppl_const_BD_Shape_mpz_class_t x`, `ppl_const_BD_Shape_mpz_class_t y`)

- int [ppl_BD_Shape_mpz_class_equals_BD_Shape_mpz_class](#) (ppl_const_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y)
- int [ppl_BD_Shape_mpz_class_OK](#) (ppl_const_BD_Shape_mpz_class_t ph)
- int [ppl_BD_Shape_mpz_class_add_constraint](#) (ppl_BD_Shape_mpz_class_t ph, ppl_const_Constraint_t c)
- int [ppl_BD_Shape_mpz_class_add_congruence](#) (ppl_BD_Shape_mpz_class_t ph, ppl_const_Congruence_t c)
- int [ppl_BD_Shape_mpz_class_add_constraints](#) (ppl_BD_Shape_mpz_class_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_BD_Shape_mpz_class_add_congruences](#) (ppl_BD_Shape_mpz_class_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_BD_Shape_mpz_class_refine_with_constraint](#) (ppl_BD_Shape_mpz_class_t ph, ppl_const_Constraint_t c)
- int [ppl_BD_Shape_mpz_class_refine_with_congruence](#) (ppl_BD_Shape_mpz_class_t ph, ppl_const_Congruence_t c)
- int [ppl_BD_Shape_mpz_class_refine_with_constraints](#) (ppl_BD_Shape_mpz_class_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_BD_Shape_mpz_class_refine_with_congruences](#) (ppl_BD_Shape_mpz_class_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_BD_Shape_mpz_class_intersection_assign](#) (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y)
- int [ppl_BD_Shape_mpz_class_upper_bound_assign](#) (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y)
- int [ppl_BD_Shape_mpz_class_difference_assign](#) (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y)
- int [ppl_BD_Shape_mpz_class_concatenate_assign](#) (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y)
- int [ppl_BD_Shape_mpz_class_time_elapse_assign](#) (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y)
- int [ppl_BD_Shape_mpz_class_upper_bound_assign_if_exact](#) (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y)
- int [ppl_BD_Shape_mpz_class_simplify_using_context_assign](#) (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y)
- int [ppl_BD_Shape_mpz_class_constrains](#) (ppl_BD_Shape_mpz_class_t ph, [ppl_dimension_type](#) var)
- int [ppl_BD_Shape_mpz_class_unconstrain_space_dimension](#) (ppl_BD_Shape_mpz_class_t ph, [ppl_dimension_type](#) var)
- int [ppl_BD_Shape_mpz_class_unconstrain_space_dimensions](#) (ppl_BD_Shape_mpz_class_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_BD_Shape_mpz_class_affine_image](#) (ppl_BD_Shape_mpz_class_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_BD_Shape_mpz_class_affine_preimage](#) (ppl_BD_Shape_mpz_class_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_BD_Shape_mpz_class_bounded_affine_image](#) (ppl_BD_Shape_mpz_class_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_BD_Shape_mpz_class_bounded_affine_preimage](#) (ppl_BD_Shape_mpz_class_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_BD_Shape_mpz_class_generalized_affine_image](#) (ppl_BD_Shape_mpz_class_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)

- [int ppl_BD_Shape_mpz_class_generalized_affine_preimage](#) (ppl_BD_Shape_mpz_class_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- [int ppl_BD_Shape_mpz_class_generalized_affine_image_lhs_rhs](#) (ppl_BD_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- [int ppl_BD_Shape_mpz_class_generalized_affine_preimage_lhs_rhs](#) (ppl_BD_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- [int ppl_BD_Shape_mpz_class_add_space_dimensions_and_embed](#) (ppl_BD_Shape_mpz_class_t ph, [ppl_dimension_type](#) d)
- [int ppl_BD_Shape_mpz_class_add_space_dimensions_and_project](#) (ppl_BD_Shape_mpz_class_t ph, [ppl_dimension_type](#) d)
- [int ppl_BD_Shape_mpz_class_remove_space_dimensions](#) (ppl_BD_Shape_mpz_class_t ph, [ppl_dimension_type](#) ds[], size_t n)
- [int ppl_BD_Shape_mpz_class_remove_higher_space_dimensions](#) (ppl_BD_Shape_mpz_class_t ph, [ppl_dimension_type](#) d)
- [int ppl_BD_Shape_mpz_class_expand_space_dimension](#) (ppl_BD_Shape_mpz_class_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- [int ppl_BD_Shape_mpz_class_fold_space_dimensions](#) (ppl_BD_Shape_mpz_class_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- [int ppl_BD_Shape_mpz_class_map_space_dimensions](#) (ppl_BD_Shape_mpz_class_t ph, [ppl_dimension_type](#) maps[], size_t n)
- [int ppl_BD_Shape_mpz_class_drop_some_non_integer_points](#) (ppl_BD_Shape_mpz_class_t ph, int complexity)
- [int ppl_BD_Shape_mpz_class_drop_some_non_integer_points_2](#) (ppl_BD_Shape_mpz_class_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- [int ppl_BD_Shape_mpz_class_external_memory_in_bytes](#) (ppl_const_BD_Shape_mpz_class_t ps, size_t *sz)
- [int ppl_BD_Shape_mpz_class_total_memory_in_bytes](#) (ppl_const_BD_Shape_mpz_class_t ps, size_t *sz)
- [int ppl_BD_Shape_mpz_class_BHMZ05_widening_assign_with_tokens](#) (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y, unsigned *tp)
- [int ppl_BD_Shape_mpz_class_H79_widening_assign_with_tokens](#) (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y, unsigned *tp)
- [int ppl_BD_Shape_mpz_class_BHMZ05_widening_assign](#) (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y)
- [int ppl_BD_Shape_mpz_class_H79_widening_assign](#) (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y)
- [int ppl_BD_Shape_mpz_class_widening_assign_with_tokens](#) (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y, unsigned *tp)
- [int ppl_BD_Shape_mpz_class_widening_assign](#) (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y)
- [int ppl_BD_Shape_mpz_class_limited_BHMZ05_extrapolation_assign_with_tokens](#) (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- [int ppl_BD_Shape_mpz_class_limited_H79_extrapolation_assign_with_tokens](#) (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- [int ppl_BD_Shape_mpz_class_limited_CC76_extrapolation_assign_with_tokens](#) (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y, ppl_const_Constraint_System_t cs, unsigned *tp)

- int [ppl_BD_Shape_mpz_class_limited_BHMZ05_extrapolation_assign](#) (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y, ppl_const_Constraint_System_t cs)
- int [ppl_BD_Shape_mpz_class_limited_H79_extrapolation_assign](#) (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y, ppl_const_Constraint_System_t cs)
- int [ppl_BD_Shape_mpz_class_limited_CC76_extrapolation_assign](#) (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y, ppl_const_Constraint_System_t cs)
- int [ppl_BD_Shape_mpz_class_CC76_extrapolation_assign_with_tokens](#) (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y, unsigned *tp)
- int [ppl_BD_Shape_mpz_class_CC76_extrapolation_assign](#) (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y)
- int [ppl_BD_Shape_mpz_class_CC76_narrowing_assign](#) (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y)
- int [ppl_BD_Shape_mpz_class_linear_partition](#) (ppl_const_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y, ppl_BD_Shape_mpz_class_t *p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest)
- int [ppl_BD_Shape_mpz_class_wrap_assign](#) (ppl_BD_Shape_mpz_class_t ph, [ppl_dimension_type](#) ds[], size_t n, enum [ppl_enum_Bounded_Integer_Type_Width](#) w, enum [ppl_enum_Bounded_Integer_Type_Representation](#) r, enum [ppl_enum_Bounded_Integer_Type_Overflow](#) o, const ppl_const_Constraint_System_t *pcs, unsigned complexity_threshold, int wrap_individually)
- int [ppl_new_BD_Shape_mpz_class_recycle_Constraint_System](#) (ppl_BD_Shape_mpz_class_t *pph, ppl_Constraint_System_t cs)
- int [ppl_new_BD_Shape_mpz_class_recycle_Congruence_System](#) (ppl_BD_Shape_mpz_class_t *pph, ppl_Congruence_System_t cs)
- int [ppl_new_BD_Shape_mpz_class_recycle_Generator_System](#) (ppl_BD_Shape_mpz_class_t *pph, ppl_Generator_System_t cs)
- int [ppl_assign_BD_Shape_mpz_class_from_BD_Shape_mpz_class](#) (ppl_BD_Shape_mpz_class_t dst, ppl_const_BD_Shape_mpz_class_t src)
- int [ppl_BD_Shape_mpz_class_add_recycled_constraints](#) (ppl_BD_Shape_mpz_class_t ph, ppl_Constraint_System_t cs)
- int [ppl_BD_Shape_mpz_class_add_recycled_congruences](#) (ppl_BD_Shape_mpz_class_t ph, ppl_Congruence_System_t cs)
- int [ppl_termination_test_MS_BD_Shape_mpz_class](#) (ppl_const_BD_Shape_mpz_class_t pset)
- int [ppl_termination_test_PR_BD_Shape_mpz_class](#) (ppl_const_BD_Shape_mpz_class_t pset)
- int [ppl_one_affine_ranking_function_MS_BD_Shape_mpz_class](#) (ppl_const_BD_Shape_mpz_class_t pset, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_BD_Shape_mpz_class](#) (ppl_const_BD_Shape_mpz_class_t pset, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_BD_Shape_mpz_class](#) (ppl_const_BD_Shape_mpz_class_t pset, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_BD_Shape_mpz_class](#) (ppl_const_BD_Shape_mpz_class_t pset, ppl_Polyhedron_t ph)
- int [ppl_termination_test_MS_BD_Shape_mpz_class_2](#) (ppl_const_BD_Shape_mpz_class_t pset_before, ppl_const_BD_Shape_mpz_class_t pset_after)
- int [ppl_termination_test_PR_BD_Shape_mpz_class_2](#) (ppl_const_BD_Shape_mpz_class_t pset_before, ppl_const_BD_Shape_mpz_class_t pset_after)
- int [ppl_one_affine_ranking_function_MS_BD_Shape_mpz_class_2](#) (ppl_const_BD_Shape_mpz_class_t pset_before, ppl_const_BD_Shape_mpz_class_t pset_after, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_BD_Shape_mpz_class_2](#) (ppl_const_BD_Shape_mpz_class_t pset_before, ppl_const_BD_Shape_mpz_class_t pset_after, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_BD_Shape_mpz_class_2](#) (ppl_const_BD_Shape_mpz_class_t pset_before, ppl_const_BD_Shape_mpz_class_t pset_after, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_BD_Shape_mpz_class_2](#) (ppl_const_BD_Shape_mpz_class_t pset_before, ppl_const_BD_Shape_mpz_class_t pset_after, ppl_Polyhedron_t ph)

10.13.1 Detailed Description

Types and functions for [ppl_BD_Shape_mpz_class_tag](#).

10.13.2 Friends And Related Function Documentation

- 10.13.2.1** `int ppl_all_affine_ranking_functions_MS_BD_Shape_mpz_class`
`(ppl_const_BD_Shape_mpz_class_t pset, ppl_Polyhedron_t ph)` [**related**]
- 10.13.2.2** `int ppl_all_affine_ranking_functions_MS_BD_Shape_mpz_class_2`
`(ppl_const_BD_Shape_mpz_class_t pset_before, ppl_const_BD_Shape_mpz_class_t`
`pset_after, ppl_Polyhedron_t ph)` [**related**]
- 10.13.2.3** `int ppl_all_affine_ranking_functions_PR_BD_Shape_mpz_class`
`(ppl_const_BD_Shape_mpz_class_t pset, ppl_Polyhedron_t ph)` [**related**]
- 10.13.2.4** `int ppl_all_affine_ranking_functions_PR_BD_Shape_mpz_class_2`
`(ppl_const_BD_Shape_mpz_class_t pset_before, ppl_const_BD_Shape_mpz_class_t`
`pset_after, ppl_Polyhedron_t ph)` [**related**]
- 10.13.2.5** `int ppl_assign_BD_Shape_mpz_class_from_BD_Shape_mpz_class`
`(ppl_BD_Shape_mpz_class_t dst, ppl_const_BD_Shape_mpz_class_t src)` [**related**]
- 10.13.2.6** `int ppl_BD_Shape_mpz_class_add_congruence` `(ppl_BD_Shape_mpz_class_t ph,`
`ppl_const_Congruence_t c)` [**related**]
- 10.13.2.7** `int ppl_BD_Shape_mpz_class_add_congruences` `(ppl_BD_Shape_mpz_class_t ph,`
`ppl_const_Congruence_System_t cs)` [**related**]
- 10.13.2.8** `int ppl_BD_Shape_mpz_class_add_constraint` `(ppl_BD_Shape_mpz_class_t ph,`
`ppl_const_Constraint_t c)` [**related**]

- 10.13.2.9** `int ppl_BD_Shape_mpz_class_add_constraints (ppl_BD_Shape_mpz_class_t ph,
ppl_const_Constraint_System_t cs)` [**related**]
- 10.13.2.10** `int ppl_BD_Shape_mpz_class_add_recycled_congruences (ppl_BD_Shape_mpz_class_t
ph, ppl_Congruence_System_t cs)` [**related**]
- 10.13.2.11** `int ppl_BD_Shape_mpz_class_add_recycled_constraints (ppl_BD_Shape_mpz_class_t
ph, ppl_Constraint_System_t cs)` [**related**]
- 10.13.2.12** `int ppl_BD_Shape_mpz_class_add_space_dimensions_and_embed
(ppl_BD_Shape_mpz_class_t ph, ppl_dimension_type d)` [**related**]
- 10.13.2.13** `int ppl_BD_Shape_mpz_class_add_space_dimensions_and_project
(ppl_BD_Shape_mpz_class_t ph, ppl_dimension_type d)` [**related**]
- 10.13.2.14** `int ppl_BD_Shape_mpz_class_affine_dimension (ppl_const_BD_Shape_mpz_class_t
ph, ppl_dimension_type * m)` [**related**]
- 10.13.2.15** `int ppl_BD_Shape_mpz_class_affine_image (ppl_BD_Shape_mpz_class_t ph,
ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t
d)` [**related**]
- 10.13.2.16** `int ppl_BD_Shape_mpz_class_affine_preimage (ppl_BD_Shape_mpz_class_t ph,
ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t
d)` [**related**]
- 10.13.2.17** `int ppl_BD_Shape_mpz_class_BHMZ05_widening_assign (ppl_-
BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y)`
[**related**]

- 10.13.2.18** `int ppl_BD_Shape_mpz_class_BHMZ05_widening_assign_with_tokens`
 (`ppl_BD_Shape_mpz_class_t x`, `ppl_const_BD_Shape_mpz_class_t y`, `unsigned * tp`)
 [**related**]
- 10.13.2.19** `int ppl_BD_Shape_mpz_class_bounded_affine_image` (`ppl_BD_Shape_mpz_class_t`
`ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t lb`,
`ppl_const_Linear_Expression_t ub`, `ppl_const_Coefficient_t d`) [**related**]
- 10.13.2.20** `int ppl_BD_Shape_mpz_class_bounded_affine_preimage` (`ppl_BD_Shape_mpz_class_t`
`ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t lb`,
`ppl_const_Linear_Expression_t ub`, `ppl_const_Coefficient_t d`) [**related**]
- 10.13.2.21** `int ppl_BD_Shape_mpz_class_bounds_from_above` (`ppl_const_BD_Shape_mpz_class_t`
`ph`, `ppl_const_Linear_Expression_t le`) [**related**]
- 10.13.2.22** `int ppl_BD_Shape_mpz_class_bounds_from_below` (`ppl_const_BD_Shape_mpz_class_t`
`ph`, `ppl_const_Linear_Expression_t le`) [**related**]
- 10.13.2.23** `int ppl_BD_Shape_mpz_class_CC76_extrapolation_assign`
 (`ppl_BD_Shape_mpz_class_t x`, `ppl_const_BD_Shape_mpz_class_t y`) [**related**]
- 10.13.2.24** `int ppl_BD_Shape_mpz_class_CC76_extrapolation_assign_with_tokens`
 (`ppl_BD_Shape_mpz_class_t x`, `ppl_const_BD_Shape_mpz_class_t y`, `unsigned * tp`)
 [**related**]
- 10.13.2.25** `int ppl_BD_Shape_mpz_class_CC76_narrowing_assign` (`ppl_BD_Shape_mpz_class_t`
`x`, `ppl_const_BD_Shape_mpz_class_t y`) [**related**]
- 10.13.2.26** `int ppl_BD_Shape_mpz_class_concatenate_assign` (`ppl_BD_Shape_mpz_class_t x`,
`ppl_const_BD_Shape_mpz_class_t y`) [**related**]

- 10.13.2.27** `int ppl_BD_Shape_mpz_class_constrains (ppl_BD_Shape_mpz_class_t ph,
ppl_dimension_type var)` [**related**]
- 10.13.2.28** `int ppl_BD_Shape_mpz_class_contains_BD_Shape_mpz_class
(ppl_const_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y)`
[**related**]
- 10.13.2.29** `int ppl_BD_Shape_mpz_class_contains_integer_point (ppl_const_BD_Shape_mpz_
class_t ph)` [**related**]
- 10.13.2.30** `int ppl_BD_Shape_mpz_class_difference_assign (ppl_BD_Shape_mpz_class_t x,
ppl_const_BD_Shape_mpz_class_t y)` [**related**]
- 10.13.2.31** `int ppl_BD_Shape_mpz_class_drop_some_non_integer_points
(ppl_BD_Shape_mpz_class_t ph, int complexity)` [**related**]
- 10.13.2.32** `int ppl_BD_Shape_mpz_class_drop_some_non_integer_points_2
(ppl_BD_Shape_mpz_class_t ph, ppl_dimension_type ds[], size_t n, int complexity)`
[**related**]
- 10.13.2.33** `int ppl_BD_Shape_mpz_class_equals_BD_Shape_mpz_class (ppl_
const_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y)`
[**related**]
- 10.13.2.34** `int ppl_BD_Shape_mpz_class_expand_space_dimension (ppl_BD_Shape_mpz_class_t
ph, ppl_dimension_type d, ppl_dimension_type m)` [**related**]
- 10.13.2.35** `int ppl_BD_Shape_mpz_class_external_memory_in_bytes
(ppl_const_BD_Shape_mpz_class_t ps, size_t * sz)` [**related**]

- 10.13.2.36 `int ppl_BD_Shape_mpz_class_fold_space_dimensions (ppl_BD_Shape_mpz_class_t ph,
ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [`related`]
- 10.13.2.37 `int ppl_BD_Shape_mpz_class_frequency (ppl_const_BD_Shape_mpz_class_t ph,
ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd,
ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)` [`related`]
- 10.13.2.38 `int ppl_BD_Shape_mpz_class_generalized_affine_image (ppl_BD_Shape_mpz_class_t
ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relysym,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.13.2.39 `int ppl_BD_Shape_mpz_class_generalized_affine_image_lhs_rhs
(ppl_BD_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t lhs, enum
ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t rhs)`
[`related`]
- 10.13.2.40 `int ppl_BD_Shape_mpz_class_generalized_affine_preimage (ppl_BD_Shape_mpz_-
class_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relysym,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.13.2.41 `int ppl_BD_Shape_mpz_class_generalized_affine_preimage_lhs_rhs
(ppl_BD_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t lhs, enum
ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t rhs)`
[`related`]
- 10.13.2.42 `int ppl_BD_Shape_mpz_class_get_congruences (ppl_const_BD_Shape_mpz_class_t ph,
ppl_const_Congruence_System_t *pcs)` [`related`]
- 10.13.2.43 `int ppl_BD_Shape_mpz_class_get_constraints (ppl_const_BD_Shape_mpz_class_t ph,
ppl_const_Constraint_System_t *pcs)` [`related`]

- 10.13.2.44** `int ppl_BD_Shape_mpz_class_get_minimized_congruences (ppl_const_BD_Shape_mpz_class_t ph, ppl_const_Congruence_System_t * pcs)`
[related]
- 10.13.2.45** `int ppl_BD_Shape_mpz_class_get_minimized_constraints (ppl_const_BD_Shape_mpz_class_t ph, ppl_const_Constraint_System_t * pcs)`
[related]
- 10.13.2.46** `int ppl_BD_Shape_mpz_class_H79_widening_assign (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y)` [related]
- 10.13.2.47** `int ppl_BD_Shape_mpz_class_H79_widening_assign_with_tokens (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y, unsigned * tp)`
[related]
- 10.13.2.48** `int ppl_BD_Shape_mpz_class_intersection_assign (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y)` [related]
- 10.13.2.49** `int ppl_BD_Shape_mpz_class_is_bounded (ppl_const_BD_Shape_mpz_class_t ph)`
[related]
- 10.13.2.50** `int ppl_BD_Shape_mpz_class_is_discrete (ppl_const_BD_Shape_mpz_class_t ph)`
[related]
- 10.13.2.51** `int ppl_BD_Shape_mpz_class_is_disjoint_from_BD_Shape_mpz_class (ppl_const_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y)`
[related]
- 10.13.2.52** `int ppl_BD_Shape_mpz_class_is_empty (ppl_const_BD_Shape_mpz_class_t ph)`
[related]

- 10.13.2.53 `int ppl_BD_Shape_mpz_class_is_topologically_closed (ppl_const_BD_Shape_mpz_class_t ph)` [`related`]
- 10.13.2.54 `int ppl_BD_Shape_mpz_class_is_universe (ppl_const_BD_Shape_mpz_class_t ph)` [`related`]
- 10.13.2.55 `int ppl_BD_Shape_mpz_class_limited_BHMZ05_extrapolation_assign (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y, ppl_const_Constraint_System_t cs)` [`related`]
- 10.13.2.56 `int ppl_BD_Shape_mpz_class_limited_BHMZ05_extrapolation_assign_with_tokens (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y, ppl_const_Constraint_System_t cs, unsigned * tp)` [`related`]
- 10.13.2.57 `int ppl_BD_Shape_mpz_class_limited_CC76_extrapolation_assign (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y, ppl_const_Constraint_System_t cs)` [`related`]
- 10.13.2.58 `int ppl_BD_Shape_mpz_class_limited_CC76_extrapolation_assign_with_tokens (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y, ppl_const_Constraint_System_t cs, unsigned * tp)` [`related`]
- 10.13.2.59 `int ppl_BD_Shape_mpz_class_limited_H79_extrapolation_assign (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y, ppl_const_Constraint_System_t cs)` [`related`]
- 10.13.2.60 `int ppl_BD_Shape_mpz_class_limited_H79_extrapolation_assign_with_tokens (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y, ppl_const_Constraint_System_t cs, unsigned * tp)` [`related`]

- 10.13.2.61** `int ppl_BD_Shape_mpz_class_linear_partition (ppl_const_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y, ppl_BD_Shape_mpz_class_t * p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t * p_rest)` **[related]**
- 10.13.2.62** `int ppl_BD_Shape_mpz_class_map_space_dimensions (ppl_BD_Shape_mpz_class_t ph, ppl_dimension_type maps[], size_t n)` **[related]**
- 10.13.2.63** `int ppl_BD_Shape_mpz_class_maximize (ppl_const_BD_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` **[related]**
- 10.13.2.64** `int ppl_BD_Shape_mpz_class_maximize_with_point (ppl_const_BD_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` **[related]**
- 10.13.2.65** `int ppl_BD_Shape_mpz_class_minimize (ppl_const_BD_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` **[related]**
- 10.13.2.66** `int ppl_BD_Shape_mpz_class_minimize_with_point (ppl_const_BD_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` **[related]**
- 10.13.2.67** `int ppl_BD_Shape_mpz_class_OK (ppl_const_BD_Shape_mpz_class_t ph)` **[related]**
- 10.13.2.68** `int ppl_BD_Shape_mpz_class_refine_with_congruence (ppl_BD_Shape_mpz_class_t ph, ppl_const_Congruence_t c)` **[related]**

- 10.13.2.69 `int ppl_BD_Shape_mpz_class_refine_with_congruences (ppl_BD_Shape_mpz_class_t ph, ppl_const_Congruence_System_t cs)` [`related`]
- 10.13.2.70 `int ppl_BD_Shape_mpz_class_refine_with_constraint (ppl_BD_Shape_mpz_class_t ph, ppl_const_Constraint_t c)` [`related`]
- 10.13.2.71 `int ppl_BD_Shape_mpz_class_refine_with_constraints (ppl_BD_Shape_mpz_class_t ph, ppl_const_Constraint_System_t cs)` [`related`]
- 10.13.2.72 `int ppl_BD_Shape_mpz_class_relation_with_Congruence (ppl_const_BD_Shape_mpz_class_t ph, ppl_const_Congruence_t c)` [`related`]
- 10.13.2.73 `int ppl_BD_Shape_mpz_class_relation_with_Constraint (ppl_const_BD_Shape_mpz_class_t ph, ppl_const_Constraint_t c)` [`related`]
- 10.13.2.74 `int ppl_BD_Shape_mpz_class_relation_with_Generator (ppl_const_BD_Shape_mpz_class_t ph, ppl_const_Generator_t c)` [`related`]
- 10.13.2.75 `int ppl_BD_Shape_mpz_class_remove_higher_space_dimensions (ppl_BD_Shape_mpz_class_t ph, ppl_dimension_type d)` [`related`]
- 10.13.2.76 `int ppl_BD_Shape_mpz_class_remove_space_dimensions (ppl_BD_Shape_mpz_class_t ph, ppl_dimension_type ds[], size_t n)` [`related`]
- 10.13.2.77 `int ppl_BD_Shape_mpz_class_simplify_using_context_assign (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y)` [`related`]

- 10.13.2.78** `int ppl_BD_Shape_mpz_class_space_dimension (ppl_const_BD_Shape_mpz_class_t ph, ppl_dimension_type * m)` [**related**]
- 10.13.2.79** `int ppl_BD_Shape_mpz_class_strictly_contains_BD_Shape_mpz_class (ppl_const_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y)` [**related**]
- 10.13.2.80** `int ppl_BD_Shape_mpz_class_time_elapse_assign (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y)` [**related**]
- 10.13.2.81** `int ppl_BD_Shape_mpz_class_topological_closure_assign (ppl_BD_Shape_mpz_class_t ph)` [**related**]
- 10.13.2.82** `int ppl_BD_Shape_mpz_class_total_memory_in_bytes (ppl_const_BD_Shape_mpz_class_t ps, size_t * sz)` [**related**]
- 10.13.2.83** `int ppl_BD_Shape_mpz_class_unconstrain_space_dimension (ppl_BD_Shape_mpz_class_t ph, ppl_dimension_type var)` [**related**]
- 10.13.2.84** `int ppl_BD_Shape_mpz_class_unconstrain_space_dimensions (ppl_BD_Shape_mpz_class_t ph, ppl_dimension_type ds[], size_t n)` [**related**]
- 10.13.2.85** `int ppl_BD_Shape_mpz_class_upper_bound_assign (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y)` [**related**]
- 10.13.2.86** `int ppl_BD_Shape_mpz_class_upper_bound_assign_if_exact (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y)` [**related**]

- 10.13.2.87 `int ppl_BD_Shape_mpz_class_widening_assign (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y) [related]`
- 10.13.2.88 `int ppl_BD_Shape_mpz_class_widening_assign_with_tokens (ppl_BD_Shape_mpz_class_t x, ppl_const_BD_Shape_mpz_class_t y, unsigned * tp) [related]`
- 10.13.2.89 `int ppl_BD_Shape_mpz_class_wrap_assign (ppl_BD_Shape_mpz_class_t ph, ppl_dimension_type ds[], size_t n, enum ppl_enum_Bounded_Integer_Type_Width w, enum ppl_enum_Bounded_Integer_Type_Representation r, enum ppl_enum_Bounded_Integer_Type_Overflow o, const ppl_const_Constraint_System_t * pcs, unsigned complexity_threshold, int wrap_individually) [related]`
- 10.13.2.90 `int ppl_delete_BD_Shape_mpz_class (ppl_const_BD_Shape_mpz_class_t ph) [related]`
- 10.13.2.91 `int ppl_new_BD_Shape_mpz_class_from_BD_Shape_double (ppl_BD_Shape_mpz_class_t * ppsh, ppl_const_BD_Shape_double_t ph) [related]`
- 10.13.2.92 `int ppl_new_BD_Shape_mpz_class_from_BD_Shape_double_with_complexity (ppl_BD_Shape_mpz_class_t * ppsh, ppl_const_BD_Shape_double_t ph, int complexity) [related]`
- 10.13.2.93 `int ppl_new_BD_Shape_mpz_class_from_BD_Shape_float (ppl_BD_Shape_mpz_class_t * ppsh, ppl_const_BD_Shape_float_t ph) [related]`
- 10.13.2.94 `int ppl_new_BD_Shape_mpz_class_from_BD_Shape_float_with_complexity (ppl_BD_Shape_mpz_class_t * ppsh, ppl_const_BD_Shape_float_t ph, int complexity) [related]`

- 10.13.2.95** `int ppl_new_BD_Shape_mpz_class_from_BD_Shape_int16_t`
(`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_BD_Shape_int16_t_t ph`) [`related`]
- 10.13.2.96** `int ppl_new_BD_Shape_mpz_class_from_BD_Shape_int16_t_with_complexity`
(`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_BD_Shape_int16_t_t ph`, `int complexity`) [`related`]
- 10.13.2.97** `int ppl_new_BD_Shape_mpz_class_from_BD_Shape_int32_t`
(`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_BD_Shape_int32_t_t ph`) [`related`]
- 10.13.2.98** `int ppl_new_BD_Shape_mpz_class_from_BD_Shape_int32_t_with_complexity`
(`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_BD_Shape_int32_t_t ph`, `int complexity`) [`related`]
- 10.13.2.99** `int ppl_new_BD_Shape_mpz_class_from_BD_Shape_int64_t`
(`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_BD_Shape_int64_t_t ph`) [`related`]
- 10.13.2.100** `int ppl_new_BD_Shape_mpz_class_from_BD_Shape_int64_t_with_complexity`
(`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_BD_Shape_int64_t_t ph`, `int complexity`) [`related`]
- 10.13.2.101** `int ppl_new_BD_Shape_mpz_class_from_BD_Shape_int8_t`
(`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_BD_Shape_int8_t_t ph`) [`related`]
- 10.13.2.102** `int ppl_new_BD_Shape_mpz_class_from_BD_Shape_int8_t_with_complexity`
(`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_BD_Shape_int8_t_t ph`, `int complexity`) [`related`]

- 10.13.2.103 `int ppl_new_BD_Shape_mpz_class_from_BD_Shape_long_double`
(`ppl_BD_Shape_mpz_class_t * pph`, `ppl_const_BD_Shape_long_double_t ph`)
[related]
- 10.13.2.104 `int ppl_new_BD_Shape_mpz_class_from_BD_Shape_long_double_with_complexity`
(`ppl_BD_Shape_mpz_class_t * pph`, `ppl_const_BD_Shape_long_double_t ph`, `int complexity`) [related]
- 10.13.2.105 `int ppl_new_BD_Shape_mpz_class_from_BD_Shape_mpq_class`
(`ppl_BD_Shape_mpz_class_t * pph`, `ppl_const_BD_Shape_mpq_class_t ph`)
[related]
- 10.13.2.106 `int ppl_new_BD_Shape_mpz_class_from_BD_Shape_mpq_class_with_complexity`
(`ppl_BD_Shape_mpz_class_t * pph`, `ppl_const_BD_Shape_mpq_class_t ph`, `int complexity`) [related]
- 10.13.2.107 `int ppl_new_BD_Shape_mpz_class_from_BD_Shape_mpz_class`
(`ppl_BD_Shape_mpz_class_t * pph`, `ppl_const_BD_Shape_mpz_class_t ph`)
[related]
- 10.13.2.108 `int ppl_new_BD_Shape_mpz_class_from_BD_Shape_mpz_class_with_complexity`
(`ppl_BD_Shape_mpz_class_t * pph`, `ppl_const_BD_Shape_mpz_class_t ph`, `int complexity`) [related]
- 10.13.2.109 `int ppl_new_BD_Shape_mpz_class_from_C_Polyhedron` (`ppl_BD_Shape_mpz_class_t * pph`, `ppl_const_Polyhedron_t ph`) [related]
- 10.13.2.110 `int ppl_new_BD_Shape_mpz_class_from_C_Polyhedron_with_complexity`
(`ppl_BD_Shape_mpz_class_t * pph`, `ppl_const_Polyhedron_t ph`, `int complexity`)
[related]

- 10.13.2.111 **int** ppl_new_BD_Shape_mpz_class_from_Congruence_System
(ppl_BD_Shape_mpz_class_t * *pph*, ppl_const_Congruence_System_t *cs*)
[related]
- 10.13.2.112 **int** ppl_new_BD_Shape_mpz_class_from_Constraint_System
(ppl_BD_Shape_mpz_class_t * *pph*, ppl_const_Constraint_System_t *cs*)
[related]
- 10.13.2.113 **int** ppl_new_BD_Shape_mpz_class_from_Double_Box (ppl_BD_Shape_mpz_class_t *
pph, ppl_const_Double_Box_t *ph*) [related]
- 10.13.2.114 **int** ppl_new_BD_Shape_mpz_class_from_Double_Box_with_complexity
(ppl_BD_Shape_mpz_class_t * *pph*, ppl_const_Double_Box_t *ph*, int *complexity*)
[related]
- 10.13.2.115 **int** ppl_new_BD_Shape_mpz_class_from_Float_Box (ppl_BD_Shape_mpz_class_t *
pph, ppl_const_Float_Box_t *ph*) [related]
- 10.13.2.116 **int** ppl_new_BD_Shape_mpz_class_from_Float_Box_with_complexity
(ppl_BD_Shape_mpz_class_t * *pph*, ppl_const_Float_Box_t *ph*, int *complexity*)
[related]
- 10.13.2.117 **int** ppl_new_BD_Shape_mpz_class_from_Generator_System
(ppl_BD_Shape_mpz_class_t * *pph*, ppl_const_Generator_System_t *cs*) [related]
- 10.13.2.118 **int** ppl_new_BD_Shape_mpz_class_from_Grid (ppl_BD_Shape_mpz_class_t * *pph*,
ppl_const_Grid_t *ph*) [related]

- 10.13.2.119 `int ppl_new_BD_Shape_mpz_class_from_Grid_with_complexity`
(`ppl_BD_Shape_mpz_class_t * pph`, `ppl_const_Grid_t ph`, `int complexity`)
[related]
- 10.13.2.120 `int ppl_new_BD_Shape_mpz_class_from_Int16_Box` (`ppl_BD_Shape_mpz_class_t *`
`pph`, `ppl_const_Int16_Box_t ph`) [related]
- 10.13.2.121 `int ppl_new_BD_Shape_mpz_class_from_Int16_Box_with_complexity`
(`ppl_BD_Shape_mpz_class_t * pph`, `ppl_const_Int16_Box_t ph`, `int complexity`)
[related]
- 10.13.2.122 `int ppl_new_BD_Shape_mpz_class_from_Int32_Box` (`ppl_BD_Shape_mpz_class_t *`
`pph`, `ppl_const_Int32_Box_t ph`) [related]
- 10.13.2.123 `int ppl_new_BD_Shape_mpz_class_from_Int32_Box_with_complexity`
(`ppl_BD_Shape_mpz_class_t * pph`, `ppl_const_Int32_Box_t ph`, `int complexity`)
[related]
- 10.13.2.124 `int ppl_new_BD_Shape_mpz_class_from_Int64_Box` (`ppl_BD_Shape_mpz_class_t *`
`pph`, `ppl_const_Int64_Box_t ph`) [related]
- 10.13.2.125 `int ppl_new_BD_Shape_mpz_class_from_Int64_Box_with_complexity`
(`ppl_BD_Shape_mpz_class_t * pph`, `ppl_const_Int64_Box_t ph`, `int complexity`)
[related]
- 10.13.2.126 `int ppl_new_BD_Shape_mpz_class_from_Int8_Box` (`ppl_BD_Shape_mpz_class_t *`
`pph`, `ppl_const_Int8_Box_t ph`) [related]

- 10.13.2.127** `int ppl_new_BD_Shape_mpz_class_from_Int8_Box_with_complexity`
(`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_Int8_Box_t ph`, `int complexity`)
[related]
- 10.13.2.128** `int ppl_new_BD_Shape_mpz_class_from_Long_Double_Box`
(`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_Long_Double_Box_t ph`)
[related]
- 10.13.2.129** `int ppl_new_BD_Shape_mpz_class_from_Long_Double_Box_with_complexity`
(`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_Long_Double_Box_t ph`, `int complexity`) [related]
- 10.13.2.130** `int ppl_new_BD_Shape_mpz_class_from_NNC_Polyhedron`
(`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_Polyhedron_t ph`) [related]
- 10.13.2.131** `int ppl_new_BD_Shape_mpz_class_from_NNC_Polyhedron_with_complexity`
(`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_Polyhedron_t ph`, `int complexity`)
[related]
- 10.13.2.132** `int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_double`
(`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_Octagonal_Shape_double_t ph`)
[related]
- 10.13.2.133** `int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_double_with_complexity`
(`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_Octagonal_Shape_double_t ph`, `int complexity`) [related]
- 10.13.2.134** `int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_float`
(`ppl_BD_Shape_mpz_class_t *pph`, `ppl_const_Octagonal_Shape_float_t ph`)
[related]

- 10.13.2.135 `int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_float_with_complexity`
 (`ppl_BD_Shape_mpz_class_t * pph`, `ppl_const_Octagonal_Shape_float_t ph`, `int complexity`) [`related`]
- 10.13.2.136 `int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_int16_t`
 (`ppl_BD_Shape_mpz_class_t * pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`)
 [`related`]
- 10.13.2.137 `int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_int16_t_with_complexity`
 (`ppl_BD_Shape_mpz_class_t * pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`, `int complexity`) [`related`]
- 10.13.2.138 `int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_int32_t`
 (`ppl_BD_Shape_mpz_class_t * pph`, `ppl_const_Octagonal_Shape_int32_t_t ph`)
 [`related`]
- 10.13.2.139 `int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_int32_t_with_complexity`
 (`ppl_BD_Shape_mpz_class_t * pph`, `ppl_const_Octagonal_Shape_int32_t_t ph`, `int complexity`) [`related`]
- 10.13.2.140 `int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_int64_t`
 (`ppl_BD_Shape_mpz_class_t * pph`, `ppl_const_Octagonal_Shape_int64_t_t ph`)
 [`related`]
- 10.13.2.141 `int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_int64_t_with_complexity`
 (`ppl_BD_Shape_mpz_class_t * pph`, `ppl_const_Octagonal_Shape_int64_t_t ph`, `int complexity`) [`related`]
- 10.13.2.142 `int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_int8_t`
 (`ppl_BD_Shape_mpz_class_t * pph`, `ppl_const_Octagonal_Shape_int8_t_t ph`)
 [`related`]

10.13.2.143 `int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_int8_t_with_complexity (ppl_BD_Shape_mpz_class_t * pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)` [related]

10.13.2.144 `int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_long_double (ppl_BD_Shape_mpz_class_t * pph, ppl_const_Octagonal_Shape_long_double_t ph)` [related]

10.13.2.145 `int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_-long_double_with_complexity (ppl_BD_Shape_mpz_class_t * pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)` [related]

10.13.2.146 `int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_mpq_class (ppl_BD_Shape_mpz_class_t * pph, ppl_const_Octagonal_Shape_mpq_class_t ph)` [related]

10.13.2.147 `int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_-mpq_class_with_complexity (ppl_BD_Shape_mpz_class_t * pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)` [related]

10.13.2.148 `int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_mpz_class (ppl_BD_Shape_mpz_class_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph)` [related]

10.13.2.149 `int ppl_new_BD_Shape_mpz_class_from_Octagonal_Shape_-mpz_class_with_complexity (ppl_BD_Shape_mpz_class_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)` [related]

10.13.2.150 `int ppl_new_BD_Shape_mpz_class_from_Rational_Box (ppl_BD_Shape_mpz_class_t * pph, ppl_const_Rational_Box_t ph)` [related]

- 10.13.2.151 `int ppl_new_BD_Shape_mpz_class_from_Rational_Box_with_complexity`
`(ppl_BD_Shape_mpz_class_t * pph, ppl_const_Rational_Box_t ph, int complexity)`
`[related]`

- 10.13.2.152 `int ppl_new_BD_Shape_mpz_class_from_space_dimension`
`(ppl_BD_Shape_mpz_class_t * pph, ppl_dimension_type d, int empty)` `[related]`

- 10.13.2.153 `int ppl_new_BD_Shape_mpz_class_from_Uint16_Box` `(ppl_BD_Shape_mpz_class_t *`
`pph, ppl_const_Uint16_Box_t ph)` `[related]`

- 10.13.2.154 `int ppl_new_BD_Shape_mpz_class_from_Uint16_Box_with_complexity`
`(ppl_BD_Shape_mpz_class_t * pph, ppl_const_Uint16_Box_t ph, int complexity)`
`[related]`

- 10.13.2.155 `int ppl_new_BD_Shape_mpz_class_from_Uint32_Box` `(ppl_BD_Shape_mpz_class_t *`
`pph, ppl_const_Uint32_Box_t ph)` `[related]`

- 10.13.2.156 `int ppl_new_BD_Shape_mpz_class_from_Uint32_Box_with_complexity`
`(ppl_BD_Shape_mpz_class_t * pph, ppl_const_Uint32_Box_t ph, int complexity)`
`[related]`

- 10.13.2.157 `int ppl_new_BD_Shape_mpz_class_from_Uint64_Box` `(ppl_BD_Shape_mpz_class_t *`
`pph, ppl_const_Uint64_Box_t ph)` `[related]`

- 10.13.2.158 `int ppl_new_BD_Shape_mpz_class_from_Uint64_Box_with_complexity`
`(ppl_BD_Shape_mpz_class_t * pph, ppl_const_Uint64_Box_t ph, int complexity)`
`[related]`

- 10.13.2.159 `int ppl_new_BD_Shape_mpz_class_from_Uint8_Box` `(ppl_BD_Shape_mpz_class_t *`
`pph, ppl_const_Uint8_Box_t ph)` `[related]`

- 10.13.2.160 `int ppl_new_BD_Shape_mpz_class_from_Uint8_Box_with_complexity`
 (`ppl_BD_Shape_mpz_class_t * pph`, `ppl_const_Uint8_Box_t ph`, `int complexity`)
 [`related`]
- 10.13.2.161 `int ppl_new_BD_Shape_mpz_class_from_Z_Box` (`ppl_BD_Shape_mpz_class_t * pph`,
`ppl_const_Z_Box_t ph`) [`related`]
- 10.13.2.162 `int ppl_new_BD_Shape_mpz_class_from_Z_Box_with_complexity`
 (`ppl_BD_Shape_mpz_class_t * pph`, `ppl_const_Z_Box_t ph`, `int complexity`)
 [`related`]
- 10.13.2.163 `int ppl_new_BD_Shape_mpz_class_recycle_Congruence_System`
 (`ppl_BD_Shape_mpz_class_t * pph`, `ppl_Congruence_System_t cs`) [`related`]
- 10.13.2.164 `int ppl_new_BD_Shape_mpz_class_recycle_Constraint_System`
 (`ppl_BD_Shape_mpz_class_t * pph`, `ppl_Constraint_System_t cs`) [`related`]
- 10.13.2.165 `int ppl_new_BD_Shape_mpz_class_recycle_Generator_System`
 (`ppl_BD_Shape_mpz_class_t * pph`, `ppl_Generator_System_t cs`) [`related`]
- 10.13.2.166 `int ppl_one_affine_ranking_function_MS_BD_Shape_mpz_class`
 (`ppl_const_BD_Shape_mpz_class_t pset`, `ppl_Generator_t point`) [`related`]
- 10.13.2.167 `int ppl_one_affine_ranking_function_MS_BD_Shape_mpz_class_2`
 (`ppl_const_BD_Shape_mpz_class_t pset_before`, `ppl_const_BD_Shape_mpz_class_t`
`pset_after`, `ppl_Generator_t point`) [`related`]
- 10.13.2.168 `int ppl_one_affine_ranking_function_PR_BD_Shape_mpz_class`
 (`ppl_const_BD_Shape_mpz_class_t pset`, `ppl_Generator_t point`) [`related`]

- 10.13.2.169 `int ppl_one_affine_ranking_function_PR_BD_Shape_mpz_class_2`
 (`ppl_const_BD_Shape_mpz_class_t pset_before`, `ppl_const_BD_Shape_mpz_class_t pset_after`, `ppl_Generator_t point`) [**related**]
- 10.13.2.170 `int ppl_termination_test_MS_BD_Shape_mpz_class` (`ppl_const_BD_Shape_mpz_class_t pset`) [**related**]
- 10.13.2.171 `int ppl_termination_test_MS_BD_Shape_mpz_class_2` (`ppl_const_BD_Shape_mpz_class_t pset_before`, `ppl_const_BD_Shape_mpz_class_t pset_after`) [**related**]
- 10.13.2.172 `int ppl_termination_test_PR_BD_Shape_mpz_class` (`ppl_const_BD_Shape_mpz_class_t pset`) [**related**]
- 10.13.2.173 `int ppl_termination_test_PR_BD_Shape_mpz_class_2` (`ppl_const_BD_Shape_mpz_class_t pset_before`, `ppl_const_BD_Shape_mpz_class_t pset_after`) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.14 `ppl_Coefficient_tag` Interface Reference

Types and functions for coefficients.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

Constructors, Assignment and Destructor

- `int ppl_new_Coefficient` (`ppl_Coefficient_t *pc`)
Creates a new coefficient with value 0 and writes a handle for the newly created coefficient at address `pc`.
- `int ppl_new_Coefficient_from_mpz_t` (`ppl_Coefficient_t *pc`, `mpz_t z`)
Creates a new coefficient with the value given by the GMP integer `z` and writes a handle for the newly created coefficient at address `pc`.

- `int ppl_new_Coefficient_from_Coefficient (ppl_Coefficient_t *pc, ppl_const_Coefficient_t c)`
Builds a coefficient that is a copy of `c`; writes a handle for the newly created coefficient at address `pc`.
- `int ppl_assign_Coefficient_from_mpz_t (ppl_Coefficient_t dst, mpz_t z)`
Assign to `dst` the value given by the GMP integer `z`.
- `int ppl_assign_Coefficient_from_Coefficient (ppl_Coefficient_t dst, ppl_const_Coefficient_t src)`
Assigns a copy of the coefficient `src` to `dst`.
- `int ppl_delete_Coefficient (ppl_const_Coefficient_t c)`
Invalidates the handle `c`: this makes sure the corresponding resources will eventually be released.

Read-Only Accessor Functions

- `int ppl_Coefficient_to_mpz_t (ppl_const_Coefficient_t c, mpz_t z)`
Sets the value of the GMP integer `z` to the value of `c`.
- `int ppl_Coefficient_OK (ppl_const_Coefficient_t c)`
Returns a positive integer if `c` is well formed, i.e., if it satisfies all its implementation invariants; returns 0 and perhaps makes some noise if `c` is broken. Useful for debugging purposes.
- `int ppl_Coefficient_is_bounded (void)`
Returns a positive integer if coefficients are bounded; returns 0 otherwise.
- `int ppl_Coefficient_min (mpz_t min)`
Returns a positive integer if coefficients are bounded, in which case `min` is set to their minimum value; returns 0 otherwise.
- `int ppl_Coefficient_max (mpz_t max)`
Returns a positive integer if coefficients are bounded, in which case `max` is set to their maximum value; returns 0 otherwise.

10.14.1 Detailed Description

Types and functions for coefficients. The types and functions for coefficients provide an interface towards *Coefficient*. Depending on configuration, the PPL coefficients may be implemented by the unbounded precision integers provided by GMP (default), or by bounded precision integers (with checks for overflows).

10.14.2 Friends And Related Function Documentation

10.14.2.1 `int ppl_assign_Coefficient_from_Coefficient (ppl_Coefficient_t dst, ppl_const_Coefficient_t src)` [related]

Assigns a copy of the coefficient `src` to `dst`.

Definition at line 442 of file `ppl_c_implementation_common.cc`.

10.14.2.2 int ppl_assign_Coefficient_from_mpz_t (ppl_Coefficient_t *dst*, mpz_t *z*) [related]

Assign to *dst* the value given by the GMP integer *z*.

Definition at line 434 of file `ppl_c_implementation_common.cc`.

10.14.2.3 int ppl_Coefficient_is_bounded (void) [related]

Returns a positive integer if coefficients are bounded; returns 0 otherwise.

Definition at line 458 of file `ppl_c_implementation_common.cc`.

10.14.2.4 int ppl_Coefficient_max (mpz_t *max*) [related]

Returns a positive integer if coefficients are bounded, in which case *max* is set to their maximum value; returns 0 otherwise.

Definition at line 477 of file `ppl_c_implementation_common.cc`.

10.14.2.5 int ppl_Coefficient_min (mpz_t *min*) [related]

Returns a positive integer if coefficients are bounded, in which case *min* is set to their minimum value; returns 0 otherwise.

Definition at line 464 of file `ppl_c_implementation_common.cc`.

10.14.2.6 int ppl_Coefficient_OK (ppl_const_Coefficient_t *c*) [related]

Returns a positive integer if *c* is well formed, i.e., if it satisfies all its implementation invariants; returns 0 and perhaps makes some noise if *c* is broken. Useful for debugging purposes.

Definition at line 452 of file `ppl_c_implementation_common.cc`.

10.14.2.7 int ppl_Coefficient_to_mpz_t (ppl_const_Coefficient_t *c*, mpz_t *z*) [related]

Sets the value of the GMP integer *z* to the value of *c*.

Definition at line 420 of file `ppl_c_implementation_common.cc`.

10.14.2.8 int ppl_delete_Coefficient (ppl_const_Coefficient_t *c*) [related]

Invalidates the handle *c*: this makes sure the corresponding resources will eventually be released.

Definition at line 427 of file ppl_c_implementation_common.cc.

10.14.2.9 int ppl_new_Coefficient (ppl_Coefficient_t * pc) [related]

Creates a new coefficient with value 0 and writes a handle for the newly created coefficient at address pc.

Definition at line 397 of file ppl_c_implementation_common.cc.

10.14.2.10 int ppl_new_Coefficient_from_Coefficient (ppl_Coefficient_t * pc, ppl_const_Coefficient_t c) [related]

Builds a coefficient that is a copy of c; writes a handle for the newly created coefficient at address pc.

Definition at line 411 of file ppl_c_implementation_common.cc.

10.14.2.11 int ppl_new_Coefficient_from_mpz_t (ppl_Coefficient_t * pc, mpz_t z) [related]

Creates a new coefficient with the value given by the GMP integer z and writes a handle for the newly created coefficient at address pc.

Definition at line 404 of file ppl_c_implementation_common.cc.

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.15 ppl_Congruence_System_const_iterator_tag Interface Reference

Types and functions for iterating on congruence systems.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

Constructors, Assignment and Destructor

- int [ppl_new_Congruence_System_const_iterator](#) (ppl_Congruence_System_const_iterator_t * pcit)
Builds a new 'const iterator' and writes a handle to it at address pcit.
- int [ppl_new_Congruence_System_const_iterator_from_Congruence_System_const_iterator](#) (ppl_Congruence_System_const_iterator_t * pcit, ppl_const_Congruence_System_const_iterator_t cit)
Builds a const iterator that is a copy of cit; writes a handle for the newly created const iterator at address pcit.

- `int ppl_assign_Congruence_System_const_iterator_from_Congruence_System_const_iterator` (`ppl_Congruence_System_const_iterator_t dst`, `ppl_const_Congruence_System_const_iterator_t src`)
Assigns a copy of the const iterator `src` to `dst`.
- `int ppl_delete_Congruence_System_const_iterator` (`ppl_const_Congruence_System_const_iterator_t cit`)
Invalidates the handle `cit`: this makes sure the corresponding resources will eventually be released.

Dereferencing, Incrementing and Equality Testing

- `int ppl_Congruence_System_const_iterator_dereference` (`ppl_const_Congruence_System_const_iterator_t cit`, `ppl_const_Congruence_t *pc`)
Dereference `cit` writing a const handle to the resulting congruence at address `pc`.
- `int ppl_Congruence_System_const_iterator_increment` (`ppl_Congruence_System_const_iterator_t cit`)
Increment `cit` so that it "points" to the next congruence.
- `int ppl_Congruence_System_const_iterator_equal_test` (`ppl_const_Congruence_System_const_iterator_t x`, `ppl_const_Congruence_System_const_iterator_t y`)
Returns a positive integer if the iterators corresponding to `x` and `y` are equal; returns 0 if they are different.

10.15.1 Detailed Description

Types and functions for iterating on congruence systems. The types and functions for congruence systems iterators provide read-only access to the elements of a congruence system by interfacing `Congruence_System::const_iterator`.

10.15.2 Friends And Related Function Documentation

10.15.2.1 `int ppl_assign_Congruence_System_const_iterator_from_Congruence_System_const_iterator` (`ppl_Congruence_System_const_iterator_t dst`, `ppl_const_Congruence_System_const_iterator_t src`) [**related**]

Assigns a copy of the const iterator `src` to `dst`.

Definition at line 1496 of file `ppl_c_implementation_common.cc`.

10.15.2.2 `int ppl_Congruence_System_const_iterator_dereference` (`ppl_const_Congruence_System_const_iterator_t cit`, `ppl_const_Congruence_t *pc`) [**related**]

Dereference `cit` writing a const handle to the resulting congruence at address `pc`.

Definition at line 1527 of file `ppl_c_implementation_common.cc`.

10.15.2.3 `int ppl_Congruence_System_const_iterator_equal_test (ppl_const_Congruence_System_const_iterator_t x, ppl_const_Congruence_System_const_iterator_t y)` **[related]**

Returns a positive integer if the iterators corresponding to `x` and `y` are equal; returns 0 if they are different.
Definition at line 1547 of file `ppl_c_implementation_common.cc`.

10.15.2.4 `int ppl_Congruence_System_const_iterator_increment (ppl_Congruence_System_const_iterator_t cit)` **[related]**

Increment `cit` so that it "points" to the next congruence.
Definition at line 1538 of file `ppl_c_implementation_common.cc`.

10.15.2.5 `int ppl_delete_Congruence_System_const_iterator (ppl_const_Congruence_System_const_iterator_t cit)` **[related]**

Invalidates the handle `cit`: this makes sure the corresponding resources will eventually be released.
Definition at line 1487 of file `ppl_c_implementation_common.cc`.

10.15.2.6 `int ppl_new_Congruence_System_const_iterator (ppl_Congruence_System_const_iterator_t * pcit)` **[related]**

Builds a new 'const iterator' and writes a handle to it at address `pcit`.
Definition at line 1470 of file `ppl_c_implementation_common.cc`.

10.15.2.7 `int ppl_new_Congruence_System_const_iterator_from_Congruence_System_const_iterator (ppl_Congruence_System_const_iterator_t * pcit, ppl_const_Congruence_System_const_iterator_t cit)` **[related]**

Builds a const iterator that is a copy of `cit`; writes a handle for the newly created const iterator at address `pcit`.

Definition at line 1478 of file `ppl_c_implementation_common.cc`.

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.16 ppl_Congruence_System_tag Interface Reference

Types and functions for congruence systems.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

Constructors, Assignment and Destructor

- `int ppl_new_Congruence_System (ppl_Congruence_System_t *pcs)`
Builds an empty system of congruences and writes a handle to it at address `pcs`.
- `int ppl_new_Congruence_System_zero_dim_empty (ppl_Congruence_System_t *pcs)`
Builds a zero-dimensional, unsatisfiable congruence system and writes a handle to it at address `pcs`.
- `int ppl_new_Congruence_System_from_Congruence (ppl_Congruence_System_t *pcs, ppl_Const_Congruence_t c)`
Builds the singleton congruence system containing only a copy of congruence `c`; writes a handle for the newly created system at address `pcs`.
- `int ppl_new_Congruence_System_from_Congruence_System (ppl_Congruence_System_t *pcs, ppl_Const_Congruence_System_t cs)`
Builds a congruence system that is a copy of `cs`; writes a handle for the newly created system at address `pcs`.
- `int ppl_assign_Congruence_System_from_Congruence_System (ppl_Congruence_System_t dst, ppl_Const_Congruence_System_t src)`
Assigns a copy of the congruence system `src` to `dst`.
- `int ppl_delete_Congruence_System (ppl_Const_Congruence_System_t cs)`
Invalidates the handle `cs`: this makes sure the corresponding resources will eventually be released.

Functions that Do Not Modify the Congruence System

- `int ppl_Congruence_System_space_dimension (ppl_Const_Congruence_System_t cs, ppl_Dimension_type *m)`
Writes to `m` the dimension of the vector space enclosing `cs`.
- `int ppl_Congruence_System_empty (ppl_Const_Congruence_System_t cs)`
Returns a positive integer if `cs` contains no (non-trivial) congruence; returns 0 otherwise.
- `int ppl_Congruence_System_begin (ppl_Const_Congruence_System_t cs, ppl_Congruence_System_Const_iterator_t cit)`
Assigns to `cit` a const iterator "pointing" to the beginning of the congruence system `cs`.
- `int ppl_Congruence_System_end (ppl_Const_Congruence_System_t cs, ppl_Congruence_System_Const_iterator_t cit)`
Assigns to `cit` a const iterator "pointing" past the end of the congruence system `cs`.
- `int ppl_Congruence_System_OK (ppl_Const_Congruence_System_t cs)`
Returns a positive integer if `cs` is well formed, i.e., if it satisfies all its implementation invariants; returns 0 and perhaps makes some noise if `cs` is broken. Useful for debugging purposes.

Functions that May Modify the Congruence System

- `int ppl_Congruence_System_clear (ppl_Congruence_System_t cs)`

Removes all the congruences from the congruence system `cs` and sets its space dimension to 0.

- `int ppl_Congruence_System_insert_Congruence (ppl_Congruence_System_t cs, ppl_const_Congruence_t c)`
Inserts a copy of the congruence `c` into `cs`; the space dimension is increased, if necessary.

10.16.1 Detailed Description

Types and functions for congruence systems. The types and functions for congruence systems provide an interface towards *Congruence_System*.

10.16.2 Friends And Related Function Documentation

10.16.2.1 `int ppl_assign_Congruence_System_from_Congruence_System (ppl_Congruence_System_t dst, ppl_const_Congruence_System_t src)` [related]

Assigns a copy of the congruence system `src` to `dst`.

Definition at line 1419 of file `ppl_c_implementation_common.cc`.

10.16.2.2 `int ppl_Congruence_System_begin (ppl_const_Congruence_System_t cs, ppl_Congruence_System_const_iterator_t cit)` [related]

Assigns to `cit` a const iterator "pointing" to the beginning of the congruence system `cs`.

Definition at line 1506 of file `ppl_c_implementation_common.cc`.

10.16.2.3 `int ppl_Congruence_System_clear (ppl_Congruence_System_t cs)` [related]

Removes all the congruences from the congruence system `cs` and sets its space dimension to 0.

Definition at line 1444 of file `ppl_c_implementation_common.cc`.

10.16.2.4 `int ppl_Congruence_System_empty (ppl_const_Congruence_System_t cs)` [related]

Returns a positive integer if `cs` contains no (non-trivial) congruence; returns 0 otherwise.

Definition at line 1437 of file `ppl_c_implementation_common.cc`.

10.16.2.5 `int ppl_Congruence_System_end (ppl_const_Congruence_System_t cs, ppl_Congruence_System_const_iterator_t cit)` [related]

Assigns to `cit` a const iterator "pointing" past the end of the congruence system `cs`.

Definition at line 1516 of file `ppl_c_implementation_common.cc`.

10.16.2.6 `int ppl_Congruence_System_insert_Congruence (ppl_Congruence_System_t cs, ppl_const_Congruence_t c) [related]`

Inserts a copy of the congruence `c` into `cs`; the space dimension is increased, if necessary.

Definition at line 1451 of file `ppl_c_implementation_common.cc`.

10.16.2.7 `int ppl_Congruence_System_OK (ppl_const_Congruence_System_t cs) [related]`

Returns a positive integer if `cs` is well formed, i.e., if it satisfies all its implementation invariants; returns 0 and perhaps makes some noise if `cs` is broken. Useful for debugging purposes.

Definition at line 1461 of file `ppl_c_implementation_common.cc`.

10.16.2.8 `int ppl_Congruence_System_space_dimension (ppl_const_Congruence_System_t cs, ppl_dimension_type * m) [related]`

Writes to `m` the dimension of the vector space enclosing `cs`.

Definition at line 1428 of file `ppl_c_implementation_common.cc`.

10.16.2.9 `int ppl_delete_Congruence_System (ppl_const_Congruence_System_t cs) [related]`

Invalidates the handle `cs`: this makes sure the corresponding resources will eventually be released.

Definition at line 1411 of file `ppl_c_implementation_common.cc`.

10.16.2.10 `int ppl_new_Congruence_System (ppl_Congruence_System_t * pcs) [related]`

Builds an empty system of congruences and writes a handle to it at address `pcs`.

Definition at line 1377 of file `ppl_c_implementation_common.cc`.

10.16.2.11 `int ppl_new_Congruence_System_from_Congruence (ppl_Congruence_System_t * pcs, ppl_const_Congruence_t c) [related]`

Builds the singleton congruence system containing only a copy of congruence `c`; writes a handle for the newly created system at address `pcs`.

Definition at line 1393 of file `ppl_c_implementation_common.cc`.

10.16.2.12 `int ppl_new_Congruence_System_from_Congruence_System` `(ppl_Congruence_System_t * pcs, ppl_const_Congruence_System_t cs)` **[related]**

Builds a congruence system that is a copy of `cs`; writes a handle for the newly created system at address `pcs`.

Definition at line 1403 of file `ppl_c_implementation_common.cc`.

10.16.2.13 `int ppl_new_Congruence_System_zero_dim_empty` `(ppl_Congruence_System_t * pcs)` **[related]**

Builds a zero-dimensional, unsatisfiable congruence system and writes a handle to it at address `pcs`.

Definition at line 1384 of file `ppl_c_implementation_common.cc`.

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.17 ppl_Congruence_tag Interface Reference

Types and functions for congruences.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

Constructors, Assignment and Destructor

- `int ppl_new_Congruence` `(ppl_Congruence_t * pc, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t m)`
Creates the new congruence $le = 0 \pmod m$ and writes a handle for it at address `pc`. The space dimension of the new congruence is equal to the space dimension of `le`.
- `int ppl_new_Congruence_zero_dim_false` `(ppl_Congruence_t * pc)`
Creates the unsatisfiable (zero-dimension space) congruence $0 = 1 \pmod 0$ and writes a handle for it at address `pc`.
- `int ppl_new_Congruence_zero_dim_integrity` `(ppl_Congruence_t * pc)`
Creates the true (zero-dimension space) congruence $0 = 1 \pmod 1$, also known as integrity congruence. A handle for the newly created congruence is written at address `pc`.
- `int ppl_new_Congruence_from_Congruence` `(ppl_Congruence_t * pc, ppl_const_Congruence_t c)`
Builds a congruence that is a copy of `c`; writes a handle for the newly created congruence at address `pc`.
- `int ppl_assign_Congruence_from_Congruence` `(ppl_Congruence_t dst, ppl_const_Congruence_t src)`

Assigns a copy of the congruence `src` to `dst`.

- `int ppl_delete_Congruence (ppl_const_Congruence_t c)`
Invalidates the handle `c`: this makes sure the corresponding resources will eventually be released.

Functions that Do Not Modify the Congruence

- `int ppl_Congruence_space_dimension (ppl_const_Congruence_t c, ppl_dimension_type *m)`
Writes to `m` the space dimension of `c`.
- `int ppl_Congruence_coefficient (ppl_const_Congruence_t c, ppl_dimension_type var, ppl_Coefficient_t n)`
Copies into `n` the coefficient of variable `var` in congruence `c`.
- `int ppl_Congruence_inhomogeneous_term (ppl_const_Congruence_t c, ppl_Coefficient_t n)`
Copies into `n` the inhomogeneous term of congruence `c`.
- `int ppl_Congruence_modulus (ppl_const_Congruence_t c, ppl_Coefficient_t m)`
Copies into `m` the modulus of congruence `c`.
- `int ppl_Congruence_OK (ppl_const_Congruence_t c)`
Returns a positive integer if `c` is well formed, i.e., if it satisfies all its implementation invariants; returns 0 and perhaps makes some noise if `c` is broken. Useful for debugging purposes.

10.17.1 Detailed Description

Types and functions for congruences. The types and functions for congruences provide an interface towards *Congruence*.

10.17.2 Friends And Related Function Documentation

10.17.2.1 `int ppl_assign_Congruence_from_Congruence (ppl_Congruence_t dst, ppl_const_Congruence_t src)` [related]

Assigns a copy of the congruence `src` to `dst`.

Definition at line 1311 of file `ppl_c_implementation_common.cc`.

10.17.2.2 `int ppl_Congruence_coefficient (ppl_const_Congruence_t c, ppl_dimension_type var, ppl_Coefficient_t n)` [related]

Copies into `n` the coefficient of variable `var` in congruence `c`.

Definition at line 1329 of file `ppl_c_implementation_common.cc`.

10.17.2.3 `int ppl_Congruence_inhomogeneous_term (ppl_const_Congruence_t c, ppl_Coefficient_t n) [related]`

Copies into `n` the inhomogeneous term of congruence `c`.

Definition at line 1340 of file `ppl_c_implementation_common.cc`.

10.17.2.4 `int ppl_Congruence_modulus (ppl_const_Congruence_t c, ppl_Coefficient_t m) [related]`

Copies into `m` the modulus of congruence `c`.

Definition at line 1350 of file `ppl_c_implementation_common.cc`.

10.17.2.5 `int ppl_Congruence_OK (ppl_const_Congruence_t c) [related]`

Returns a positive integer if `c` is well formed, i.e., if it satisfies all its implementation invariants; returns 0 and perhaps makes some noise if `c` is broken. Useful for debugging purposes.

Definition at line 1360 of file `ppl_c_implementation_common.cc`.

10.17.2.6 `int ppl_Congruence_space_dimension (ppl_const_Congruence_t c, ppl_dimension_type * m) [related]`

Writes to `m` the space dimension of `c`.

Definition at line 1321 of file `ppl_c_implementation_common.cc`.

10.17.2.7 `int ppl_delete_Congruence (ppl_const_Congruence_t c) [related]`

Invalidates the handle `c`: this makes sure the corresponding resources will eventually be released.

Definition at line 1304 of file `ppl_c_implementation_common.cc`.

10.17.2.8 `int ppl_new_Congruence (ppl_Congruence_t * pc, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t m) [related]`

Creates the new congruence $le = 0 \pmod{m}$ and writes a handle for it at address `pc`. The space dimension of the new congruence is equal to the space dimension of `le`.

Definition at line 1268 of file `ppl_c_implementation_common.cc`.

10.17.2.9 `int ppl_new_Congruence_from_Congruence (ppl_Congruence_t * pc, ppl_const_Congruence_t c) [related]`

Builds a congruence that is a copy of `c`; writes a handle for the newly created congruence at address `pc`.

Definition at line 1295 of file `ppl_c_implementation_common.cc`.

10.17.2.10 `int ppl_new_Congruence_zero_dim_false (ppl_Congruence_t * pc) [related]`

Creates the unsatisfiable (zero-dimension space) congruence $0 = 1 \pmod{0}$ and writes a handle for it at address `pc`.

Definition at line 1281 of file `ppl_c_implementation_common.cc`.

10.17.2.11 `int ppl_new_Congruence_zero_dim_integrality (ppl_Congruence_t * pc) [related]`

Creates the true (zero-dimension space) congruence $0 = 1 \pmod{1}$, also known as *integrality congruence*. A handle for the newly created congruence is written at address `pc`.

Definition at line 1288 of file `ppl_c_implementation_common.cc`.

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.18 `ppl_Constraint_System_const_iterator_tag` Interface Reference

Types and functions for iterating on constraint systems.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

Constructors, Assignment and Destructor

- `int ppl_new_Constraint_System_const_iterator (ppl_Constraint_System_const_iterator_t * pcit)`
Builds a new ‘const iterator’ and writes a handle to it at address `pcit`.
- `int ppl_new_Constraint_System_const_iterator_from_Constraint_System_const_iterator (ppl_Constraint_System_const_iterator_t * pcit, ppl_const_Constraint_System_const_iterator_t cit)`
Builds a const iterator that is a copy of `cit`; writes a handle for the newly created const iterator at address `pcit`.
- `int ppl_assign_Constraint_System_const_iterator_from_Constraint_System_const_iterator (ppl_Constraint_System_const_iterator_t dst, ppl_const_Constraint_System_const_iterator_t src)`
Assigns a copy of the const iterator `src` to `dst`.

- int `ppl_delete_Constraint_System_const_iterator` (`ppl_const_Constraint_System_const_iterator_t cit`)

Invalidates the handle `cit`: this makes sure the corresponding resources will eventually be released.

Dereferencing, Incrementing and Equality Testing

- int `ppl_Constraint_System_const_iterator_dereference` (`ppl_const_Constraint_System_const_iterator_t cit`, `ppl_const_Constraint_t *pc`)

Dereference `cit` writing a const handle to the resulting constraint at address `pc`.

- int `ppl_Constraint_System_const_iterator_increment` (`ppl_Constraint_System_const_iterator_t cit`)

Increment `cit` so that it "points" to the next constraint.

- int `ppl_Constraint_System_const_iterator_equal_test` (`ppl_const_Constraint_System_const_iterator_t x`, `ppl_const_Constraint_System_const_iterator_t y`)

Returns a positive integer if the iterators corresponding to `x` and `y` are equal; returns 0 if they are different.

10.18.1 Detailed Description

Types and functions for iterating on constraint systems. The types and functions for constraint systems iterators provide read-only access to the elements of a constraint system by interfacing `Constraint_System::const_iterator`.

10.18.2 Friends And Related Function Documentation

10.18.2.1 int ppl_assign_Constraint_System_const_iterator_from_Constraint_System_const_iterator (`ppl_Constraint_System_const_iterator_t dst`, `ppl_const_Constraint_System_const_iterator_t src`) [related]

Assigns a copy of the const iterator `src` to `dst`.

Definition at line 895 of file `ppl_c_implementation_common.cc`.

10.18.2.2 int ppl_Constraint_System_const_iterator_dereference (`ppl_const_Constraint_System_const_iterator_t cit`, `ppl_const_Constraint_t *pc`) [related]

Dereference `cit` writing a const handle to the resulting constraint at address `pc`.

Definition at line 926 of file `ppl_c_implementation_common.cc`.

10.18.2.3 int ppl_Constraint_System_const_iterator_equal_test (`ppl_const_Constraint_System_const_iterator_t x`, `ppl_const_Constraint_System_const_iterator_t y`) [related]

Returns a positive integer if the iterators corresponding to `x` and `y` are equal; returns 0 if they are different.

Definition at line 946 of file `ppl_c_implementation_common.cc`.

10.18.2.4 `int ppl_Constraint_System_const_iterator_increment (ppl_Constraint_System_const_iterator_t cit)` **[related]**

Increment `cit` so that it "points" to the next constraint.

Definition at line 937 of file `ppl_c_implementation_common.cc`.

10.18.2.5 `int ppl_delete_Constraint_System_const_iterator (ppl_const_Constraint_System_const_iterator_t cit)` **[related]**

Invalidates the handle `cit`: this makes sure the corresponding resources will eventually be released.

Definition at line 886 of file `ppl_c_implementation_common.cc`.

10.18.2.6 `int ppl_new_Constraint_System_const_iterator (ppl_Constraint_System_const_iterator_t * pcit)` **[related]**

Builds a new 'const iterator' and writes a handle to it at address `pcit`.

Definition at line 869 of file `ppl_c_implementation_common.cc`.

10.18.2.7 `int ppl_new_Constraint_System_const_iterator_from_Constraint_System_const_iterator (ppl_Constraint_System_const_iterator_t * pcit, ppl_const_Constraint_System_const_iterator_t cit)` **[related]**

Builds a const iterator that is a copy of `cit`; writes a handle for the newly created const iterator at address `pcit`.

Definition at line 877 of file `ppl_c_implementation_common.cc`.

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.19 `ppl_Constraint_System_tag` Interface Reference

Types and functions for constraint systems.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

Constructors, Assignment and Destructor

- `int ppl_new_Constraint_System (ppl_Constraint_System_t *pcs)`
Builds an empty system of constraints and writes a handle to it at address `pcs`.
- `int ppl_new_Constraint_System_zero_dim_empty (ppl_Constraint_System_t *pcs)`
Builds a zero-dimensional, unsatisfiable constraint system and writes a handle to it at address `pcs`.
- `int ppl_new_Constraint_System_from_Constraint (ppl_Constraint_System_t *pcs, ppl_const_Constraint_t c)`
Builds the singleton constraint system containing only a copy of constraint `c`; writes a handle for the newly created system at address `pcs`.
- `int ppl_new_Constraint_System_from_Constraint_System (ppl_Constraint_System_t *pcs, ppl_Constraint_System_t cs)`
Builds a constraint system that is a copy of `cs`; writes a handle for the newly created system at address `pcs`.
- `int ppl_assign_Constraint_System_from_Constraint_System (ppl_Constraint_System_t dst, ppl_Constraint_System_t src)`
Assigns a copy of the constraint system `src` to `dst`.
- `int ppl_delete_Constraint_System (ppl_Constraint_System_t cs)`
Invalidates the handle `cs`: this makes sure the corresponding resources will eventually be released.

Functions that Do Not Modify the Constraint System

- `int ppl_Constraint_System_space_dimension (ppl_Constraint_System_t cs, ppl_Constraint_System_dimension_type *m)`
Writes to `m` the dimension of the vector space enclosing `cs`.
- `int ppl_Constraint_System_empty (ppl_Constraint_System_t cs)`
Returns a positive integer if `cs` contains no (non-trivial) constraint; returns 0 otherwise.
- `int ppl_Constraint_System_has_strict_inequalities (ppl_Constraint_System_t cs)`
Returns a positive integer if `cs` contains any (non-trivial) strict inequality; returns 0 otherwise.
- `int ppl_Constraint_System_begin (ppl_Constraint_System_t cs, ppl_Constraint_System_iterator_t cit)`
Assigns to `cit` a const iterator "pointing" to the beginning of the constraint system `cs`.
- `int ppl_Constraint_System_end (ppl_Constraint_System_t cs, ppl_Constraint_System_iterator_t cit)`
Assigns to `cit` a const iterator "pointing" past the end of the constraint system `cs`.
- `int ppl_Constraint_System_OK (ppl_Constraint_System_t cs)`
Returns a positive integer if `cs` is well formed, i.e., if it satisfies all its implementation invariants; returns 0 and perhaps makes some noise if `cs` is broken. Useful for debugging purposes.

Functions that May Modify the Constraint System

- `int ppl_Constraint_System_clear (ppl_Constraint_System_t cs)`
Removes all the constraints from the constraint system `cs` and sets its space dimension to 0.

- `int ppl_Constraint_System_insert_Constraint (ppl_Constraint_System_t cs, ppl_const_Constraint_t c)`

Inserts a copy of the constraint `c` into `cs`; the space dimension is increased, if necessary.

10.19.1 Detailed Description

Types and functions for constraint systems. The types and functions for constraint systems provide an interface towards *Constraint_System*.

10.19.2 Friends And Related Function Documentation

10.19.2.1 `int ppl_assign_Constraint_System_from_Constraint_System (ppl_Constraint_System_t dst, ppl_const_Constraint_System_t src)` [related]

Assigns a copy of the constraint system `src` to `dst`.

Definition at line 810 of file `ppl_c_implementation_common.cc`.

10.19.2.2 `int ppl_Constraint_System_begin (ppl_const_Constraint_System_t cs, ppl_Constraint_System_const_iterator_t cit)` [related]

Assigns to `cit` a const iterator "pointing" to the beginning of the constraint system `cs`.

Definition at line 905 of file `ppl_c_implementation_common.cc`.

10.19.2.3 `int ppl_Constraint_System_clear (ppl_Constraint_System_t cs)` [related]

Removes all the constraints from the constraint system `cs` and sets its space dimension to 0.

Definition at line 843 of file `ppl_c_implementation_common.cc`.

10.19.2.4 `int ppl_Constraint_System_empty (ppl_const_Constraint_System_t cs)` [related]

Returns a positive integer if `cs` contains no (non-trivial) constraint; returns 0 otherwise.

Definition at line 828 of file `ppl_c_implementation_common.cc`.

10.19.2.5 `int ppl_Constraint_System_end (ppl_const_Constraint_System_t cs, ppl_Constraint_System_const_iterator_t cit)` [related]

Assigns to `cit` a const iterator "pointing" past the end of the constraint system `cs`.

Definition at line 915 of file `ppl_c_implementation_common.cc`.

10.19.2.6 int ppl_Constraint_System_has_strict_inequalities (ppl_const_Constraint_System_t cs) [related]

Returns a positive integer if `cs` contains any (non-trivial) strict inequality; returns 0 otherwise.

Definition at line 836 of file `ppl_c_implementation_common.cc`.

10.19.2.7 int ppl_Constraint_System_insert_Constraint (ppl_Constraint_System_t cs, ppl_const_Constraint_t c) [related]

Inserts a copy of the constraint `c` into `cs`; the space dimension is increased, if necessary.

Definition at line 850 of file `ppl_c_implementation_common.cc`.

10.19.2.8 int ppl_Constraint_System_OK (ppl_const_Constraint_System_t cs) [related]

Returns a positive integer if `cs` is well formed, i.e., if it satisfies all its implementation invariants; returns 0 and perhaps makes some noise if `cs` is broken. Useful for debugging purposes.

Definition at line 860 of file `ppl_c_implementation_common.cc`.

10.19.2.9 int ppl_Constraint_System_space_dimension (ppl_const_Constraint_System_t cs, ppl_dimension_type * m) [related]

Writes to `m` the dimension of the vector space enclosing `cs`.

Definition at line 819 of file `ppl_c_implementation_common.cc`.

10.19.2.10 int ppl_delete_Constraint_System (ppl_const_Constraint_System_t cs) [related]

Invalidates the handle `cs`: this makes sure the corresponding resources will eventually be released.

Definition at line 802 of file `ppl_c_implementation_common.cc`.

10.19.2.11 int ppl_new_Constraint_System (ppl_Constraint_System_t * pcs) [related]

Builds an empty system of constraints and writes a handle to it at address `pcs`.

Definition at line 768 of file `ppl_c_implementation_common.cc`.

10.19.2.12 int ppl_new_Constraint_System_from_Constraint (ppl_Constraint_System_t * pcs, ppl_const_Constraint_t c) [related]

Builds the singleton constraint system containing only a copy of constraint `c`; writes a handle for the newly created system at address `pcs`.

Definition at line 784 of file `ppl_c_implementation_common.cc`.

10.19.2.13 `int ppl_new_Constraint_System_from_Constraint_System (ppl_Constraint_System_t * pcs, ppl_const_Constraint_System_t cs)` **[related]**

Builds a constraint system that is a copy of `cs`; writes a handle for the newly created system at address `pcs`.

Definition at line 794 of file `ppl_c_implementation_common.cc`.

10.19.2.14 `int ppl_new_Constraint_System_zero_dim_empty (ppl_Constraint_System_t * pcs)` **[related]**

Builds a zero-dimensional, unsatisfiable constraint system and writes a handle to it at address `pcs`.

Definition at line 775 of file `ppl_c_implementation_common.cc`.

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.20 ppl_Constraint_tag Interface Reference

Types and functions for constraints.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

Constructors, Assignment and Destructor

- `int ppl_new_Constraint (ppl_Constraint_t *pc, ppl_const_Linear_Expression_t le, enum ppl_enum_Constraint_Type rel)`
Creates the new constraint '`le rel 0`' and writes a handle for it at address `pc`. The space dimension of the new constraint is equal to the space dimension of `le`.
- `int ppl_new_Constraint_zero_dim_false (ppl_Constraint_t *pc)`
Creates the unsatisfiable (zero-dimension space) constraint $0 = 1$ and writes a handle for it at address `pc`.
- `int ppl_new_Constraint_zero_dim_positivity (ppl_Constraint_t *pc)`
Creates the true (zero-dimension space) constraint $0 \leq 1$, also known as positivity constraint. A handle for the newly created constraint is written at address `pc`.
- `int ppl_new_Constraint_from_Constraint (ppl_Constraint_t *pc, ppl_const_Constraint_t c)`
Builds a constraint that is a copy of `c`; writes a handle for the newly created constraint at address `pc`.

- `int ppl_assign_Constraint_from_Constraint (ppl_Constraint_t dst, ppl_const_Constraint_t src)`
Assigns a copy of the constraint `src` to `dst`.
- `int ppl_delete_Constraint (ppl_const_Constraint_t c)`
Invalidates the handle `c`: this makes sure the corresponding resources will eventually be released.

Functions that Do Not Modify the Constraint

- `int ppl_Constraint_space_dimension (ppl_const_Constraint_t c, ppl_dimension_type *m)`
Writes to `m` the space dimension of `c`.
- `int ppl_Constraint_type (ppl_const_Constraint_t c)`
Returns the type of constraint `c`.
- `int ppl_Constraint_coefficient (ppl_const_Constraint_t c, ppl_dimension_type var, ppl_Coefficient_t n)`
Copies into `n` the coefficient of variable `var` in constraint `c`.
- `int ppl_Constraint_inhomogeneous_term (ppl_const_Constraint_t c, ppl_Coefficient_t n)`
Copies into `n` the inhomogeneous term of constraint `c`.
- `int ppl_Constraint_OK (ppl_const_Constraint_t c)`
Returns a positive integer if `c` is well formed, i.e., if it satisfies all its implementation invariants; returns 0 and perhaps makes some noise if `c` is broken. Useful for debugging purposes.

10.20.1 Detailed Description

Types and functions for constraints. The types and functions for constraints provide an interface towards *Constraint*.

10.20.2 Friends And Related Function Documentation

10.20.2.1 `int ppl_assign_Constraint_from_Constraint (ppl_Constraint_t dst, ppl_const_Constraint_t src)` [related]

Assigns a copy of the constraint `src` to `dst`.

Definition at line 697 of file `ppl_c_implementation_common.cc`.

10.20.2.2 `int ppl_Constraint_coefficient (ppl_const_Constraint_t c, ppl_dimension_type var, ppl_Coefficient_t n)` [related]

Copies into `n` the coefficient of variable `var` in constraint `c`.

Definition at line 730 of file `ppl_c_implementation_common.cc`.

10.20.2.3 `int ppl_Constraint_inhomogeneous_term (ppl_const_Constraint_t c, ppl_Coefficient_t n)` **[related]**

Copies into `n` the inhomogeneous term of constraint `c`.

Definition at line 741 of file `ppl_c_implementation_common.cc`.

10.20.2.4 `int ppl_Constraint_OK (ppl_const_Constraint_t c)` **[related]**

Returns a positive integer if `c` is well formed, i.e., if it satisfies all its implementation invariants; returns 0 and perhaps makes some noise if `c` is broken. Useful for debugging purposes.

Definition at line 751 of file `ppl_c_implementation_common.cc`.

10.20.2.5 `int ppl_Constraint_space_dimension (ppl_const_Constraint_t c, ppl_dimension_type * m)` **[related]**

Writes to `m` the space dimension of `c`.

Definition at line 707 of file `ppl_c_implementation_common.cc`.

10.20.2.6 `int ppl_Constraint_type (ppl_const_Constraint_t c)` **[related]**

Returns the type of constraint `c`.

Definition at line 715 of file `ppl_c_implementation_common.cc`.

10.20.2.7 `int ppl_delete_Constraint (ppl_const_Constraint_t c)` **[related]**

Invalidates the handle `c`: this makes sure the corresponding resources will eventually be released.

Definition at line 690 of file `ppl_c_implementation_common.cc`.

10.20.2.8 `int ppl_new_Constraint (ppl_Constraint_t * pc, ppl_const_Linear_Expression_t le, enum ppl_enum_Constraint_Type rel)` **[related]**

Creates the new constraint '`le rel 0`' and writes a handle for it at address `pc`. The space dimension of the new constraint is equal to the space dimension of `le`.

Definition at line 636 of file `ppl_c_implementation_common.cc`.

10.20.2.9 int ppl_new_Constraint_from_Constraint (ppl_Constraint_t * pc, ppl_const_Constraint_t c) [related]

Builds a constraint that is a copy of `c`; writes a handle for the newly created constraint at address `pc`.

Definition at line 681 of file `ppl_c_implementation_common.cc`.

10.20.2.10 int ppl_new_Constraint_zero_dim_false (ppl_Constraint_t * pc) [related]

Creates the unsatisfiable (zero-dimension space) constraint $0 = 1$ and writes a handle for it at address `pc`.

Definition at line 667 of file `ppl_c_implementation_common.cc`.

10.20.2.11 int ppl_new_Constraint_zero_dim_positivity (ppl_Constraint_t * pc) [related]

Creates the true (zero-dimension space) constraint $0 \leq 1$, also known as *positivity constraint*. A handle for the newly created constraint is written at address `pc`.

Definition at line 674 of file `ppl_c_implementation_common.cc`.

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.21 ppl_Constraints_Product_C_Polyhedron_Grid_tag Interface Reference

Types and functions for [ppl_Constraints_Product_C_Polyhedron_Grid_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- int [ppl_delete_Constraints_Product_C_Polyhedron_Grid](#) (ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph)
- int [ppl_new_Constraints_Product_C_Polyhedron_Grid_from_space_dimension](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_dimension_type d, int empty)
- int [ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Int8_Box](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Int8_Box_t ph)
- int [ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Int16_Box](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Int16_Box_t ph)
- int [ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Int32_Box](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Int32_Box_t ph)
- int [ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Int64_Box](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Int64_Box_t ph)
- int [ppl_new_Constraints_Product_C_Polyhedron_Grid_from_UInt8_Box](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_UInt8_Box_t ph)

- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Uint16_Box](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Uint16_Box_t ph)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Uint32_Box](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Uint32_Box_t ph)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Uint64_Box](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Uint64_Box_t ph)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Z_Box](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Z_Box_t ph)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Rational_Box](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Rational_Box_t ph)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_Shape_int8_t](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_int8_t_t ph)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_Shape_int16_t](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_int16_t_t ph)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_Shape_int32_t](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_int32_t_t ph)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_Shape_int64_t](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_int64_t_t ph)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_Shape_mpz_class](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_mpz_class_t ph)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_Shape_mpq_class](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_mpq_class_t ph)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_Shape_int8_t](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_Shape_int16_t](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_Shape_int32_t](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_Shape_int64_t](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_Shape_mpz_class](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_Shape_mpq_class](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_C_Polyhedron](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Polyhedron_t ph)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_NNC_Polyhedron](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Polyhedron_t ph)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Grid](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Grid_t ph)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Float_Box](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Float_Box_t ph)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_Shape_float](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_float_t ph)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_Shape_float](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_float_t ph)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Double_Box](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Double_Box_t ph)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_Shape_double](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_double_t ph)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_Shape_double](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_double_t ph)

- int [ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Long_Double_Box](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Long_Double_Box_t ph)
- int [ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_Shape_long_double](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_long_double_t ph)
- int [ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_Shape_long_double](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_long_double_t ph)
- int [ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Constraints_Product_C_Polyhedron_Grid](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph)
- int [ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Int8_Box_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Int8_Box_t ph, int complexity)
- int [ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Int16_Box_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Int16_Box_t ph, int complexity)
- int [ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Int32_Box_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Int32_Box_t ph, int complexity)
- int [ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Int64_Box_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Int64_Box_t ph, int complexity)
- int [ppl_new_Constraints_Product_C_Polyhedron_Grid_from_UInt8_Box_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_UInt8_Box_t ph, int complexity)
- int [ppl_new_Constraints_Product_C_Polyhedron_Grid_from_UInt16_Box_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_UInt16_Box_t ph, int complexity)
- int [ppl_new_Constraints_Product_C_Polyhedron_Grid_from_UInt32_Box_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_UInt32_Box_t ph, int complexity)
- int [ppl_new_Constraints_Product_C_Polyhedron_Grid_from_UInt64_Box_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_UInt64_Box_t ph, int complexity)
- int [ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Z_Box_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Z_Box_t ph, int complexity)
- int [ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Rational_Box_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Rational_Box_t ph, int complexity)
- int [ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_Shape_int8_t_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)
- int [ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_Shape_int16_t_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)
- int [ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_Shape_int32_t_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)
- int [ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_Shape_int64_t_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)
- int [ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_Shape_mpz_class_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_Shape_mpq_class_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_Shape_int8_t_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)

- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_Shape_int16_t_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_Shape_int32_t_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_Shape_int64_t_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_Shape_mpz_class_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_Shape_mpq_class_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_C_Polyhedron_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_NNC_Polyhedron_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Grid_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Grid_t ph, int complexity)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Float_Box_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Float_Box_t ph, int complexity)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_Shape_float_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_float_t ph, int complexity)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_Shape_float_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Double_Box_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Double_Box_t ph, int complexity)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_Shape_double_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_double_t ph, int complexity)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_Shape_double_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Long_Double_Box_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_Shape_long_double_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_Shape_long_double_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Constraints_Product_C_Polyhedron_Grid_with_complexity](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph, int complexity)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Constraint_System](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Constraint_System_t cs)
- [int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Congruence_System](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t *pph, ppl_const_Congruence_System_t cs)

- int [ppl_Constraints_Product_C_Polyhedron_Grid_space_dimension](#) (ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_dimension_type *m)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_affine_dimension](#) (ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_dimension_type *m)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_relation_with_Constraint](#) (ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_const_Constraint_t c)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_relation_with_Generator](#) (ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_const_Generator_t c)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_relation_with_Congruence](#) (ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_const_Congruence_t c)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_is_empty](#) (ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_is_universe](#) (ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_is_bounded](#) (ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_is_topologically_closed](#) (ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_is_discrete](#) (ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_topological_closure_assign](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t ph)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_bounds_from_above](#) (ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_bounds_from_below](#) (ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_maximize](#) (ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_minimize](#) (ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_maximize_with_point](#) (ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_minimize_with_point](#) (ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_contains_Constraints_Product_C_Polyhedron_Grid](#) (ppl_const_Constraints_Product_C_Polyhedron_Grid_t x, ppl_const_Constraints_Product_C_Polyhedron_Grid_t y)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_strictly_contains_Constraints_Product_C_Polyhedron_Grid](#) (ppl_const_Constraints_Product_C_Polyhedron_Grid_t x, ppl_const_Constraints_Product_C_Polyhedron_Grid_t y)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_is_disjoint_from_Constraints_Product_C_Polyhedron_Grid](#) (ppl_const_Constraints_Product_C_Polyhedron_Grid_t x, ppl_const_Constraints_Product_C_Polyhedron_Grid_t y)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_equals_Constraints_Product_C_Polyhedron_Grid](#) (ppl_const_Constraints_Product_C_Polyhedron_Grid_t x, ppl_const_Constraints_Product_C_Polyhedron_Grid_t y)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_OK](#) (ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph)

- int [ppl_Constraints_Product_C_Polyhedron_Grid_add_constraint](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_const_Constraint_t c)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_add_congruence](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_const_Congruence_t c)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_add_constraints](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_add_congruences](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_refine_with_constraint](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_const_Constraint_t c)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_refine_with_congruence](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_const_Congruence_t c)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_refine_with_constraints](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_refine_with_congruences](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_intersection_assign](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t x, ppl_const_Constraints_Product_C_Polyhedron_Grid_t y)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_upper_bound_assign](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t x, ppl_const_Constraints_Product_C_Polyhedron_Grid_t y)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_difference_assign](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t x, ppl_const_Constraints_Product_C_Polyhedron_Grid_t y)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_concatenate_assign](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t x, ppl_const_Constraints_Product_C_Polyhedron_Grid_t y)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_time_elapse_assign](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t x, ppl_const_Constraints_Product_C_Polyhedron_Grid_t y)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_upper_bound_assign_if_exact](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t x, ppl_const_Constraints_Product_C_Polyhedron_Grid_t y)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_constrains](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_dimension_type var)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_unconstrain_space_dimension](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_dimension_type var)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_unconstrain_space_dimensions](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_dimension_type ds[], size_t n)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_affine_image](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_affine_preimage](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_bounded_affine_image](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_bounded_affine_preimage](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_generalized_affine_image](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_dimension_type var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_generalized_affine_preimage](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_dimension_type var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)

- int [ppl_Constraints_Product_C_Polyhedron_Grid_generalized_affine_image_lhs_rhs](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_generalized_affine_preimage_lhs_rhs](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_add_space_dimensions_and_embed](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, [ppl_dimension_type](#) d)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_add_space_dimensions_and_project](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, [ppl_dimension_type](#) d)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_remove_space_dimensions](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_remove_higher_space_dimensions](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, [ppl_dimension_type](#) d)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_expand_space_dimension](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_fold_space_dimensions](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_map_space_dimensions](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_drop_some_non_integer_points](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, int complexity)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_drop_some_non_integer_points_2](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_external_memory_in_bytes](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t ps, size_t *sz)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_total_memory_in_bytes](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t ps, size_t *sz)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_widening_assign_with_tokens](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t x, ppl_const_Constraints_Product_C_Polyhedron_Grid_t y, unsigned *tp)
- int [ppl_Constraints_Product_C_Polyhedron_Grid_widening_assign](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t x, ppl_const_Constraints_Product_C_Polyhedron_Grid_t y)

10.21.1 Detailed Description

Types and functions for [ppl_Constraints_Product_C_Polyhedron_Grid_tag](#).

10.21.2 Friends And Related Function Documentation

- #### 10.21.2.1 int [ppl_Constraints_Product_C_Polyhedron_Grid_add_congruence](#) (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_const_Congruence_t c) [related]

- 10.21.2.2 `int ppl_Constraints_Product_C_Polyhedron_Grid_add_congruences`
 (`ppl_Constraints_Product_C_Polyhedron_Grid_t ph`, `ppl_const_Congruence_System_t cs`) [**related**]
- 10.21.2.3 `int ppl_Constraints_Product_C_Polyhedron_Grid_add_constraint`
 (`ppl_Constraints_Product_C_Polyhedron_Grid_t ph`, `ppl_const_Constraint_t c`)
 [**related**]
- 10.21.2.4 `int ppl_Constraints_Product_C_Polyhedron_Grid_add_constraints`
 (`ppl_Constraints_Product_C_Polyhedron_Grid_t ph`, `ppl_const_Constraint_System_t cs`) [**related**]
- 10.21.2.5 `int ppl_Constraints_Product_C_Polyhedron_Grid_add_space_dimensions_and_embed`
 (`ppl_Constraints_Product_C_Polyhedron_Grid_t ph`, `ppl_dimension_type d`)
 [**related**]
- 10.21.2.6 `int ppl_Constraints_Product_C_Polyhedron_Grid_add_space_dimensions_and_project`
 (`ppl_Constraints_Product_C_Polyhedron_Grid_t ph`, `ppl_dimension_type d`)
 [**related**]
- 10.21.2.7 `int ppl_Constraints_Product_C_Polyhedron_Grid_affine_dimension`
 (`ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph`, `ppl_dimension_type * m`)
 [**related**]
- 10.21.2.8 `int ppl_Constraints_Product_C_Polyhedron_Grid_affine_image`
 (`ppl_Constraints_Product_C_Polyhedron_Grid_t ph`, `ppl_dimension_type var`,
`ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`) [**related**]
- 10.21.2.9 `int ppl_Constraints_Product_C_Polyhedron_Grid_affine_preimage`
 (`ppl_Constraints_Product_C_Polyhedron_Grid_t ph`, `ppl_dimension_type var`,
`ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`) [**related**]

- 10.21.2.10** `int ppl_Constraints_Product_C_Polyhedron_Grid_bounded_affine_image`
 (`ppl_Constraints_Product_C_Polyhedron_Grid_t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t lb`, `ppl_const_Linear_Expression_t ub`, `ppl_const_Coefficient_t d`) [**related**]
- 10.21.2.11** `int ppl_Constraints_Product_C_Polyhedron_Grid_bounded_affine_preimage`
 (`ppl_Constraints_Product_C_Polyhedron_Grid_t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t lb`, `ppl_const_Linear_Expression_t ub`, `ppl_const_Coefficient_t d`) [**related**]
- 10.21.2.12** `int ppl_Constraints_Product_C_Polyhedron_Grid_bounds_from_above` (`ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph`, `ppl_const_Linear_Expression_t le`) [**related**]
- 10.21.2.13** `int ppl_Constraints_Product_C_Polyhedron_Grid_bounds_from_below` (`ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph`, `ppl_const_Linear_Expression_t le`) [**related**]
- 10.21.2.14** `int ppl_Constraints_Product_C_Polyhedron_Grid_concatenate_assign`
 (`ppl_Constraints_Product_C_Polyhedron_Grid_t x`, `ppl_const_Constraints_Product_C_Polyhedron_Grid_t y`) [**related**]
- 10.21.2.15** `int ppl_Constraints_Product_C_Polyhedron_Grid_constrains`
 (`ppl_Constraints_Product_C_Polyhedron_Grid_t ph`, `ppl_dimension_type var`) [**related**]
- 10.21.2.16** `int ppl_Constraints_Product_C_Polyhedron_Grid_contains_Constraints_Product_C_Polyhedron_Grid` (`ppl_const_Constraints_Product_C_Polyhedron_Grid_t x`, `ppl_const_Constraints_Product_C_Polyhedron_Grid_t y`) [**related**]
- 10.21.2.17** `int ppl_Constraints_Product_C_Polyhedron_Grid_difference_assign`
 (`ppl_Constraints_Product_C_Polyhedron_Grid_t x`, `ppl_const_Constraints_Product_C_Polyhedron_Grid_t y`) [**related**]

- 10.21.2.18 `int ppl_Constraints_Product_C_Polyhedron_Grid_drop_some_non_integer_points`
(`ppl_Constraints_Product_C_Polyhedron_Grid_t ph`, `int complexity`) [`related`]
- 10.21.2.19 `int ppl_Constraints_Product_C_Polyhedron_Grid_drop_some_non_integer_points_2`
(`ppl_Constraints_Product_C_Polyhedron_Grid_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`, `int complexity`) [`related`]
- 10.21.2.20 `int ppl_Constraints_Product_C_Polyhedron_Grid_equals_Constraints_Product_C_Polyhedron_Grid`
(`ppl_const_Constraints_Product_C_Polyhedron_Grid_t x`, `ppl_const_Constraints_Product_C_Polyhedron_Grid_t y`) [`related`]
- 10.21.2.21 `int ppl_Constraints_Product_C_Polyhedron_Grid_expand_space_dimension`
(`ppl_Constraints_Product_C_Polyhedron_Grid_t ph`, `ppl_dimension_type d`, `ppl_dimension_type m`) [`related`]
- 10.21.2.22 `int ppl_Constraints_Product_C_Polyhedron_Grid_external_memory_in_bytes`
(`ppl_const_Constraints_Product_C_Polyhedron_Grid_t ps`, `size_t * sz`) [`related`]
- 10.21.2.23 `int ppl_Constraints_Product_C_Polyhedron_Grid_fold_space_dimensions`
(`ppl_Constraints_Product_C_Polyhedron_Grid_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`, `ppl_dimension_type d`) [`related`]
- 10.21.2.24 `int ppl_Constraints_Product_C_Polyhedron_Grid_generalized_affine_image`
(`ppl_Constraints_Product_C_Polyhedron_Grid_t ph`, `ppl_dimension_type var`, `enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`) [`related`]
- 10.21.2.25 `int ppl_Constraints_Product_C_Polyhedron_Grid_generalized_affine_image_lhs_rhs`
(`ppl_Constraints_Product_C_Polyhedron_Grid_t ph`, `ppl_const_Linear_Expression_t lhs`, `enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`) [`related`]

- 10.21.2.26** `int ppl_Constraints_Product_C_Polyhedron_Grid_generalized_affine_preimage`
 (`ppl_Constraints_Product_C_Polyhedron_Grid_t ph`, `ppl_dimension_type var`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.21.2.27** `int ppl_Constraints_Product_C_Polyhedron_Grid_generalized_affine_-`
`preimage_lhs_rhs` (`ppl_Constraints_Product_C_Polyhedron_Grid_t ph`,
`ppl_const_Linear_Expression_t lhs`, `enum ppl_enum_Constraint_Type relsym`,
`ppl_const_Linear_Expression_t rhs`) [`related`]
- 10.21.2.28** `int ppl_Constraints_Product_C_Polyhedron_Grid_intersection_assign`
 (`ppl_Constraints_Product_C_Polyhedron_Grid_t x`, `ppl_const_Constraints_Product_-`
`C_Polyhedron_Grid_t y`) [`related`]
- 10.21.2.29** `int ppl_Constraints_Product_C_Polyhedron_Grid_is_bounded`
 (`ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph`) [`related`]
- 10.21.2.30** `int ppl_Constraints_Product_C_Polyhedron_Grid_is_discrete`
 (`ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph`) [`related`]
- 10.21.2.31** `int ppl_Constraints_Product_C_Polyhedron_Grid_is_disjoint_from_Constraints_-`
`Product_C_Polyhedron_Grid` (`ppl_const_Constraints_Product_C_Polyhedron_Grid_t`
`x`, `ppl_const_Constraints_Product_C_Polyhedron_Grid_t y`) [`related`]
- 10.21.2.32** `int ppl_Constraints_Product_C_Polyhedron_Grid_is_empty`
 (`ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph`) [`related`]
- 10.21.2.33** `int ppl_Constraints_Product_C_Polyhedron_Grid_is_topologically_closed`
 (`ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph`) [`related`]

- 10.21.2.34 `int ppl_Constraints_Product_C_Polyhedron_Grid_is_universe`
`(ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph)` [**related**]
- 10.21.2.35 `int ppl_Constraints_Product_C_Polyhedron_Grid_map_space_dimensions`
`(ppl_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_dimension_type maps[],`
`size_t n)` [**related**]
- 10.21.2.36 `int ppl_Constraints_Product_C_Polyhedron_Grid_maximize` (`ppl_const_-`
`Constraints_Product_C_Polyhedron_Grid_t ph, ppl_const_Linear_Expression_t le,`
`ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [**related**]
- 10.21.2.37 `int ppl_Constraints_Product_C_Polyhedron_Grid_maximize_with_point` (`ppl_const_-`
`Constraints_Product_C_Polyhedron_Grid_t ph, ppl_const_Linear_Expression_t le,`
`ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t`
`point)` [**related**]
- 10.21.2.38 `int ppl_Constraints_Product_C_Polyhedron_Grid_minimize` (`ppl_const_-`
`Constraints_Product_C_Polyhedron_Grid_t ph, ppl_const_Linear_Expression_t le,`
`ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [**related**]
- 10.21.2.39 `int ppl_Constraints_Product_C_Polyhedron_Grid_minimize_with_point` (`ppl_const_-`
`Constraints_Product_C_Polyhedron_Grid_t ph, ppl_const_Linear_Expression_t le,`
`ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t`
`point)` [**related**]
- 10.21.2.40 `int ppl_Constraints_Product_C_Polyhedron_Grid_OK` (`ppl_const_Constraints_-`
`Product_C_Polyhedron_Grid_t ph)` [**related**]
- 10.21.2.41 `int ppl_Constraints_Product_C_Polyhedron_Grid_refine_with_congruence`
`(ppl_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_const_Congruence_t c)`
[related]

- 10.21.2.42 `int ppl_Constraints_Product_C_Polyhedron_Grid_refine_with_congruences (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_const_Congruence_System_t cs)` `[related]`
- 10.21.2.43 `int ppl_Constraints_Product_C_Polyhedron_Grid_refine_with_constraint (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_const_Constraint_t c)` `[related]`
- 10.21.2.44 `int ppl_Constraints_Product_C_Polyhedron_Grid_refine_with_constraints (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_const_Constraint_System_t cs)` `[related]`
- 10.21.2.45 `int ppl_Constraints_Product_C_Polyhedron_Grid_relation_with_Congruence (ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_const_Congruence_t c)` `[related]`
- 10.21.2.46 `int ppl_Constraints_Product_C_Polyhedron_Grid_relation_with_Constraint (ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_const_Constraint_t c)` `[related]`
- 10.21.2.47 `int ppl_Constraints_Product_C_Polyhedron_Grid_relation_with_Generator (ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_const_Generator_t c)` `[related]`
- 10.21.2.48 `int ppl_Constraints_Product_C_Polyhedron_Grid_remove_higher_space_dimensions (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_dimension_type d)` `[related]`
- 10.21.2.49 `int ppl_Constraints_Product_C_Polyhedron_Grid_remove_space_dimensions (ppl_Constraints_Product_C_Polyhedron_Grid_t ph, ppl_dimension_type ds[], size_t n)` `[related]`

- 10.21.2.50** `int ppl_Constraints_Product_C_Polyhedron_Grid_space_dimension`
 (`ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph`, `ppl_dimension_type * m`)
 [`related`]
- 10.21.2.51** `int ppl_Constraints_Product_C_Polyhedron_Grid_strictly_contains_Constraints_-`
`Product_C_Polyhedron_Grid` (`ppl_const_Constraints_Product_C_Polyhedron_Grid_t`
`x`, `ppl_const_Constraints_Product_C_Polyhedron_Grid_t y`) [`related`]
- 10.21.2.52** `int ppl_Constraints_Product_C_Polyhedron_Grid_time_elapse_assign`
 (`ppl_Constraints_Product_C_Polyhedron_Grid_t x`, `ppl_const_Constraints_Product_-`
`C_Polyhedron_Grid_t y`) [`related`]
- 10.21.2.53** `int ppl_Constraints_Product_C_Polyhedron_Grid_topological_closure_assign`
 (`ppl_Constraints_Product_C_Polyhedron_Grid_t ph`) [`related`]
- 10.21.2.54** `int ppl_Constraints_Product_C_Polyhedron_Grid_total_memory_in_bytes`
 (`ppl_const_Constraints_Product_C_Polyhedron_Grid_t ps`, `size_t * sz`) [`related`]
- 10.21.2.55** `int ppl_Constraints_Product_C_Polyhedron_Grid_unconstrain_space_dimension`
 (`ppl_Constraints_Product_C_Polyhedron_Grid_t ph`, `ppl_dimension_type var`)
 [`related`]
- 10.21.2.56** `int ppl_Constraints_Product_C_Polyhedron_Grid_unconstrain_space_dimensions`
 (`ppl_Constraints_Product_C_Polyhedron_Grid_t ph`, `ppl_dimension_type ds[ ]`, `size_t`
`n`) [`related`]
- 10.21.2.57** `int ppl_Constraints_Product_C_Polyhedron_Grid_upper_-`
`bound_assign` (`ppl_Constraints_Product_C_Polyhedron_Grid_t x`,
`ppl_const_Constraints_Product_C_Polyhedron_Grid_t y`) [`related`]

- 10.21.2.58** `int ppl_Constraints_Product_C_Polyhedron_Grid_upper_bound_-
assign_if_exact (ppl_Constraints_Product_C_Polyhedron_Grid_t x,
ppl_const_Constraints_Product_C_Polyhedron_Grid_t y)` [**related**]
- 10.21.2.59** `int ppl_Constraints_Product_C_Polyhedron_Grid_widening_assign
(ppl_Constraints_Product_C_Polyhedron_Grid_t x, ppl_const_Constraints_Product_-
C_Polyhedron_Grid_t y)` [**related**]
- 10.21.2.60** `int ppl_Constraints_Product_C_Polyhedron_Grid_widening_assign_-
with_tokens (ppl_Constraints_Product_C_Polyhedron_Grid_t x,
ppl_const_Constraints_Product_C_Polyhedron_Grid_t y, unsigned * tp)` [**related**]
- 10.21.2.61** `int ppl_delete_Constraints_Product_C_Polyhedron_Grid
(ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph)` [**related**]
- 10.21.2.62** `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_-
Shape_double (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph,
ppl_const_BD_Shape_double_t ph)` [**related**]
- 10.21.2.63** `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_Shape_-
double_with_complexity (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph,
ppl_const_BD_Shape_double_t ph, int complexity)` [**related**]
- 10.21.2.64** `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_Shape_float
(ppl_Constraints_Product_C_Polyhedron_Grid_t * pph, ppl_const_BD_Shape_float_t
ph)` [**related**]
- 10.21.2.65** `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_Shape_-
float_with_complexity (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph,
ppl_const_BD_Shape_float_t ph, int complexity)` [**related**]

- 10.21.2.66 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_-
Shape_int16_t (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph,
ppl_const_BD_Shape_int16_t_t ph)` [`related`]
- 10.21.2.67 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_Shape_int16_-
t_with_complexity (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph,
ppl_const_BD_Shape_int16_t_t ph, int complexity)` [`related`]
- 10.21.2.68 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_-
Shape_int32_t (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph,
ppl_const_BD_Shape_int32_t_t ph)` [`related`]
- 10.21.2.69 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_Shape_int32_-
t_with_complexity (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph,
ppl_const_BD_Shape_int32_t_t ph, int complexity)` [`related`]
- 10.21.2.70 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_-
Shape_int64_t (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph,
ppl_const_BD_Shape_int64_t_t ph)` [`related`]
- 10.21.2.71 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_Shape_int64_-
t_with_complexity (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph,
ppl_const_BD_Shape_int64_t_t ph, int complexity)` [`related`]
- 10.21.2.72 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_Shape_int8_t (ppl_-
Constraints_Product_C_Polyhedron_Grid_t * pph, ppl_const_BD_Shape_int8_t_t ph)`
[`related`]
- 10.21.2.73 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_Shape_int8_-
t_with_complexity (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph,
ppl_const_BD_Shape_int8_t_t ph, int complexity)` [`related`]

- 10.21.2.74 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_Shape_-long_double (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph, ppl_const_BD_Shape_long_double_t ph)` [**related**]
- 10.21.2.75 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_Shape_long_double_with_complexity (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph, ppl_const_BD_Shape_long_double_t ph, int complexity)` [**related**]
- 10.21.2.76 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_-Shape_mpq_class (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph, ppl_const_BD_Shape_mpq_class_t ph)` [**related**]
- 10.21.2.77 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_Shape_mpq_class_with_complexity (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)` [**related**]
- 10.21.2.78 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_-Shape_mpz_class (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph, ppl_const_BD_Shape_mpz_class_t ph)` [**related**]
- 10.21.2.79 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_BD_Shape_mpz_class_with_complexity (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)` [**related**]
- 10.21.2.80 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_C_Polyhedron (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph, ppl_const_Polyhedron_t ph)` [**related**]
- 10.21.2.81 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_C_Polyhedron_-with_complexity (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph, ppl_const_Polyhedron_t ph, int complexity)` [**related**]

- 10.21.2.82 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Congruence_System (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph, ppl_const_Congruence_System_t cs)` [**related**]
- 10.21.2.83 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Constraint_System (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph, ppl_const_Constraint_System_t cs)` [**related**]
- 10.21.2.84 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Constraints_Product_C_Polyhedron_Grid (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph, ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph)` [**related**]
- 10.21.2.85 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Constraints_Product_C_Polyhedron_Grid_with_complexity (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph, ppl_const_Constraints_Product_C_Polyhedron_Grid_t ph, int complexity)` [**related**]
- 10.21.2.86 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Double_Box (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph, ppl_const_Double_Box_t ph)` [**related**]
- 10.21.2.87 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Double_Box_with_complexity (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph, ppl_const_Double_Box_t ph, int complexity)` [**related**]
- 10.21.2.88 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Float_Box (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph, ppl_const_Float_Box_t ph)` [**related**]
- 10.21.2.89 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Float_Box_with_complexity (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph, ppl_const_Float_Box_t ph, int complexity)` [**related**]

- 10.21.2.90** int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Grid
(ppl_Constraints_Product_C_Polyhedron_Grid_t * *pph*, ppl_const_Grid_t *ph*)
[related]
- 10.21.2.91** int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Grid_with_complexity
(ppl_Constraints_Product_C_Polyhedron_Grid_t * *pph*, ppl_const_Grid_t *ph*, int *complexity*) [related]
- 10.21.2.92** int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Int16_Box
(ppl_Constraints_Product_C_Polyhedron_Grid_t * *pph*, ppl_const_Int16_Box_t *ph*)
[related]
- 10.21.2.93** int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Int16_Box_-
with_complexity (ppl_Constraints_Product_C_Polyhedron_Grid_t * *pph*,
ppl_const_Int16_Box_t *ph*, int *complexity*) [related]
- 10.21.2.94** int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Int32_Box
(ppl_Constraints_Product_C_Polyhedron_Grid_t * *pph*, ppl_const_Int32_Box_t *ph*)
[related]
- 10.21.2.95** int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Int32_Box_-
with_complexity (ppl_Constraints_Product_C_Polyhedron_Grid_t * *pph*,
ppl_const_Int32_Box_t *ph*, int *complexity*) [related]
- 10.21.2.96** int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Int64_Box
(ppl_Constraints_Product_C_Polyhedron_Grid_t * *pph*, ppl_const_Int64_Box_t *ph*)
[related]
- 10.21.2.97** int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Int64_Box_-
with_complexity (ppl_Constraints_Product_C_Polyhedron_Grid_t * *pph*,
ppl_const_Int64_Box_t *ph*, int *complexity*) [related]

- 10.21.2.98 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Int8_Box`
`(ppl_Constraints_Product_C_Polyhedron_Grid_t * pph, ppl_const_Int8_Box_t ph)`
`[related]`
- 10.21.2.99 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Int8_Box_-`
`with_complexity (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph,`
`ppl_const_Int8_Box_t ph, int complexity) [related]`
- 10.21.2.100 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Long_-`
`Double_Box (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph,`
`ppl_const_Long_Double_Box_t ph) [related]`
- 10.21.2.101 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Long_Double_-`
`Box_with_complexity (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph,`
`ppl_const_Long_Double_Box_t ph, int complexity) [related]`
- 10.21.2.102 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_NNC_Polyhedron`
`(ppl_Constraints_Product_C_Polyhedron_Grid_t * pph, ppl_const_Polyhedron_t ph)`
`[related]`
- 10.21.2.103 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_NNC_Polyhedron_-`
`with_complexity (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph,`
`ppl_const_Polyhedron_t ph, int complexity) [related]`
- 10.21.2.104 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_-`
`Shape_double (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph,`
`ppl_const_Octagonal_Shape_double_t ph) [related]`
- 10.21.2.105 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_Shape_-`
`double_with_complexity (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph,`
`ppl_const_Octagonal_Shape_double_t ph, int complexity) [related]`

- 10.21.2.106 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_-Shape_float (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph, ppl_const_Octagonal_Shape_float_t ph)` [`related`]
- 10.21.2.107 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_-Shape_float_with_complexity (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)` [`related`]
- 10.21.2.108 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_-Shape_int16_t (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph, ppl_const_Octagonal_Shape_int16_t_t ph)` [`related`]
- 10.21.2.109 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_-Shape_int16_t_with_complexity (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)` [`related`]
- 10.21.2.110 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_-Shape_int32_t (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph, ppl_const_Octagonal_Shape_int32_t_t ph)` [`related`]
- 10.21.2.111 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_-Shape_int32_t_with_complexity (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)` [`related`]
- 10.21.2.112 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_-Shape_int64_t (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph, ppl_const_Octagonal_Shape_int64_t_t ph)` [`related`]
- 10.21.2.113 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_-Shape_int64_t_with_complexity (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)` [`related`]

- 10.21.2.114 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_Shape_int8_t` (`ppl_Constraints_Product_C_Polyhedron_Grid_t *pph`, `ppl_const_Octagonal_Shape_int8_t_t ph`) [`related`]
- 10.21.2.115 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_Shape_int8_t_with_complexity` (`ppl_Constraints_Product_C_Polyhedron_Grid_t *pph`, `ppl_const_Octagonal_Shape_int8_t_t ph`, `int complexity`) [`related`]
- 10.21.2.116 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_Shape_long_double` (`ppl_Constraints_Product_C_Polyhedron_Grid_t *pph`, `ppl_const_Octagonal_Shape_long_double_t ph`) [`related`]
- 10.21.2.117 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_Shape_long_double_with_complexity` (`ppl_Constraints_Product_C_Polyhedron_Grid_t *pph`, `ppl_const_Octagonal_Shape_long_double_t ph`, `int complexity`) [`related`]
- 10.21.2.118 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_Shape_mpq_class` (`ppl_Constraints_Product_C_Polyhedron_Grid_t *pph`, `ppl_const_Octagonal_Shape_mpq_class_t ph`) [`related`]
- 10.21.2.119 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_Shape_mpq_class_with_complexity` (`ppl_Constraints_Product_C_Polyhedron_Grid_t *pph`, `ppl_const_Octagonal_Shape_mpq_class_t ph`, `int complexity`) [`related`]
- 10.21.2.120 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_Shape_mpz_class` (`ppl_Constraints_Product_C_Polyhedron_Grid_t *pph`, `ppl_const_Octagonal_Shape_mpz_class_t ph`) [`related`]
- 10.21.2.121 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Octagonal_Shape_mpz_class_with_complexity` (`ppl_Constraints_Product_C_Polyhedron_Grid_t *pph`, `ppl_const_Octagonal_Shape_mpz_class_t ph`, `int complexity`) [`related`]

- 10.21.2.122 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Rational_Box`
(`ppl_Constraints_Product_C_Polyhedron_Grid_t *pph`, `ppl_const_Rational_Box_t ph`) [**related**]
- 10.21.2.123 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Rational_Box_-`
`with_complexity` (`ppl_Constraints_Product_C_Polyhedron_Grid_t *pph`,
`ppl_const_Rational_Box_t ph`, `int complexity`) [**related**]
- 10.21.2.124 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_space_dimension`
(`ppl_Constraints_Product_C_Polyhedron_Grid_t *pph`, `ppl_dimension_type d`, `int empty`) [**related**]
- 10.21.2.125 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Uint16_Box`
(`ppl_Constraints_Product_C_Polyhedron_Grid_t *pph`, `ppl_const_Uint16_Box_t ph`)
[**related**]
- 10.21.2.126 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Uint16_Box_-`
`with_complexity` (`ppl_Constraints_Product_C_Polyhedron_Grid_t *pph`,
`ppl_const_Uint16_Box_t ph`, `int complexity`) [**related**]
- 10.21.2.127 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Uint32_Box`
(`ppl_Constraints_Product_C_Polyhedron_Grid_t *pph`, `ppl_const_Uint32_Box_t ph`)
[**related**]
- 10.21.2.128 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Uint32_Box_-`
`with_complexity` (`ppl_Constraints_Product_C_Polyhedron_Grid_t *pph`,
`ppl_const_Uint32_Box_t ph`, `int complexity`) [**related**]
- 10.21.2.129 `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Uint64_Box`
(`ppl_Constraints_Product_C_Polyhedron_Grid_t *pph`, `ppl_const_Uint64_Box_t ph`)
[**related**]

- 10.21.2.130** `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Uint64_Box_-with_complexity (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph, ppl_const_Uint64_Box_t ph, int complexity)` [**related**]
- 10.21.2.131** `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Uint8_Box (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph, ppl_const_Uint8_Box_t ph)` [**related**]
- 10.21.2.132** `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Uint8_Box_-with_complexity (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph, ppl_const_Uint8_Box_t ph, int complexity)` [**related**]
- 10.21.2.133** `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Z_Box (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph, ppl_const_Z_Box_t ph)` [**related**]
- 10.21.2.134** `int ppl_new_Constraints_Product_C_Polyhedron_Grid_from_Z_Box_-with_complexity (ppl_Constraints_Product_C_Polyhedron_Grid_t * pph, ppl_const_Z_Box_t ph, int complexity)` [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.22 ppl_Constraints_Product_Grid_C_Polyhedron_tag Interface Reference

Types and functions for [ppl_Constraints_Product_Grid_C_Polyhedron_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl\_delete\_Constraints\_Product\_Grid\_C\_Polyhedron (ppl_const_Constraints_Product_Grid_C_Polyhedron_t ph)`
- `int ppl\_new\_Constraints\_Product\_Grid\_C\_Polyhedron\_from\_space\_dimension (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl\_dimension\_type d, int empty)`
- `int ppl\_new\_Constraints\_Product\_Grid\_C\_Polyhedron\_from\_Int8\_Box (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Int8_Box_t ph)`

- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Int16_Box](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Int16_Box_t ph)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Int32_Box](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Int32_Box_t ph)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Int64_Box](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Int64_Box_t ph)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Uint8_Box](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Uint8_Box_t ph)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Uint16_Box](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Uint16_Box_t ph)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Uint32_Box](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Uint32_Box_t ph)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Uint64_Box](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Uint64_Box_t ph)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Z_Box](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Z_Box_t ph)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Rational_Box](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Rational_Box_t ph)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_int8_t](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_BD_Shape_int8_t_t ph)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_int16_t](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_BD_Shape_int16_t_t ph)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_int32_t](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_BD_Shape_int32_t_t ph)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_int64_t](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_BD_Shape_int64_t_t ph)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_mpz_class](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_BD_Shape_mpz_class_t ph)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_mpq_class](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_BD_Shape_mpq_class_t ph)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_int8_t](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_int16_t](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_int32_t](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_int64_t](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_mpz_class](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_mpq_class](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_C_Polyhedron](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Polyhedron_t ph)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_NNC_Polyhedron](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Polyhedron_t ph)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Grid](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Grid_t ph)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Float_Box](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Float_Box_t ph)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_float](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_BD_Shape_float_t ph)

- [int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_float](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Octagonal_Shape_float_t ph)
- [int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Double_Box](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Double_Box_t ph)
- [int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_double](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_BD_Shape_double_t ph)
- [int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_double](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Octagonal_Shape_double_t ph)
- [int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Long_Double_Box](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Long_Double_Box_t ph)
- [int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_long_double](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_BD_Shape_long_double_t ph)
- [int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_long_double](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Octagonal_Shape_long_double_t ph)
- [int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Constraints_Product_Grid_C_Polyhedron](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Constraints_Product_Grid_C_Polyhedron_t ph)
- [int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Int8_Box_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Int8_Box_t ph, int complexity)
- [int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Int16_Box_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Int16_Box_t ph, int complexity)
- [int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Int32_Box_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Int32_Box_t ph, int complexity)
- [int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Int64_Box_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Int64_Box_t ph, int complexity)
- [int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Uint8_Box_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Uint8_Box_t ph, int complexity)
- [int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Uint16_Box_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Uint16_Box_t ph, int complexity)
- [int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Uint32_Box_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Uint32_Box_t ph, int complexity)
- [int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Uint64_Box_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Uint64_Box_t ph, int complexity)
- [int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Z_Box_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Z_Box_t ph, int complexity)
- [int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Rational_Box_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Rational_Box_t ph, int complexity)
- [int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_int8_t_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)
- [int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_int16_t_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)
- [int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_int32_t_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)
- [int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_int64_t_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)

- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_mpz_class_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_mpq_class_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_int8_t_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_int16_t_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_int32_t_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_int64_t_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_mpz_class_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_mpq_class_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_C_Polyhedron_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_NNC_Polyhedron_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Grid_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Grid_t ph, int complexity)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Float_Box_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Float_Box_t ph, int complexity)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_float_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_BD_Shape_float_t ph, int complexity)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_float_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Double_Box_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Double_Box_t ph, int complexity)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_double_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_BD_Shape_double_t ph, int complexity)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_double_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Long_Double_Box_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- int [ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_long_double_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity)

- [int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_long_double_-with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)
- [int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Constraints_Product_Grid_C_Polyhedron_with_complexity](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Constraints_Product_Grid_C_Polyhedron_t ph, int complexity)
- [int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Constraint_System](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Constraint_System_t cs)
- [int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Congruence_System](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t *pph, ppl_const_Congruence_System_t cs)
- [int ppl_Constraints_Product_Grid_C_Polyhedron_space_dimension](#) (ppl_const_Constraints_Product_Grid_C_Polyhedron_t ph, ppl_dimension_type *m)
- [int ppl_Constraints_Product_Grid_C_Polyhedron_affine_dimension](#) (ppl_const_Constraints_Product_Grid_C_Polyhedron_t ph, ppl_dimension_type *m)
- [int ppl_Constraints_Product_Grid_C_Polyhedron_relation_with_Constraint](#) (ppl_const_Constraints_Product_Grid_C_Polyhedron_t ph, ppl_const_Constraint_t c)
- [int ppl_Constraints_Product_Grid_C_Polyhedron_relation_with_Generator](#) (ppl_const_Constraints_Product_Grid_C_Polyhedron_t ph, ppl_const_Generator_t c)
- [int ppl_Constraints_Product_Grid_C_Polyhedron_relation_with_Congruence](#) (ppl_const_Constraints_Product_Grid_C_Polyhedron_t ph, ppl_const_Congruence_t c)
- [int ppl_Constraints_Product_Grid_C_Polyhedron_is_empty](#) (ppl_const_Constraints_Product_Grid_C_Polyhedron_t ph)
- [int ppl_Constraints_Product_Grid_C_Polyhedron_is_universe](#) (ppl_const_Constraints_Product_Grid_C_Polyhedron_t ph)
- [int ppl_Constraints_Product_Grid_C_Polyhedron_is_bounded](#) (ppl_const_Constraints_Product_Grid_C_Polyhedron_t ph)
- [int ppl_Constraints_Product_Grid_C_Polyhedron_is_topologically_closed](#) (ppl_const_Constraints_Product_Grid_C_Polyhedron_t ph)
- [int ppl_Constraints_Product_Grid_C_Polyhedron_is_discrete](#) (ppl_const_Constraints_Product_Grid_C_Polyhedron_t ph)
- [int ppl_Constraints_Product_Grid_C_Polyhedron_topological_closure_assign](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t ph)
- [int ppl_Constraints_Product_Grid_C_Polyhedron_bounds_from_above](#) (ppl_const_Constraints_Product_Grid_C_Polyhedron_t ph, ppl_const_Linear_Expression_t le)
- [int ppl_Constraints_Product_Grid_C_Polyhedron_bounds_from_below](#) (ppl_const_Constraints_Product_Grid_C_Polyhedron_t ph, ppl_const_Linear_Expression_t le)
- [int ppl_Constraints_Product_Grid_C_Polyhedron_maximize](#) (ppl_const_Constraints_Product_Grid_C_Polyhedron_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- [int ppl_Constraints_Product_Grid_C_Polyhedron_minimize](#) (ppl_const_Constraints_Product_Grid_C_Polyhedron_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- [int ppl_Constraints_Product_Grid_C_Polyhedron_maximize_with_point](#) (ppl_const_Constraints_Product_Grid_C_Polyhedron_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- [int ppl_Constraints_Product_Grid_C_Polyhedron_minimize_with_point](#) (ppl_const_Constraints_Product_Grid_C_Polyhedron_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- [int ppl_Constraints_Product_Grid_C_Polyhedron_contains_Constraints_Product_Grid_C_Polyhedron](#) (ppl_const_Constraints_Product_Grid_C_Polyhedron_t x, ppl_const_Constraints_Product_Grid_C_Polyhedron_t y)

- int [ppl_Constraints_Product_Grid_C_Polyhedron_strictly_contains_Constraints_Product_Grid_C_Polyhedron](#) (ppl_const_Constraints_Product_Grid_C_Polyhedron_t x, ppl_const_Constraints_Product_Grid_C_Polyhedron_t y)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_is_disjoint_from_Constraints_Product_Grid_C_Polyhedron](#) (ppl_const_Constraints_Product_Grid_C_Polyhedron_t x, ppl_const_Constraints_Product_Grid_C_Polyhedron_t y)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_equals_Constraints_Product_Grid_C_Polyhedron](#) (ppl_const_Constraints_Product_Grid_C_Polyhedron_t x, ppl_const_Constraints_Product_Grid_C_Polyhedron_t y)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_OK](#) (ppl_const_Constraints_Product_Grid_C_Polyhedron_t ph)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_add_constraint](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t ph, ppl_const_Constraint_t c)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_add_congruence](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t ph, ppl_const_Congruence_t c)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_add_constraints](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_add_congruences](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_refine_with_constraint](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t ph, ppl_const_Constraint_t c)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_refine_with_congruence](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t ph, ppl_const_Congruence_t c)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_refine_with_constraints](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_refine_with_congruences](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_intersection_assign](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t x, ppl_const_Constraints_Product_Grid_C_Polyhedron_t y)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_upper_bound_assign](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t x, ppl_const_Constraints_Product_Grid_C_Polyhedron_t y)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_difference_assign](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t x, ppl_const_Constraints_Product_Grid_C_Polyhedron_t y)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_concatenate_assign](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t x, ppl_const_Constraints_Product_Grid_C_Polyhedron_t y)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_time_elapse_assign](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t x, ppl_const_Constraints_Product_Grid_C_Polyhedron_t y)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_upper_bound_assign_if_exact](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t x, ppl_const_Constraints_Product_Grid_C_Polyhedron_t y)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_constrains](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t ph, ppl_dimension_type var)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_unconstrain_space_dimension](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t ph, ppl_dimension_type var)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_unconstrain_space_dimensions](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t ph, ppl_dimension_type ds[], size_t n)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_affine_image](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_affine_preimage](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)

- int [ppl_Constraints_Product_Grid_C_Polyhedron_bounded_affine_image](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_bounded_affine_preimage](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_generalized_affine_image](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_generalized_affine_preimage](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_generalized_affine_image_lhs_rhs](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_generalized_affine_preimage_lhs_rhs](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_add_space_dimensions_and_embed](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t ph, [ppl_dimension_type](#) d)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_add_space_dimensions_and_project](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t ph, [ppl_dimension_type](#) d)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_remove_space_dimensions](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_remove_higher_space_dimensions](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t ph, [ppl_dimension_type](#) d)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_expand_space_dimension](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_fold_space_dimensions](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_map_space_dimensions](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_drop_some_non_integer_points](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t ph, int complexity)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_drop_some_non_integer_points_2](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_external_memory_in_bytes](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t ps, size_t *sz)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_total_memory_in_bytes](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t ps, size_t *sz)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_widening_assign_with_tokens](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t x, ppl_const_Constraints_Product_Grid_C_Polyhedron_t y, unsigned *tp)
- int [ppl_Constraints_Product_Grid_C_Polyhedron_widening_assign](#) (ppl_Constraints_Product_Grid_C_Polyhedron_t x, ppl_const_Constraints_Product_Grid_C_Polyhedron_t y)

10.22.1 Detailed Description

Types and functions for [ppl_Constraints_Product_Grid_C_Polyhedron_tag](#).

10.22.2 Friends And Related Function Documentation

- 10.22.2.1** `int ppl_Constraints_Product_Grid_C_Polyhedron_add_congruence`
 (`ppl_Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_const_Congruence_t c`)
 [`related`]
- 10.22.2.2** `int ppl_Constraints_Product_Grid_C_Polyhedron_add_congruences`
 (`ppl_Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_const_Congruence_System_t cs`) [`related`]
- 10.22.2.3** `int ppl_Constraints_Product_Grid_C_Polyhedron_add_constraint`
 (`ppl_Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_const_Constraint_t c`)
 [`related`]
- 10.22.2.4** `int ppl_Constraints_Product_Grid_C_Polyhedron_add_constraints`
 (`ppl_Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_const_Constraint_System_t cs`) [`related`]
- 10.22.2.5** `int ppl_Constraints_Product_Grid_C_Polyhedron_add_space_dimensions_and_embed`
 (`ppl_Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_dimension_type d`)
 [`related`]
- 10.22.2.6** `int ppl_Constraints_Product_Grid_C_Polyhedron_add_space_dimensions_and_project`
 (`ppl_Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_dimension_type d`)
 [`related`]
- 10.22.2.7** `int ppl_Constraints_Product_Grid_C_Polyhedron_affine_dimension`
 (`ppl_const_Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_dimension_type * m`)
 [`related`]
- 10.22.2.8** `int ppl_Constraints_Product_Grid_C_Polyhedron_affine_image`
 (`ppl_Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_dimension_type var`,
`ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`) [`related`]

- 10.22.2.9 `int ppl_Constraints_Product_Grid_C_Polyhedron_affine_preimage`
 (`ppl_Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_dimension_type var`,
`ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`) [`related`]
- 10.22.2.10 `int ppl_Constraints_Product_Grid_C_Polyhedron_bounded_affine_image`
 (`ppl_Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_dimension_type`
`var`, `ppl_const_Linear_Expression_t lb`, `ppl_const_Linear_Expression_t ub`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.22.2.11 `int ppl_Constraints_Product_Grid_C_Polyhedron_bounded_affine_preimage`
 (`ppl_Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_dimension_type`
`var`, `ppl_const_Linear_Expression_t lb`, `ppl_const_Linear_Expression_t ub`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.22.2.12 `int ppl_Constraints_Product_Grid_C_Polyhedron_bounds_from_above` (`ppl_const -`
`Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_const_Linear_Expression_t le`)
 [`related`]
- 10.22.2.13 `int ppl_Constraints_Product_Grid_C_Polyhedron_bounds_from_below` (`ppl_const -`
`Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_const_Linear_Expression_t le`)
 [`related`]
- 10.22.2.14 `int ppl_Constraints_Product_Grid_C_Polyhedron_concatenate_assign`
 (`ppl_Constraints_Product_Grid_C_Polyhedron_t x`, `ppl_const_Constraints_Product -`
`Grid_C_Polyhedron_t y`) [`related`]
- 10.22.2.15 `int ppl_Constraints_Product_Grid_C_Polyhedron_constrains`
 (`ppl_Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_dimension_type var`)
 [`related`]
- 10.22.2.16 `int ppl_Constraints_Product_Grid_C_Polyhedron_contains_Constraints_Product -`
`Grid_C_Polyhedron` (`ppl_const_Constraints_Product_Grid_C_Polyhedron_t x`,
`ppl_const_Constraints_Product_Grid_C_Polyhedron_t y`) [`related`]

- 10.22.2.17** `int ppl_Constraints_Product_Grid_C_Polyhedron_difference_assign`
 (`ppl_Constraints_Product_Grid_C_Polyhedron_t x`, `ppl_const_Constraints_Product_Grid_C_Polyhedron_t y`) [**related**]
- 10.22.2.18** `int ppl_Constraints_Product_Grid_C_Polyhedron_drop_some_non_integer_points`
 (`ppl_Constraints_Product_Grid_C_Polyhedron_t ph`, `int complexity`) [**related**]
- 10.22.2.19** `int ppl_Constraints_Product_Grid_C_Polyhedron_drop_some_non_integer_points_2`
 (`ppl_Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_dimension_type ds[]`, `size_t n`, `int complexity`) [**related**]
- 10.22.2.20** `int ppl_Constraints_Product_Grid_C_Polyhedron_equals_Constraints_Product_Grid_C_Polyhedron`
 (`ppl_const_Constraints_Product_Grid_C_Polyhedron_t x`, `ppl_const_Constraints_Product_Grid_C_Polyhedron_t y`) [**related**]
- 10.22.2.21** `int ppl_Constraints_Product_Grid_C_Polyhedron_expand_space_dimension`
 (`ppl_Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_dimension_type d`, `ppl_dimension_type m`) [**related**]
- 10.22.2.22** `int ppl_Constraints_Product_Grid_C_Polyhedron_external_memory_in_bytes`
 (`ppl_const_Constraints_Product_Grid_C_Polyhedron_t ps`, `size_t * sz`) [**related**]
- 10.22.2.23** `int ppl_Constraints_Product_Grid_C_Polyhedron_fold_space_dimensions`
 (`ppl_Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_dimension_type ds[]`, `size_t n`, `ppl_dimension_type d`) [**related**]
- 10.22.2.24** `int ppl_Constraints_Product_Grid_C_Polyhedron_generalized_affine_image`
 (`ppl_Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_dimension_type var`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [**related**]

- 10.22.2.25 `int ppl_Constraints_Product_Grid_C_Polyhedron_generalized_affine_image_lhs_rhs`
(`ppl_Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_const_Linear_Expression_t lhs`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
[related]
- 10.22.2.26 `int ppl_Constraints_Product_Grid_C_Polyhedron_generalized_affine_preimage`
(`ppl_Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_dimension_type var`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [related]
- 10.22.2.27 `int ppl_Constraints_Product_Grid_C_Polyhedron_generalized_affine_-`
`preimage_lhs_rhs` (`ppl_Constraints_Product_Grid_C_Polyhedron_t ph`,
`ppl_const_Linear_Expression_t lhs`, `enum ppl_enum_Constraint_Type relsym`,
`ppl_const_Linear_Expression_t rhs`) [related]
- 10.22.2.28 `int ppl_Constraints_Product_Grid_C_Polyhedron_intersection_assign`
(`ppl_Constraints_Product_Grid_C_Polyhedron_t x`, `ppl_const_Constraints_Product_-`
`Grid_C_Polyhedron_t y`) [related]
- 10.22.2.29 `int ppl_Constraints_Product_Grid_C_Polyhedron_is_bounded`
(`ppl_const_Constraints_Product_Grid_C_Polyhedron_t ph`) [related]
- 10.22.2.30 `int ppl_Constraints_Product_Grid_C_Polyhedron_is_discrete`
(`ppl_const_Constraints_Product_Grid_C_Polyhedron_t ph`) [related]
- 10.22.2.31 `int ppl_Constraints_Product_Grid_C_Polyhedron_is_disjoint_from_Constraints_-`
`Product_Grid_C_Polyhedron` (`ppl_const_Constraints_Product_Grid_C_Polyhedron_t`
`x`, `ppl_const_Constraints_Product_Grid_C_Polyhedron_t y`) [related]
- 10.22.2.32 `int ppl_Constraints_Product_Grid_C_Polyhedron_is_empty`
(`ppl_const_Constraints_Product_Grid_C_Polyhedron_t ph`) [related]

- 10.22.2.33 `int ppl_Constraints_Product_Grid_C_Polyhedron_is_topologically_closed`
(`ppl_const_Constraints_Product_Grid_C_Polyhedron_t ph`) [`related`]
- 10.22.2.34 `int ppl_Constraints_Product_Grid_C_Polyhedron_is_universe`
(`ppl_const_Constraints_Product_Grid_C_Polyhedron_t ph`) [`related`]
- 10.22.2.35 `int ppl_Constraints_Product_Grid_C_Polyhedron_map_space_dimensions`
(`ppl_Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_dimension_type maps[]`,
`size_t n`) [`related`]
- 10.22.2.36 `int ppl_Constraints_Product_Grid_C_Polyhedron_maximize` (`ppl_const_-`
`Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_const_Linear_Expression_t le`,
`ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int * poptimum`) [`related`]
- 10.22.2.37 `int ppl_Constraints_Product_Grid_C_Polyhedron_maximize_with_point` (`ppl_const_-`
`Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_const_Linear_Expression_t le`,
`ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int * poptimum`, `ppl_Generator_t`
`point`) [`related`]
- 10.22.2.38 `int ppl_Constraints_Product_Grid_C_Polyhedron_minimize` (`ppl_const_-`
`Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_const_Linear_Expression_t le`,
`ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int * poptimum`) [`related`]
- 10.22.2.39 `int ppl_Constraints_Product_Grid_C_Polyhedron_minimize_with_point` (`ppl_const_-`
`Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_const_Linear_Expression_t le`,
`ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int * poptimum`, `ppl_Generator_t`
`point`) [`related`]
- 10.22.2.40 `int ppl_Constraints_Product_Grid_C_Polyhedron_OK` (`ppl_const_Constraints_-`
`Product_Grid_C_Polyhedron_t ph`) [`related`]

- 10.22.2.41 `int ppl_Constraints_Product_Grid_C_Polyhedron_refine_with_congruence`
(`ppl_Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_const_Congruence_t c`)
[related]

- 10.22.2.42 `int ppl_Constraints_Product_Grid_C_Polyhedron_refine_with_congruences` (`ppl_Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_const_Congruence_System_t cs`)
[related]

- 10.22.2.43 `int ppl_Constraints_Product_Grid_C_Polyhedron_refine_with_constraint`
(`ppl_Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_const_Constraint_t c`)
[related]

- 10.22.2.44 `int ppl_Constraints_Product_Grid_C_Polyhedron_refine_with_constraints`
(`ppl_Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_const_Constraint_System_t cs`) [related]

- 10.22.2.45 `int ppl_Constraints_Product_Grid_C_Polyhedron_relation_with_Congruence`
(`ppl_const_Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_const_Congruence_t c`) [related]

- 10.22.2.46 `int ppl_Constraints_Product_Grid_C_Polyhedron_relation_with_Constraint`
(`ppl_const_Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_const_Constraint_t c`)
[related]

- 10.22.2.47 `int ppl_Constraints_Product_Grid_C_Polyhedron_relation_with_Generator`
(`ppl_const_Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_const_Generator_t c`)
[related]

- 10.22.2.48 `int ppl_Constraints_Product_Grid_C_Polyhedron_remove_higher_space_dimensions`
(`ppl_Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_dimension_type d`)
[related]

- 10.22.2.49** `int ppl_Constraints_Product_Grid_C_Polyhedron_remove_space_dimensions`
 (`ppl_Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`) [`related`]
- 10.22.2.50** `int ppl_Constraints_Product_Grid_C_Polyhedron_space_dimension`
 (`ppl_const_Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_dimension_type * m`)
 [`related`]
- 10.22.2.51** `int ppl_Constraints_Product_Grid_C_Polyhedron_strictly_contains_Constraints_-`
`Product_Grid_C_Polyhedron` (`ppl_const_Constraints_Product_Grid_C_Polyhedron_t x`, `ppl_const_Constraints_Product_Grid_C_Polyhedron_t y`) [`related`]
- 10.22.2.52** `int ppl_Constraints_Product_Grid_C_Polyhedron_time_elapse_assign`
 (`ppl_Constraints_Product_Grid_C_Polyhedron_t x`, `ppl_const_Constraints_Product_-`
`Grid_C_Polyhedron_t y`) [`related`]
- 10.22.2.53** `int ppl_Constraints_Product_Grid_C_Polyhedron_topological_closure_assign`
 (`ppl_Constraints_Product_Grid_C_Polyhedron_t ph`) [`related`]
- 10.22.2.54** `int ppl_Constraints_Product_Grid_C_Polyhedron_total_memory_in_bytes`
 (`ppl_const_Constraints_Product_Grid_C_Polyhedron_t ps`, `size_t * sz`) [`related`]
- 10.22.2.55** `int ppl_Constraints_Product_Grid_C_Polyhedron_unconstrain_space_dimension`
 (`ppl_Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_dimension_type var`)
 [`related`]
- 10.22.2.56** `int ppl_Constraints_Product_Grid_C_Polyhedron_unconstrain_space_dimensions`
 (`ppl_Constraints_Product_Grid_C_Polyhedron_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`) [`related`]

- 10.22.2.57 `int ppl_Constraints_Product_Grid_C_Polyhedron_upper_-
bound_assign (ppl_Constraints_Product_Grid_C_Polyhedron_t x,
ppl_const_Constraints_Product_Grid_C_Polyhedron_t y) [related]`
- 10.22.2.58 `int ppl_Constraints_Product_Grid_C_Polyhedron_upper_bound_-
assign_if_exact (ppl_Constraints_Product_Grid_C_Polyhedron_t x,
ppl_const_Constraints_Product_Grid_C_Polyhedron_t y) [related]`
- 10.22.2.59 `int ppl_Constraints_Product_Grid_C_Polyhedron_widening_assign
(ppl_Constraints_Product_Grid_C_Polyhedron_t x, ppl_const_Constraints_Product_-
Grid_C_Polyhedron_t y) [related]`
- 10.22.2.60 `int ppl_Constraints_Product_Grid_C_Polyhedron_widening_assign_-
with_tokens (ppl_Constraints_Product_Grid_C_Polyhedron_t x,
ppl_const_Constraints_Product_Grid_C_Polyhedron_t y, unsigned * tp) [related]`
- 10.22.2.61 `int ppl_delete_Constraints_Product_Grid_C_Polyhedron
(ppl_const_Constraints_Product_Grid_C_Polyhedron_t ph) [related]`
- 10.22.2.62 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_-
Shape_double (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph,
ppl_const_BD_Shape_double_t ph) [related]`
- 10.22.2.63 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_-
double_with_complexity (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph,
ppl_const_BD_Shape_double_t ph, int complexity) [related]`
- 10.22.2.64 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_float
(ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_BD_Shape_float_t
ph) [related]`

- 10.22.2.65 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_float_with_complexity (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_BD_Shape_float_t ph, int complexity)` [`related`]
- 10.22.2.66 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_int16_t (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_BD_Shape_int16_t_t ph)` [`related`]
- 10.22.2.67 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_int16_t_with_complexity (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)` [`related`]
- 10.22.2.68 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_int32_t (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_BD_Shape_int32_t_t ph)` [`related`]
- 10.22.2.69 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_int32_t_with_complexity (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)` [`related`]
- 10.22.2.70 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_int64_t (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_BD_Shape_int64_t_t ph)` [`related`]
- 10.22.2.71 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_int64_t_with_complexity (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)` [`related`]
- 10.22.2.72 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_int8_t (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_BD_Shape_int8_t_t ph)` [`related`]

- 10.22.2.73 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_int8_t_with_complexity (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_BD_Shape_int8_t ph, int complexity)` [`related`]
- 10.22.2.74 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_long_double (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_BD_Shape_long_double_t ph)` [`related`]
- 10.22.2.75 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_long_double_with_complexity (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_BD_Shape_long_double_t ph, int complexity)` [`related`]
- 10.22.2.76 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_mpq_class (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_BD_Shape_mpq_class_t ph)` [`related`]
- 10.22.2.77 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_mpq_class_with_complexity (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)` [`related`]
- 10.22.2.78 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_mpz_class (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_BD_Shape_mpz_class_t ph)` [`related`]
- 10.22.2.79 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_BD_Shape_mpz_class_with_complexity (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)` [`related`]
- 10.22.2.80 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_C_Polyhedron (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Polyhedron_t ph)` [`related`]

- 10.22.2.81** `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_C_Polyhedron_-with_complexity (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Polyhedron_t ph, int complexity)` [**related**]
- 10.22.2.82** `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Congruence_System (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Congruence_System_t cs)` [**related**]
- 10.22.2.83** `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Constraint_System (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Constraint_System_t cs)` [**related**]
- 10.22.2.84** `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Constraints_Product_Grid_C_Polyhedron (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Constraints_Product_Grid_C_Polyhedron_t ph)` [**related**]
- 10.22.2.85** `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Constraints_Product_Grid_C_Polyhedron_with_complexity (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Constraints_Product_Grid_C_Polyhedron_t ph, int complexity)` [**related**]
- 10.22.2.86** `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Double_Box (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Double_Box_t ph)` [**related**]
- 10.22.2.87** `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Double_Box_with_complexity (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Double_Box_t ph, int complexity)` [**related**]
- 10.22.2.88** `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Float_Box (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Float_Box_t ph)` [**related**]

- 10.22.2.89 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Float_Box -
with_complexity (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph,
ppl_const_Float_Box_t ph, int complexity)` [`related`]
- 10.22.2.90 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Grid
(ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Grid_t ph)`
[`related`]
- 10.22.2.91 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Grid_with_complexity
(ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Grid_t ph, int
complexity)` [`related`]
- 10.22.2.92 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Int16_Box
(ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Int16_Box_t ph)`
[`related`]
- 10.22.2.93 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Int16_Box -
with_complexity (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph,
ppl_const_Int16_Box_t ph, int complexity)` [`related`]
- 10.22.2.94 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Int32_Box
(ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Int32_Box_t ph)`
[`related`]
- 10.22.2.95 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Int32_Box -
with_complexity (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph,
ppl_const_Int32_Box_t ph, int complexity)` [`related`]
- 10.22.2.96 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Int64_Box
(ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Int64_Box_t ph)`
[`related`]

- 10.22.2.97** `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Int64_Box - with_complexity (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Int64_Box_t ph, int complexity)` [**related**]
- 10.22.2.98** `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Int8_Box (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Int8_Box_t ph)` [**related**]
- 10.22.2.99** `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Int8_Box - with_complexity (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Int8_Box_t ph, int complexity)` [**related**]
- 10.22.2.100** `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Long - Double_Box (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Long_Double_Box_t ph)` [**related**]
- 10.22.2.101** `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Long_Double - Box_with_complexity (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Long_Double_Box_t ph, int complexity)` [**related**]
- 10.22.2.102** `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_NNC_Polyhedron (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Polyhedron_t ph)` [**related**]
- 10.22.2.103** `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_NNC_Polyhedron - with_complexity (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Polyhedron_t ph, int complexity)` [**related**]
- 10.22.2.104** `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal - Shape_double (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Octagonal_Shape_double_t ph)` [**related**]

- 10.22.2.105 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_double_with_complexity (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Octagonal_Shape_double_t ph, int complexity) [related]`
- 10.22.2.106 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_float (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Octagonal_Shape_float_t ph) [related]`
- 10.22.2.107 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_float_with_complexity (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Octagonal_Shape_float_t ph, int complexity) [related]`
- 10.22.2.108 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_int16_t (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Octagonal_Shape_int16_t_t ph) [related]`
- 10.22.2.109 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_int16_t_with_complexity (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity) [related]`
- 10.22.2.110 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_int32_t (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Octagonal_Shape_int32_t_t ph) [related]`
- 10.22.2.111 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_int32_t_with_complexity (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity) [related]`
- 10.22.2.112 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_int64_t (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Octagonal_Shape_int64_t_t ph) [related]`

- 10.22.2.113 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_int64_t_with_complexity (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Octagonal_Shape_int64_t t ph, int complexity)` [**related**]
- 10.22.2.114 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_int8_t (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Octagonal_Shape_int8_t t ph)` [**related**]
- 10.22.2.115 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_int8_t_with_complexity (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Octagonal_Shape_int8_t t ph, int complexity)` [**related**]
- 10.22.2.116 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_long_double (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Octagonal_Shape_long_double_t ph)` [**related**]
- 10.22.2.117 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_long_double_with_complexity (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)` [**related**]
- 10.22.2.118 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_mpq_class (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Octagonal_Shape_mpq_class_t ph)` [**related**]
- 10.22.2.119 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_mpq_class_with_complexity (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)` [**related**]
- 10.22.2.120 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_mpz_class (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph)` [**related**]

- 10.22.2.121 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Octagonal_Shape_mpz_class_with_complexity (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)` [**related**]
- 10.22.2.122 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Rational_Box (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Rational_Box_t ph)` [**related**]
- 10.22.2.123 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Rational_Box_with_complexity (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Rational_Box_t ph, int complexity)` [**related**]
- 10.22.2.124 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_space_dimension (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_dimension_type d, int empty)` [**related**]
- 10.22.2.125 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Uint16_Box (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Uint16_Box_t ph)` [**related**]
- 10.22.2.126 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Uint16_Box_with_complexity (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Uint16_Box_t ph, int complexity)` [**related**]
- 10.22.2.127 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Uint32_Box (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Uint32_Box_t ph)` [**related**]
- 10.22.2.128 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Uint32_Box_with_complexity (ppl_Constraints_Product_Grid_C_Polyhedron_t * pph, ppl_const_Uint32_Box_t ph, int complexity)` [**related**]

- 10.22.2.129 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Uint64_Box`
 (`ppl_Constraints_Product_Grid_C_Polyhedron_t *pph`, `ppl_const_Uint64_Box_t ph`)
 [`related`]
- 10.22.2.130 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Uint64_Box -`
`with_complexity` (`ppl_Constraints_Product_Grid_C_Polyhedron_t *pph`,
`ppl_const_Uint64_Box_t ph`, `int complexity`) [`related`]
- 10.22.2.131 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Uint8_Box`
 (`ppl_Constraints_Product_Grid_C_Polyhedron_t *pph`, `ppl_const_Uint8_Box_t ph`)
 [`related`]
- 10.22.2.132 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Uint8_Box -`
`with_complexity` (`ppl_Constraints_Product_Grid_C_Polyhedron_t *pph`,
`ppl_const_Uint8_Box_t ph`, `int complexity`) [`related`]
- 10.22.2.133 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Z_Box`
 (`ppl_Constraints_Product_Grid_C_Polyhedron_t *pph`, `ppl_const_Z_Box_t ph`)
 [`related`]
- 10.22.2.134 `int ppl_new_Constraints_Product_Grid_C_Polyhedron_from_Z_Box -`
`with_complexity` (`ppl_Constraints_Product_Grid_C_Polyhedron_t *pph`,
`ppl_const_Z_Box_t ph`, `int complexity`) [`related`]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.23 ppl_Constraints_Product_Grid_NNC_Polyhedron_tag Interface Reference

Types and functions for [ppl_Constraints_Product_Grid_NNC_Polyhedron_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Constraints_Product_Grid_NNC_Polyhedron` (`ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t` ph)
- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_space_dimension` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t` *pph, `ppl_dimension_type` d, int empty)
- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Int8_Box` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t` *pph, `ppl_const_Int8_Box_t` ph)
- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Int16_Box` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t` *pph, `ppl_const_Int16_Box_t` ph)
- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Int32_Box` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t` *pph, `ppl_const_Int32_Box_t` ph)
- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Int64_Box` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t` *pph, `ppl_const_Int64_Box_t` ph)
- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Uint8_Box` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t` *pph, `ppl_const_Uint8_Box_t` ph)
- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Uint16_Box` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t` *pph, `ppl_const_Uint16_Box_t` ph)
- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Uint32_Box` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t` *pph, `ppl_const_Uint32_Box_t` ph)
- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Uint64_Box` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t` *pph, `ppl_const_Uint64_Box_t` ph)
- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Z_Box` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t` *pph, `ppl_const_Z_Box_t` ph)
- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Rational_Box` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t` *pph, `ppl_const_Rational_Box_t` ph)
- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_Shape_int8_t` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t` *pph, `ppl_const_BD_Shape_int8_t_t` ph)
- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_Shape_int16_t` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t` *pph, `ppl_const_BD_Shape_int16_t_t` ph)
- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_Shape_int32_t` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t` *pph, `ppl_const_BD_Shape_int32_t_t` ph)
- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_Shape_int64_t` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t` *pph, `ppl_const_BD_Shape_int64_t_t` ph)
- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_Shape_mpz_class` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t` *pph, `ppl_const_BD_Shape_mpz_class_t` ph)
- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_Shape_mpq_class` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t` *pph, `ppl_const_BD_Shape_mpq_class_t` ph)
- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Octagonal_Shape_int8_t` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t` *pph, `ppl_const_Octagonal_Shape_int8_t_t` ph)
- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Octagonal_Shape_int16_t` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t` *pph, `ppl_const_Octagonal_Shape_int16_t_t` ph)
- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Octagonal_Shape_int32_t` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t` *pph, `ppl_const_Octagonal_Shape_int32_t_t` ph)
- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Octagonal_Shape_int64_t` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t` *pph, `ppl_const_Octagonal_Shape_int64_t_t` ph)
- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Octagonal_Shape_mpz_class` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t` *pph, `ppl_const_Octagonal_Shape_mpz_class_t` ph)
- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Octagonal_Shape_mpq_class` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t` *pph, `ppl_const_Octagonal_Shape_mpq_class_t` ph)
- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_C_Polyhedron` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t` *pph, `ppl_const_Polyhedron_t` ph)

- int [ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_NNC_Polyhedron](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_Polyhedron_t ph)
- int [ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Grid](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_Grid_t ph)
- int [ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Float_Box](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_Float_Box_t ph)
- int [ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_Shape_float](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_BD_Shape_float_t ph)
- int [ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Octagonal_Shape_float](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_Octagonal_Shape_float_t ph)
- int [ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Double_Box](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_Double_Box_t ph)
- int [ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_Shape_double](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_BD_Shape_double_t ph)
- int [ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Octagonal_Shape_double](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_Octagonal_Shape_double_t ph)
- int [ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Long_Double_Box](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_Long_Double_Box_t ph)
- int [ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_Shape_long_double](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_BD_Shape_long_double_t ph)
- int [ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Octagonal_Shape_long_double](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_Octagonal_Shape_long_double_t ph)
- int [ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Constraints_Product_Grid_NNC_Polyhedron](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph)
- int [ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Int8_Box_with_complexity](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_Int8_Box_t ph, int complexity)
- int [ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Int16_Box_with_complexity](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_Int16_Box_t ph, int complexity)
- int [ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Int32_Box_with_complexity](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_Int32_Box_t ph, int complexity)
- int [ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Int64_Box_with_complexity](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_Int64_Box_t ph, int complexity)
- int [ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Uint8_Box_with_complexity](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_Uint8_Box_t ph, int complexity)
- int [ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Uint16_Box_with_complexity](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_Uint16_Box_t ph, int complexity)
- int [ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Uint32_Box_with_complexity](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_Uint32_Box_t ph, int complexity)
- int [ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Uint64_Box_with_complexity](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_Uint64_Box_t ph, int complexity)
- int [ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Z_Box_with_complexity](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_Z_Box_t ph, int complexity)

- [int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Rational_Box_with_complexity](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_Rational_Box_t ph, int complexity)
- [int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_Shape_int8_t_with_complexity](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)
- [int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_Shape_int16_t_with_complexity](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)
- [int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_Shape_int32_t_with_complexity](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)
- [int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_Shape_int64_t_with_complexity](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)
- [int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_Shape_mpz_class_with_complexity](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)
- [int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_Shape_mpq_class_with_complexity](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)
- [int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Octagonal_Shape_int8_t_with_complexity](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)
- [int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Octagonal_Shape_int16_t_with_complexity](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)
- [int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Octagonal_Shape_int32_t_with_complexity](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)
- [int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Octagonal_Shape_int64_t_with_complexity](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)
- [int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Octagonal_Shape_mpz_class_with_complexity](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)
- [int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Octagonal_Shape_mpq_class_with_complexity](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)
- [int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_C_Polyhedron_with_complexity](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- [int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_NNC_Polyhedron_with_complexity](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- [int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Grid_with_complexity](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_Grid_t ph, int complexity)
- [int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Float_Box_with_complexity](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_Float_Box_t ph, int complexity)
- [int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_Shape_float_with_complexity](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph, ppl_const_BD_Shape_float_t_t ph, int complexity)

- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Octagonal_Shape_float_with_complexity` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph`, `ppl_const_Octagonal_Shape_float_t ph`, `int complexity`)
- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Double_Box_with_complexity` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph`, `ppl_const_Double_Box_t ph`, `int complexity`)
- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_Shape_double_with_complexity` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph`, `ppl_const_BD_Shape_double_t ph`, `int complexity`)
- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Octagonal_Shape_double_with_complexity` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph`, `ppl_const_Octagonal_Shape_double_t ph`, `int complexity`)
- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Long_Double_Box_with_complexity` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph`, `ppl_const_Long_Double_Box_t ph`, `int complexity`)
- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_Shape_long_double_with_complexity` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph`, `ppl_const_BD_Shape_long_double_t ph`, `int complexity`)
- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Octagonal_Shape_long_double_with_complexity` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph`, `ppl_const_Octagonal_Shape_long_double_t ph`, `int complexity`)
- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Constraints_Product_Grid_NNC_Polyhedron_with_complexity` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph`, `ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph`, `int complexity`)
- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Constraint_System` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph`, `ppl_const_Constraint_System_t cs`)
- `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Congruence_System` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph`, `ppl_const_Congruence_System_t cs`)
- `int ppl_Constraints_Product_Grid_NNC_Polyhedron_space_dimension` (`ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph`, `ppl_dimension_type *m`)
- `int ppl_Constraints_Product_Grid_NNC_Polyhedron_affine_dimension` (`ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph`, `ppl_dimension_type *m`)
- `int ppl_Constraints_Product_Grid_NNC_Polyhedron_relation_with_Constraint` (`ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph`, `ppl_const_Constraint_t c`)
- `int ppl_Constraints_Product_Grid_NNC_Polyhedron_relation_with_Generator` (`ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph`, `ppl_const_Generator_t c`)
- `int ppl_Constraints_Product_Grid_NNC_Polyhedron_relation_with_Congruence` (`ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph`, `ppl_const_Congruence_t c`)
- `int ppl_Constraints_Product_Grid_NNC_Polyhedron_is_empty` (`ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph`)
- `int ppl_Constraints_Product_Grid_NNC_Polyhedron_is_universe` (`ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph`)
- `int ppl_Constraints_Product_Grid_NNC_Polyhedron_is_bounded` (`ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph`)
- `int ppl_Constraints_Product_Grid_NNC_Polyhedron_is_topologically_closed` (`ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph`)
- `int ppl_Constraints_Product_Grid_NNC_Polyhedron_is_discrete` (`ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph`)
- `int ppl_Constraints_Product_Grid_NNC_Polyhedron_topological_closure_assign` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph`)
- `int ppl_Constraints_Product_Grid_NNC_Polyhedron_bounds_from_above` (`ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph`, `ppl_const_Linear_Expression_t le`)

- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_bounds_from_below](#) (ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_maximize](#) (ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_minimize](#) (ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_maximize_with_point](#) (ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_minimize_with_point](#) (ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_contains_Constraints_Product_Grid_NNC_Polyhedron](#) (ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t x, ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t y)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_strictly_contains_Constraints_Product_Grid_NNC_Polyhedron](#) (ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t x, ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t y)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_is_disjoint_from_Constraints_Product_Grid_NNC_Polyhedron](#) (ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t x, ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t y)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_equals_Constraints_Product_Grid_NNC_Polyhedron](#) (ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t x, ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t y)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_OK](#) (ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_add_constraint](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_const_Constraint_t c)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_add_congruence](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_const_Congruence_t c)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_add_constraints](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_add_congruences](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_refine_with_constraint](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_const_Constraint_t c)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_refine_with_congruence](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_const_Congruence_t c)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_refine_with_constraints](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_refine_with_congruences](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_intersection_assign](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t x, ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t y)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_upper_bound_assign](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t x, ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t y)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_difference_assign](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t x, ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t y)

- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_concatenate_assign](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t x, ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t y)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_time_elapse_assign](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t x, ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t y)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_upper_bound_assign_if_exact](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t x, ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t y)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_constrains](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_dimension_type var)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_unconstrain_space_dimension](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_dimension_type var)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_unconstrain_space_dimensions](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_dimension_type ds[], size_t n)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_affine_image](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_affine_preimage](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_bounded_affine_image](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_bounded_affine_preimage](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_generalized_affine_image](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_dimension_type var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_generalized_affine_preimage](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_dimension_type var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_generalized_affine_image_lhs_rhs](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_generalized_affine_preimage_lhs_rhs](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_add_space_dimensions_and_embed](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_dimension_type d)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_add_space_dimensions_and_project](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_dimension_type d)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_remove_space_dimensions](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_dimension_type ds[], size_t n)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_remove_higher_space_dimensions](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_dimension_type d)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_expand_space_dimension](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_dimension_type d, ppl_dimension_type m)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_fold_space_dimensions](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)
- int [ppl_Constraints_Product_Grid_NNC_Polyhedron_map_space_dimensions](#) (ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_dimension_type maps[], size_t n)

- `int ppl_Constraints_Product_Grid_NNC_Polyhedron_drop_some_non_integer_points` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph`, `int complexity`)
- `int ppl_Constraints_Product_Grid_NNC_Polyhedron_drop_some_non_integer_points_2` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph`, `ppl_dimension_type ds[]`, `size_t n`, `int complexity`)
- `int ppl_Constraints_Product_Grid_NNC_Polyhedron_external_memory_in_bytes` (`ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ps`, `size_t *sz`)
- `int ppl_Constraints_Product_Grid_NNC_Polyhedron_total_memory_in_bytes` (`ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ps`, `size_t *sz`)
- `int ppl_Constraints_Product_Grid_NNC_Polyhedron_widening_assign_with_tokens` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t x`, `ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t y`, `unsigned *tp`)
- `int ppl_Constraints_Product_Grid_NNC_Polyhedron_widening_assign` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t x`, `ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t y`)

10.23.1 Detailed Description

Types and functions for `ppl_Constraints_Product_Grid_NNC_Polyhedron_tag`.

10.23.2 Friends And Related Function Documentation

- 10.23.2.1** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_add_congruence` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph`, `ppl_const_Congruence_t c`)
[related]
- 10.23.2.2** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_add_congruences` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph`, `ppl_const_Congruence_System_t cs`) [related]
- 10.23.2.3** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_add_constraint` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph`, `ppl_const_Constraint_t c`)
[related]
- 10.23.2.4** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_add_constraints` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph`, `ppl_const_Constraint_System_t cs`)
[related]
- 10.23.2.5** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_add_space_dimensions_and_embed` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph`, `ppl_dimension_type d`)
[related]

- 10.23.2.6** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_add_space_dimensions_and_project (ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_dimension_type d)` `[related]`
- 10.23.2.7** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_affine_dimension (ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_dimension_type *m)` `[related]`
- 10.23.2.8** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_affine_image (ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` `[related]`
- 10.23.2.9** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_affine_preimage (ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` `[related]`
- 10.23.2.10** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_bounded_affine_image (ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` `[related]`
- 10.23.2.11** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_bounded_affine_preimage (ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` `[related]`
- 10.23.2.12** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_bounds_from_above (ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_const_Linear_Expression_t le)` `[related]`
- 10.23.2.13** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_bounds_from_below (ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_const_Linear_Expression_t le)` `[related]`

- 10.23.2.14** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_concatenate_-
assign (ppl_Constraints_Product_Grid_NNC_Polyhedron_t x,
ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t y)` [**related**]
- 10.23.2.15** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_constrains
(ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_dimension_type var)`
[**related**]
- 10.23.2.16** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_contains_Constraints_Product_-
Grid_NNC_Polyhedron (ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t x,
ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t y)` [**related**]
- 10.23.2.17** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_difference_-
assign (ppl_Constraints_Product_Grid_NNC_Polyhedron_t x,
ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t y)` [**related**]
- 10.23.2.18** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_drop_some_non_integer_points
(ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, int complexity)` [**related**]
- 10.23.2.19** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_drop_some_non_integer_-
points_2 (ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_dimension_type
ds[], size_t n, int complexity)` [**related**]
- 10.23.2.20** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_equals_Constraints_Product_-
Grid_NNC_Polyhedron (ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t x,
ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t y)` [**related**]
- 10.23.2.21** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_expand_space_dimension
(ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_dimension_type d,
ppl_dimension_type m)` [**related**]

10.23.2.22 `int ppl_Constraints_Product_Grid_NNC_Polyhedron_external_memory_in_bytes`
 (`ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ps`, `size_t * sz`)
 [related]

10.23.2.23 `int ppl_Constraints_Product_Grid_NNC_Polyhedron_fold_space_dimensions`
 (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph`, `ppl_dimension_type ds[]`,
`size_t n`, `ppl_dimension_type d`) [related]

10.23.2.24 `int ppl_Constraints_Product_Grid_NNC_Polyhedron_generalized_affine_image`
 (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph`, `ppl_dimension_type var`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [related]

10.23.2.25 `int ppl_Constraints_Product_Grid_NNC_Polyhedron_generalized_affine_-`
`image_lhs_rhs` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph`,
`ppl_const_Linear_Expression_t lhs`, `enum ppl_enum_Constraint_Type relsym`,
`ppl_const_Linear_Expression_t rhs`) [related]

10.23.2.26 `int ppl_Constraints_Product_Grid_NNC_Polyhedron_generalized_affine_preimage`
 (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph`, `ppl_dimension_type var`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [related]

10.23.2.27 `int ppl_Constraints_Product_Grid_NNC_Polyhedron_generalized_affine_-`
`preimage_lhs_rhs` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph`,
`ppl_const_Linear_Expression_t lhs`, `enum ppl_enum_Constraint_Type relsym`,
`ppl_const_Linear_Expression_t rhs`) [related]

10.23.2.28 `int ppl_Constraints_Product_Grid_NNC_Polyhedron_intersection_-`
`assign` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t x`,
`ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t y`) [related]

- 10.23.2.29** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_is_bounded`
`(ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph)` `[related]`
- 10.23.2.30** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_is_discrete`
`(ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph)` `[related]`
- 10.23.2.31** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_is_-`
`disjoint_from_Constraints_Product_Grid_NNC_Polyhedron`
`(ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t x,
ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t y) [related]`
- 10.23.2.32** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_is_empty`
`(ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph)` `[related]`
- 10.23.2.33** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_is_topologically_closed`
`(ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph)` `[related]`
- 10.23.2.34** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_is_universe`
`(ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph)` `[related]`
- 10.23.2.35** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_map_space_dimensions`
`(ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_dimension_type maps[],
size_t n) [related]`
- 10.23.2.36** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_maximize` `(ppl_const_-`
`Constraints_Product_Grid_NNC_Polyhedron_t ph, ppl_const_Linear_Expression_t le,
ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum) [related]`

- 10.23.2.37** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_maximize_with_point`
 (`ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph`,
`ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`,
`int * poptimum`, `ppl_Generator_t point`) [**related**]
- 10.23.2.38** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_minimize` (`ppl_const_`-
`Constraints_Product_Grid_NNC_Polyhedron_t ph`, `ppl_const_Linear_Expression_t le`,
`ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int * poptimum`) [**related**]
- 10.23.2.39** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_minimize_with_point`
 (`ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph`,
`ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`,
`int * poptimum`, `ppl_Generator_t point`) [**related**]
- 10.23.2.40** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_OK`
 (`ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph`) [**related**]
- 10.23.2.41** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_refine_with_congruence`
 (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph`, `ppl_const_Congruence_t c`)
 [**related**]
- 10.23.2.42** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_refine_with_congruences` (`ppl_`-
`Constraints_Product_Grid_NNC_Polyhedron_t ph`, `ppl_const_Congruence_System_t`
`cs`) [**related**]
- 10.23.2.43** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_refine_with_constraint`
 (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph`, `ppl_const_Constraint_t c`)
 [**related**]
- 10.23.2.44** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_refine_with_constraints` (`ppl_`-
`Constraints_Product_Grid_NNC_Polyhedron_t ph`, `ppl_const_Constraint_System_t`
`cs`) [**related**]

- 10.23.2.45 `int ppl_Constraints_Product_Grid_NNC_Polyhedron_relation_with_Congruence`
 (`ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph`,
`ppl_const_Congruence_t c`) [`related`]
- 10.23.2.46 `int ppl_Constraints_Product_Grid_NNC_Polyhedron_relation_with_Constraint`
 (`ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph`,
`ppl_const_Constraint_t c`) [`related`]
- 10.23.2.47 `int ppl_Constraints_Product_Grid_NNC_Polyhedron_relation_with_Generator`
 (`ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph`, `ppl_const_Generator_t c`) [`related`]
- 10.23.2.48 `int ppl_Constraints_Product_Grid_NNC_Polyhedron_remove_higher_-`
`space_dimensions` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph`,
`ppl_dimension_type d`) [`related`]
- 10.23.2.49 `int ppl_Constraints_Product_Grid_NNC_Polyhedron_remove_space_dimensions`
 (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph`, `ppl_dimension_type ds[]`,
`size_t n`) [`related`]
- 10.23.2.50 `int ppl_Constraints_Product_Grid_NNC_Polyhedron_space_dimension`
 (`ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph`, `ppl_dimension_type * m`) [`related`]
- 10.23.2.51 `int ppl_Constraints_Product_Grid_NNC_Polyhedron_strictly_contains_Constraints_-`
`Product_Grid_NNC_Polyhedron` (`ppl_const_Constraints_Product_Grid_NNC_-`
`Polyhedron_t x`, `ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t y`)
 [`related`]
- 10.23.2.52 `int ppl_Constraints_Product_Grid_NNC_Polyhedron_time_elapse_-`
`assign` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t x`,
`ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t y`) [`related`]

- 10.23.2.53** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_topological_closure_assign`
(`ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph`) [**related**]
- 10.23.2.54** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_total_memory_in_bytes`
(`ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ps`, `size_t * sz`)
[**related**]
- 10.23.2.55** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_unconstrain_space_dimension`
(`ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph`, `ppl_dimension_type var`)
[**related**]
- 10.23.2.56** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_unconstrain_space_dimensions`
(`ppl_Constraints_Product_Grid_NNC_Polyhedron_t ph`, `ppl_dimension_type ds[]`,
`size_t n`) [**related**]
- 10.23.2.57** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_upper_-`
`bound_assign` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t x`,
`ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t y`) [**related**]
- 10.23.2.58** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_upper_bound_-`
`assign_if_exact` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t x`,
`ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t y`) [**related**]
- 10.23.2.59** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_widening_-`
`assign` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t x`,
`ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t y`) [**related**]
- 10.23.2.60** `int ppl_Constraints_Product_Grid_NNC_Polyhedron_widening_assign_-`
`with_tokens` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t x`,
`ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t y`, `unsigned * tp`)
[**related**]

- 10.23.2.61 `int ppl_delete_Constraints_Product_Grid_NNC_Polyhedron`
(`ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph`) [`related`]

- 10.23.2.62 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_-`
`Shape_double` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph,`
`ppl_const_BD_Shape_double_t ph`) [`related`]

- 10.23.2.63 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_Shape_-`
`double_with_complexity` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph,`
`ppl_const_BD_Shape_double_t ph, int complexity`) [`related`]

- 10.23.2.64 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_-`
`Shape_float` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph,`
`ppl_const_BD_Shape_float_t ph`) [`related`]

- 10.23.2.65 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_Shape_-`
`float_with_complexity` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph,`
`ppl_const_BD_Shape_float_t ph, int complexity`) [`related`]

- 10.23.2.66 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_-`
`Shape_int16_t` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph,`
`ppl_const_BD_Shape_int16_t_t ph`) [`related`]

- 10.23.2.67 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_Shape_int16_-`
`t_with_complexity` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph,`
`ppl_const_BD_Shape_int16_t_t ph, int complexity`) [`related`]

- 10.23.2.68 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_-`
`Shape_int32_t` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph,`
`ppl_const_BD_Shape_int32_t_t ph`) [`related`]

- 10.23.2.69** int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_Shape_int32_-
t_with_complexity (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * *pph*,
ppl_const_BD_Shape_int32_t_t *ph*, int *complexity*) [**related**]
- 10.23.2.70** int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_-
Shape_int64_t (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * *pph*,
ppl_const_BD_Shape_int64_t_t *ph*) [**related**]
- 10.23.2.71** int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_Shape_int64_-
t_with_complexity (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * *pph*,
ppl_const_BD_Shape_int64_t_t *ph*, int *complexity*) [**related**]
- 10.23.2.72** int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_-
Shape_int8_t (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * *pph*,
ppl_const_BD_Shape_int8_t_t *ph*) [**related**]
- 10.23.2.73** int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_Shape_int8_-
t_with_complexity (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * *pph*,
ppl_const_BD_Shape_int8_t_t *ph*, int *complexity*) [**related**]
- 10.23.2.74** int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_Shape_-
long_double (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * *pph*,
ppl_const_BD_Shape_long_double_t_t *ph*) [**related**]
- 10.23.2.75** int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_Shape_long_-
double_with_complexity (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * *pph*,
ppl_const_BD_Shape_long_double_t_t *ph*, int *complexity*) [**related**]
- 10.23.2.76** int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_-
Shape_mpq_class (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * *pph*,
ppl_const_BD_Shape_mpq_class_t_t *ph*) [**related**]

- 10.23.2.77 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_Shape_mpq_class_with_complexity (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)` [**related**]
- 10.23.2.78 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_Shape_mpz_class (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_BD_Shape_mpz_class_t ph)` [**related**]
- 10.23.2.79 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_BD_Shape_mpz_class_with_complexity (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)` [**related**]
- 10.23.2.80 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_C_Polyhedron (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Polyhedron_t ph)` [**related**]
- 10.23.2.81 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_C_Polyhedron_with_complexity (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Polyhedron_t ph, int complexity)` [**related**]
- 10.23.2.82 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Congruence_System (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Congruence_System_t cs)` [**related**]
- 10.23.2.83 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Constraint_System (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Constraint_System_t cs)` [**related**]
- 10.23.2.84 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Constraints_Product_Grid_NNC_Polyhedron (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Constraints_Product_Grid_NNC_Polyhedron_t ph)` [**related**]

- 10.23.2.85 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_-
Constraints_Product_Grid_NNC_Polyhedron_with_complexity
(ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_-
Constraints_Product_Grid_NNC_Polyhedron_t ph, int complexity)`
[related]
- 10.23.2.86 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Double_Box
(ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Double_Box_t
ph)` [related]
- 10.23.2.87 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Double_Box_-
with_complexity (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph,
ppl_const_Double_Box_t ph, int complexity)` [related]
- 10.23.2.88 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Float_Box
(ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Float_Box_t
ph)` [related]
- 10.23.2.89 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Float_Box_-
with_complexity (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph,
ppl_const_Float_Box_t ph, int complexity)` [related]
- 10.23.2.90 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Grid
(ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Grid_t ph)`
[related]
- 10.23.2.91 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Grid_-
with_complexity (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph,
ppl_const_Grid_t ph, int complexity)` [related]
- 10.23.2.92 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Int16_Box
(ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Int16_Box_t
ph)` [related]

- 10.23.2.93 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Int16_Box - with_complexity (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Int16_Box_t ph, int complexity)` [`related`]
- 10.23.2.94 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Int32_Box (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Int32_Box_t ph)` [`related`]
- 10.23.2.95 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Int32_Box - with_complexity (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Int32_Box_t ph, int complexity)` [`related`]
- 10.23.2.96 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Int64_Box (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Int64_Box_t ph)` [`related`]
- 10.23.2.97 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Int64_Box - with_complexity (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Int64_Box_t ph, int complexity)` [`related`]
- 10.23.2.98 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Int8_Box (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Int8_Box_t ph)` [`related`]
- 10.23.2.99 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Int8_Box - with_complexity (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Int8_Box_t ph, int complexity)` [`related`]
- 10.23.2.100 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Long - Double_Box (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Long_Double_Box_t ph)` [`related`]

- 10.23.2.101 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Long_Double_Box_with_complexity (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Long_Double_Box_t ph, int complexity)` [**related**]
- 10.23.2.102 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_NNC_Polyhedron (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Polyhedron_t ph)` [**related**]
- 10.23.2.103 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_NNC_Polyhedron_with_complexity (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Polyhedron_t ph, int complexity)` [**related**]
- 10.23.2.104 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from-Octagonal-Shape_double (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const-Octagonal_Shape_double_t ph)` [**related**]
- 10.23.2.105 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from-Octagonal_Shape_double_with_complexity (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const-Octagonal_Shape_double_t ph, int complexity)` [**related**]
- 10.23.2.106 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from-Octagonal-Shape_float (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const-Octagonal_Shape_float_t ph)` [**related**]
- 10.23.2.107 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from-Octagonal_Shape_float_with_complexity (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const-Octagonal_Shape_float_t ph, int complexity)` [**related**]
- 10.23.2.108 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from-Octagonal_Shape_int16_t (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const-Octagonal_Shape_int16_t_t ph)` [**related**]

- 10.23.2.109 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Octagonal_Shape_int16_t_with_complexity (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Octagonal_Shape_int16_t tph, int complexity)` [`related`]
- 10.23.2.110 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Octagonal_Shape_int32_t (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Octagonal_Shape_int32_t tph)` [`related`]
- 10.23.2.111 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Octagonal_Shape_int32_t_with_complexity (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Octagonal_Shape_int32_t tph, int complexity)` [`related`]
- 10.23.2.112 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Octagonal_Shape_int64_t (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Octagonal_Shape_int64_t tph)` [`related`]
- 10.23.2.113 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Octagonal_Shape_int64_t_with_complexity (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Octagonal_Shape_int64_t tph, int complexity)` [`related`]
- 10.23.2.114 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Octagonal_Shape_int8_t (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Octagonal_Shape_int8_t tph)` [`related`]
- 10.23.2.115 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Octagonal_Shape_int8_t_with_complexity (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Octagonal_Shape_int8_t tph, int complexity)` [`related`]
- 10.23.2.116 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Octagonal_Shape_long_double (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Octagonal_Shape_long_double_t tph)` [`related`]

- 10.23.2.117 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Octagonal_Shape_long_double_with_complexity (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)` [**related**]
- 10.23.2.118 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Octagonal_Shape_mpq_class (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Octagonal_Shape_mpq_class_t ph)` [**related**]
- 10.23.2.119 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Octagonal_Shape_mpq_class_with_complexity (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)` [**related**]
- 10.23.2.120 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Octagonal_Shape_mpz_class (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph)` [**related**]
- 10.23.2.121 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Octagonal_Shape_mpz_class_with_complexity (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)` [**related**]
- 10.23.2.122 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Rational_Box (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Rational_Box_t ph)` [**related**]
- 10.23.2.123 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Rational_Box_with_complexity (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Rational_Box_t ph, int complexity)` [**related**]
- 10.23.2.124 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_space_dimension (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_dimension_type d, int empty)` [**related**]

- 10.23.2.125 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Uint16_Box`
`(ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Uint16_Box_t`
`ph) [related]`
- 10.23.2.126 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Uint16_Box_-`
`with_complexity (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph,`
`ppl_const_Uint16_Box_t ph, int complexity) [related]`
- 10.23.2.127 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Uint32_Box`
`(ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Uint32_Box_t`
`ph) [related]`
- 10.23.2.128 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Uint32_Box_-`
`with_complexity (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph,`
`ppl_const_Uint32_Box_t ph, int complexity) [related]`
- 10.23.2.129 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Uint64_Box`
`(ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Uint64_Box_t`
`ph) [related]`
- 10.23.2.130 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Uint64_Box_-`
`with_complexity (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph,`
`ppl_const_Uint64_Box_t ph, int complexity) [related]`
- 10.23.2.131 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Uint8_Box`
`(ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph, ppl_const_Uint8_Box_t`
`ph) [related]`
- 10.23.2.132 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Uint8_Box_-`
`with_complexity (ppl_Constraints_Product_Grid_NNC_Polyhedron_t * pph,`
`ppl_const_Uint8_Box_t ph, int complexity) [related]`

10.23.2.133 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Z_Box`
 (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph`, `ppl_const_Z_Box_t ph`)
 [**related**]

10.23.2.134 `int ppl_new_Constraints_Product_Grid_NNC_Polyhedron_from_Z_Box_-`
`with_complexity` (`ppl_Constraints_Product_Grid_NNC_Polyhedron_t *pph`,
`ppl_const_Z_Box_t ph`, `int complexity`) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.24 ppl_Constraints_Product_NNC_Polyhedron_Grid_tag Interface Reference

Types and functions for [ppl_Constraints_Product_NNC_Polyhedron_Grid_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Constraints_Product_NNC_Polyhedron_Grid` (`ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph`)
- `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_space_dimension` (`ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph`, `ppl_dimension_type d`, `int empty`)
- `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Int8_Box` (`ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph`, `ppl_const_Int8_Box_t ph`)
- `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Int16_Box` (`ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph`, `ppl_const_Int16_Box_t ph`)
- `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Int32_Box` (`ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph`, `ppl_const_Int32_Box_t ph`)
- `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Int64_Box` (`ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph`, `ppl_const_Int64_Box_t ph`)
- `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Uint8_Box` (`ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph`, `ppl_const_Uint8_Box_t ph`)
- `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Uint16_Box` (`ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph`, `ppl_const_Uint16_Box_t ph`)
- `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Uint32_Box` (`ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph`, `ppl_const_Uint32_Box_t ph`)
- `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Uint64_Box` (`ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph`, `ppl_const_Uint64_Box_t ph`)
- `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Z_Box` (`ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph`, `ppl_const_Z_Box_t ph`)
- `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Rational_Box` (`ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph`, `ppl_const_Rational_Box_t ph`)
- `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_Shape_int8_t` (`ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph`, `ppl_const_BD_Shape_int8_t_t ph`)

- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_Shape_int16_t](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_int16_t_t ph)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_Shape_int32_t](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_int32_t_t ph)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_Shape_int64_t](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_int64_t_t ph)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_Shape_mpz_class](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_mpz_class_t ph)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_Shape_mpq_class](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_mpq_class_t ph)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_int8_t](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_int16_t](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_int32_t](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_int64_t](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_mpz_class](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_mpq_class](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_C_Polyhedron](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Polyhedron_t ph)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_NNC_Polyhedron](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Polyhedron_t ph)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Grid](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Grid_t ph)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Float_Box](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Float_Box_t ph)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_Shape_float](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_float_t ph)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_float](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_float_t ph)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Double_Box](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Double_Box_t ph)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_Shape_double](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_double_t ph)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_double](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_double_t ph)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Long_Double_Box](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Long_Double_Box_t ph)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_Shape_long_double](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_long_double_t ph)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_long_double](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_long_double_t ph)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Constraints_Product_NNC_Polyhedron_Grid](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph)

- int [ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Int8_Box_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Int8_Box_t ph, int complexity)
- int [ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Int16_Box_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Int16_Box_t ph, int complexity)
- int [ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Int32_Box_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Int32_Box_t ph, int complexity)
- int [ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Int64_Box_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Int64_Box_t ph, int complexity)
- int [ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_UInt8_Box_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_UInt8_Box_t ph, int complexity)
- int [ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_UInt16_Box_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_UInt16_Box_t ph, int complexity)
- int [ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_UInt32_Box_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_UInt32_Box_t ph, int complexity)
- int [ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_UInt64_Box_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_UInt64_Box_t ph, int complexity)
- int [ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Z_Box_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Z_Box_t ph, int complexity)
- int [ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Rational_Box_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Rational_Box_t ph, int complexity)
- int [ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_Shape_int8_t_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)
- int [ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_Shape_int16_t_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)
- int [ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_Shape_int32_t_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)
- int [ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_Shape_int64_t_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)
- int [ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_Shape_mpz_class_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_Shape_mpq_class_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_int8_t_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)
- int [ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_int16_t_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)

- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_int32_t_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_int64_t_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_mpz_class_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_mpq_class_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_C_Polyhedron_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_NNC_Polyhedron_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Grid_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Grid_t ph, int complexity)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Float_Box_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Float_Box_t ph, int complexity)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_Shape_float_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_float_t ph, int complexity)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_float_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Double_Box_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Double_Box_t ph, int complexity)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_Shape_double_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_double_t ph, int complexity)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_double_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Long_Double_Box_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_Shape_long_double_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_long_double_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Constraints_Product_NNC_Polyhedron_Grid_with_complexity](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph, int complexity)
- [int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Constraint_System](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Constraint_System_t cs)

- int [ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Congruence_System](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *pph, ppl_const_Congruence_System_t cs)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_space_dimension](#) (ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph, ppl_dimension_type *m)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_affine_dimension](#) (ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph, ppl_dimension_type *m)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_relation_with_Constraint](#) (ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph, ppl_const_Constraint_t c)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_relation_with_Generator](#) (ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph, ppl_const_Generator_t c)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_relation_with_Congruence](#) (ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph, ppl_const_Congruence_t c)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_is_empty](#) (ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_is_universe](#) (ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_is_bounded](#) (ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_is_topologically_closed](#) (ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_is_discrete](#) (ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_topological_closure_assign](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_bounds_from_above](#) (ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_bounds_from_below](#) (ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_maximize](#) (ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_minimize](#) (ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_maximize_with_point](#) (ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_minimize_with_point](#) (ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_contains_Constraints_Product_NNC_Polyhedron_Grid](#) (ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t x, ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t y)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_strictly_contains_Constraints_Product_NNC_Polyhedron_Grid](#) (ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t x, ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t y)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_is_disjoint_from_Constraints_Product_NNC_Polyhedron_Grid](#) (ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t x, ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t y)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_equals_Constraints_Product_NNC_Polyhedron_Grid](#) (ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t x, ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t y)

- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_OK](#) (ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_add_constraint](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, ppl_const_Constraint_t c)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_add_congruence](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, ppl_const_Congruence_t c)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_add_constraints](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_add_congruences](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_refine_with_constraint](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, ppl_const_Constraint_t c)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_refine_with_congruence](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, ppl_const_Congruence_t c)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_refine_with_constraints](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_refine_with_congruences](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_intersection_assign](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t x, ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t y)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_upper_bound_assign](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t x, ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t y)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_difference_assign](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t x, ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t y)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_concatenate_assign](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t x, ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t y)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_time_elapse_assign](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t x, ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t y)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_upper_bound_assign_if_exact](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t x, ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t y)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_constrains](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, [ppl_dimension_type](#) var)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_unconstrain_space_dimension](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, [ppl_dimension_type](#) var)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_unconstrain_space_dimensions](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_affine_image](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_affine_preimage](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_bounded_affine_image](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)

- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_bounded_affine_preimage](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_generalized_affine_image](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_generalized_affine_preimage](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_generalized_affine_image_lhs_rhs](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_generalized_affine_preimage_lhs_rhs](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_add_space_dimensions_and_embed](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, [ppl_dimension_type](#) d)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_add_space_dimensions_and_project](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, [ppl_dimension_type](#) d)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_remove_space_dimensions](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_remove_higher_space_dimensions](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, [ppl_dimension_type](#) d)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_expand_space_dimension](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_fold_space_dimensions](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_map_space_dimensions](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_drop_some_non_integer_points](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, int complexity)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_drop_some_non_integer_points_2](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_external_memory_in_bytes](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ps, size_t *sz)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_total_memory_in_bytes](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ps, size_t *sz)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_widening_assign_with_tokens](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t x, ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t y, unsigned *tp)
- int [ppl_Constraints_Product_NNC_Polyhedron_Grid_widening_assign](#) (ppl_Constraints_Product_NNC_Polyhedron_Grid_t x, ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t y)

10.24.1 Detailed Description

Types and functions for [ppl_Constraints_Product_NNC_Polyhedron_Grid_tag](#).

10.24.2 Friends And Related Function Documentation

- 10.24.2.1** `int ppl_Constraints_Product_NNC_Polyhedron_Grid_add_congruence`
 (`ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph`, `ppl_const_Congruence_t c`)
 [`related`]
- 10.24.2.2** `int ppl_Constraints_Product_NNC_Polyhedron_Grid_add_congruences` (`ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph`, `ppl_const_Congruence_System_t cs`) [`related`]
- 10.24.2.3** `int ppl_Constraints_Product_NNC_Polyhedron_Grid_add_constraint`
 (`ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph`, `ppl_const_Constraint_t c`)
 [`related`]
- 10.24.2.4** `int ppl_Constraints_Product_NNC_Polyhedron_Grid_add_constraints` (`ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph`, `ppl_const_Constraint_System_t cs`)
 [`related`]
- 10.24.2.5** `int ppl_Constraints_Product_NNC_Polyhedron_Grid_add_space_dimensions_and_embed` (`ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph`, `ppl_dimension_type d`)
 [`related`]
- 10.24.2.6** `int ppl_Constraints_Product_NNC_Polyhedron_Grid_add_space_dimensions_and_project` (`ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph`, `ppl_dimension_type d`)
 [`related`]
- 10.24.2.7** `int ppl_Constraints_Product_NNC_Polyhedron_Grid_affine_dimension`
 (`ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph`, `ppl_dimension_type * m`) [`related`]
- 10.24.2.8** `int ppl_Constraints_Product_NNC_Polyhedron_Grid_affine_image`
 (`ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph`, `ppl_dimension_type var`,
`ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`) [`related`]

- 10.24.2.9** `int ppl_Constraints_Product_NNC_Polyhedron_Grid_affine_preimage`
 (`ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph`, `ppl_dimension_type var`,
`ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`) [`related`]
- 10.24.2.10** `int ppl_Constraints_Product_NNC_Polyhedron_Grid_bounded_affine_image`
 (`ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph`, `ppl_dimension_type var`,
`ppl_const_Linear_Expression_t lb`, `ppl_const_Linear_Expression_t ub`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.24.2.11** `int ppl_Constraints_Product_NNC_Polyhedron_Grid_bounded_affine_preimage`
 (`ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph`, `ppl_dimension_type var`,
`ppl_const_Linear_Expression_t lb`, `ppl_const_Linear_Expression_t ub`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.24.2.12** `int ppl_Constraints_Product_NNC_Polyhedron_Grid_bounds_from_above`
 (`ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph`,
`ppl_const_Linear_Expression_t le`) [`related`]
- 10.24.2.13** `int ppl_Constraints_Product_NNC_Polyhedron_Grid_bounds_from_below`
 (`ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph`,
`ppl_const_Linear_Expression_t le`) [`related`]
- 10.24.2.14** `int ppl_Constraints_Product_NNC_Polyhedron_Grid_concatenate_-`
`assign` (`ppl_Constraints_Product_NNC_Polyhedron_Grid_t x`,
`ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t y`) [`related`]
- 10.24.2.15** `int ppl_Constraints_Product_NNC_Polyhedron_Grid_constrains`
 (`ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph`, `ppl_dimension_type var`)
 [`related`]
- 10.24.2.16** `int ppl_Constraints_Product_NNC_Polyhedron_Grid_contains_Constraints_Product_-`
`NNC_Polyhedron_Grid` (`ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t x`,
`ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t y`) [`related`]

- 10.24.2.17** `int ppl_Constraints_Product_NNC_Polyhedron_Grid_difference_-
assign (ppl_Constraints_Product_NNC_Polyhedron_Grid_t x,
ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t y) [related]`
- 10.24.2.18** `int ppl_Constraints_Product_NNC_Polyhedron_Grid_drop_some_non_integer_points
(ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, int complexity) [related]`
- 10.24.2.19** `int ppl_Constraints_Product_NNC_Polyhedron_Grid_drop_some_non_integer_-
points_2 (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, ppl_dimension_type
ds[], size_t n, int complexity) [related]`
- 10.24.2.20** `int ppl_Constraints_Product_NNC_Polyhedron_Grid_equals_Constraints_Product_-
NNC_Polyhedron_Grid (ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t x,
ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t y) [related]`
- 10.24.2.21** `int ppl_Constraints_Product_NNC_Polyhedron_Grid_expand_space_dimension
(ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, ppl_dimension_type d,
ppl_dimension_type m) [related]`
- 10.24.2.22** `int ppl_Constraints_Product_NNC_Polyhedron_Grid_external_memory_in_bytes
(ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ps, size_t * sz)
[related]`
- 10.24.2.23** `int ppl_Constraints_Product_NNC_Polyhedron_Grid_fold_space_dimensions
(ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, ppl_dimension_type ds[],
size_t n, ppl_dimension_type d) [related]`
- 10.24.2.24** `int ppl_Constraints_Product_NNC_Polyhedron_Grid_generalized_affine_image
(ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, ppl_dimension_type var,
enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le,
ppl_const_Coefficient_t d) [related]`

- 10.24.2.25 `int ppl_Constraints_Product_NNC_Polyhedron_Grid_generalized_affine_image_lhs_rhs (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t rhs)` [**related**]
- 10.24.2.26 `int ppl_Constraints_Product_NNC_Polyhedron_Grid_generalized_affine_preimage (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.24.2.27 `int ppl_Constraints_Product_NNC_Polyhedron_Grid_generalized_affine_preimage_lhs_rhs (ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t rhs)` [**related**]
- 10.24.2.28 `int ppl_Constraints_Product_NNC_Polyhedron_Grid_intersection_assign (ppl_Constraints_Product_NNC_Polyhedron_Grid_t x, ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t y)` [**related**]
- 10.24.2.29 `int ppl_Constraints_Product_NNC_Polyhedron_Grid_is_bounded (ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph)` [**related**]
- 10.24.2.30 `int ppl_Constraints_Product_NNC_Polyhedron_Grid_is_discrete (ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph)` [**related**]
- 10.24.2.31 `int ppl_Constraints_Product_NNC_Polyhedron_Grid_is_disjoint_from_Constraints_Product_NNC_Polyhedron_Grid (ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t x, ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t y)` [**related**]
- 10.24.2.32 `int ppl_Constraints_Product_NNC_Polyhedron_Grid_is_empty (ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph)` [**related**]

- 10.24.2.33 `int ppl_Constraints_Product_NNC_Polyhedron_Grid_is_topologically_closed`
`(ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph) [related]`
- 10.24.2.34 `int ppl_Constraints_Product_NNC_Polyhedron_Grid_is_universe`
`(ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph) [related]`
- 10.24.2.35 `int ppl_Constraints_Product_NNC_Polyhedron_Grid_map_space_dimensions`
`(ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph, ppl_dimension_type maps[],`
`size_t n) [related]`
- 10.24.2.36 `int ppl_Constraints_Product_NNC_Polyhedron_Grid_maximize` (`ppl_const -`
`Constraints_Product_NNC_Polyhedron_Grid_t ph, ppl_const_Linear_Expression_t le,`
`ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum) [related]`
- 10.24.2.37 `int ppl_Constraints_Product_NNC_Polyhedron_Grid_maximize_with_point`
`(ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph,`
`ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d,`
`int * poptimum, ppl_Generator_t point) [related]`
- 10.24.2.38 `int ppl_Constraints_Product_NNC_Polyhedron_Grid_minimize` (`ppl_const -`
`Constraints_Product_NNC_Polyhedron_Grid_t ph, ppl_const_Linear_Expression_t le,`
`ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum) [related]`
- 10.24.2.39 `int ppl_Constraints_Product_NNC_Polyhedron_Grid_minimize_with_point`
`(ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph,`
`ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d,`
`int * poptimum, ppl_Generator_t point) [related]`
- 10.24.2.40 `int ppl_Constraints_Product_NNC_Polyhedron_Grid_OK`
`(ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph) [related]`

- 10.24.2.41 `int ppl_Constraints_Product_NNC_Polyhedron_Grid_refine_with_congruence`
(`ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph`, `ppl_const_Congruence_t c`)
[related]
- 10.24.2.42 `int ppl_Constraints_Product_NNC_Polyhedron_Grid_refine_with_congruences` (`ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph`, `ppl_const_Congruence_System_t cs`) [related]
- 10.24.2.43 `int ppl_Constraints_Product_NNC_Polyhedron_Grid_refine_with_constraint`
(`ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph`, `ppl_const_Constraint_t c`)
[related]
- 10.24.2.44 `int ppl_Constraints_Product_NNC_Polyhedron_Grid_refine_with_constraints` (`ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph`, `ppl_const_Constraint_System_t cs`) [related]
- 10.24.2.45 `int ppl_Constraints_Product_NNC_Polyhedron_Grid_relation_with_Congruence`
(`ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph`,
`ppl_const_Congruence_t c`) [related]
- 10.24.2.46 `int ppl_Constraints_Product_NNC_Polyhedron_Grid_relation_with_Constraint`
(`ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph`,
`ppl_const_Constraint_t c`) [related]
- 10.24.2.47 `int ppl_Constraints_Product_NNC_Polyhedron_Grid_relation_with_Generator`
(`ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph`, `ppl_const_Generator_t c`) [related]
- 10.24.2.48 `int ppl_Constraints_Product_NNC_Polyhedron_Grid_remove_higher_-`
`space_dimensions` (`ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph`,
`ppl_dimension_type d`) [related]

- 10.24.2.49** `int ppl_Constraints_Product_NNC_Polyhedron_Grid_remove_space_dimensions`
(`ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph`, `ppl_dimension_type ds[]`,
`size_t n`) [**related**]
- 10.24.2.50** `int ppl_Constraints_Product_NNC_Polyhedron_Grid_space_dimension`
(`ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph`, `ppl_dimension_type * m`) [**related**]
- 10.24.2.51** `int ppl_Constraints_Product_NNC_Polyhedron_Grid_strictly_contains_Constraints_-`
`Product_NNC_Polyhedron_Grid` (`ppl_const_Constraints_Product_NNC_-`
`Polyhedron_Grid_t x`, `ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t y`)
[**related**]
- 10.24.2.52** `int ppl_Constraints_Product_NNC_Polyhedron_Grid_time_elapse_-`
`assign` (`ppl_Constraints_Product_NNC_Polyhedron_Grid_t x`,
`ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t y`) [**related**]
- 10.24.2.53** `int ppl_Constraints_Product_NNC_Polyhedron_Grid_topological_closure_assign`
(`ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph`) [**related**]
- 10.24.2.54** `int ppl_Constraints_Product_NNC_Polyhedron_Grid_total_memory_in_bytes`
(`ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ps`, `size_t * sz`)
[**related**]
- 10.24.2.55** `int ppl_Constraints_Product_NNC_Polyhedron_Grid_unconstrain_space_dimension`
(`ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph`, `ppl_dimension_type var`)
[**related**]
- 10.24.2.56** `int ppl_Constraints_Product_NNC_Polyhedron_Grid_unconstrain_space_dimensions`
(`ppl_Constraints_Product_NNC_Polyhedron_Grid_t ph`, `ppl_dimension_type ds[]`,
`size_t n`) [**related**]

- 10.24.2.57** int ppl_Constraints_Product_NNC_Polyhedron_Grid_upper_bound_assign (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *x*, ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t *y*) [**related**]
- 10.24.2.58** int ppl_Constraints_Product_NNC_Polyhedron_Grid_upper_bound_assign_if_exact (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *x*, ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t *y*) [**related**]
- 10.24.2.59** int ppl_Constraints_Product_NNC_Polyhedron_Grid_widening_assign (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *x*, ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t *y*) [**related**]
- 10.24.2.60** int ppl_Constraints_Product_NNC_Polyhedron_Grid_widening_assign_with_tokens (ppl_Constraints_Product_NNC_Polyhedron_Grid_t *x*, ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t *y*, unsigned * *tp*) [**related**]
- 10.24.2.61** int ppl_delete_Constraints_Product_NNC_Polyhedron_Grid (ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t *ph*) [**related**]
- 10.24.2.62** int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_Shape_double (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * *pph*, ppl_const_BD_Shape_double_t *ph*) [**related**]
- 10.24.2.63** int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_Shape_double_with_complexity (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * *pph*, ppl_const_BD_Shape_double_t *ph*, int *complexity*) [**related**]
- 10.24.2.64** int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_Shape_float (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * *pph*, ppl_const_BD_Shape_float_t *ph*) [**related**]

- 10.24.2.65 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_Shape_-float_with_complexity (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_BD_Shape_float_t ph, int complexity)` [`related`]
- 10.24.2.66 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_-Shape_int16_t (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_BD_Shape_int16_t ph)` [`related`]
- 10.24.2.67 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_Shape_int16_-t_with_complexity (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_BD_Shape_int16_t ph, int complexity)` [`related`]
- 10.24.2.68 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_-Shape_int32_t (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_BD_Shape_int32_t ph)` [`related`]
- 10.24.2.69 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_Shape_int32_-t_with_complexity (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_BD_Shape_int32_t ph, int complexity)` [`related`]
- 10.24.2.70 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_-Shape_int64_t (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_BD_Shape_int64_t ph)` [`related`]
- 10.24.2.71 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_Shape_int64_-t_with_complexity (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_BD_Shape_int64_t ph, int complexity)` [`related`]
- 10.24.2.72 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_-Shape_int8_t (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_BD_Shape_int8_t ph)` [`related`]

- 10.24.2.73** `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_Shape_int8_t_with_complexity (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_BD_Shape_int8_t ph, int complexity)` [**related**]
- 10.24.2.74** `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_Shape_long_double (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_BD_Shape_long_double_t ph)` [**related**]
- 10.24.2.75** `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_Shape_long_double_with_complexity (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_BD_Shape_long_double_t ph, int complexity)` [**related**]
- 10.24.2.76** `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_Shape_mpq_class (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_BD_Shape_mpq_class_t ph)` [**related**]
- 10.24.2.77** `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_Shape_mpq_class_with_complexity (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)` [**related**]
- 10.24.2.78** `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_Shape_mpz_class (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_BD_Shape_mpz_class_t ph)` [**related**]
- 10.24.2.79** `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_BD_Shape_mpz_class_with_complexity (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)` [**related**]
- 10.24.2.80** `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_C_Polyhedron (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Polyhedron_t ph)` [**related**]

- 10.24.2.81 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_C_Polyhedron_-with_complexity (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Polyhedron_t ph, int complexity)` [`related`]
- 10.24.2.82 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Congruence_System (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Congruence_System_t cs)` [`related`]
- 10.24.2.83 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Constraint_System (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Constraint_System_t cs)` [`related`]
- 10.24.2.84 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Constraints_Product_NNC_Polyhedron_Grid (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph)` [`related`]
- 10.24.2.85 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Constraints_Product_NNC_Polyhedron_Grid_with_complexity (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Constraints_Product_NNC_Polyhedron_Grid_t ph, int complexity)` [`related`]
- 10.24.2.86 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Double_Box (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Double_Box_t ph)` [`related`]
- 10.24.2.87 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Double_Box_with_complexity (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Double_Box_t ph, int complexity)` [`related`]
- 10.24.2.88 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Float_Box (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Float_Box_t ph)` [`related`]

- 10.24.2.89 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Float_Box_-with_complexity (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Float_Box_t ph, int complexity)` [`related`]
- 10.24.2.90 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Grid (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Grid_t ph)` [`related`]
- 10.24.2.91 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Grid_-with_complexity (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Grid_t ph, int complexity)` [`related`]
- 10.24.2.92 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Int16_Box (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Int16_Box_t ph)` [`related`]
- 10.24.2.93 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Int16_Box_-with_complexity (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Int16_Box_t ph, int complexity)` [`related`]
- 10.24.2.94 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Int32_Box (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Int32_Box_t ph)` [`related`]
- 10.24.2.95 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Int32_Box_-with_complexity (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Int32_Box_t ph, int complexity)` [`related`]
- 10.24.2.96 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Int64_Box (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Int64_Box_t ph)` [`related`]

- 10.24.2.97 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Int64_Box - with_complexity (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Int64_Box_t ph, int complexity)` [`related`]
- 10.24.2.98 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Int8_Box (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Int8_Box_t ph)` [`related`]
- 10.24.2.99 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Int8_Box - with_complexity (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Int8_Box_t ph, int complexity)` [`related`]
- 10.24.2.100 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Long - Double_Box (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Long_Double_Box_t ph)` [`related`]
- 10.24.2.101 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Long_Double - Box_with_complexity (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Long_Double_Box_t ph, int complexity)` [`related`]
- 10.24.2.102 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_NNC_Polyhedron (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Polyhedron_t ph)` [`related`]
- 10.24.2.103 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_NNC_Polyhedron - with_complexity (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Polyhedron_t ph, int complexity)` [`related`]
- 10.24.2.104 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal - Shape_double (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Octagonal_Shape_double_t ph)` [`related`]

- 10.24.2.105 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_double_with_complexity (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)` [**related**]
- 10.24.2.106 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_float (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Octagonal_Shape_float_t ph)` [**related**]
- 10.24.2.107 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_float_with_complexity (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)` [**related**]
- 10.24.2.108 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_int16_t (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Octagonal_Shape_int16_t_t ph)` [**related**]
- 10.24.2.109 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_int16_t_with_complexity (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)` [**related**]
- 10.24.2.110 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_int32_t (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Octagonal_Shape_int32_t_t ph)` [**related**]
- 10.24.2.111 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_int32_t_with_complexity (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)` [**related**]
- 10.24.2.112 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_int64_t (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Octagonal_Shape_int64_t_t ph)` [**related**]

- 10.24.2.113 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_int64_t_with_complexity (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Octagonal_Shape_int64_t ph, int complexity)` [**related**]
- 10.24.2.114 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_int8_t (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Octagonal_Shape_int8_t ph)` [**related**]
- 10.24.2.115 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_int8_t_with_complexity (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Octagonal_Shape_int8_t ph, int complexity)` [**related**]
- 10.24.2.116 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_long_double (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Octagonal_Shape_long_double_t ph)` [**related**]
- 10.24.2.117 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_long_double_with_complexity (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)` [**related**]
- 10.24.2.118 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_mpq_class (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Octagonal_Shape_mpq_class_t ph)` [**related**]
- 10.24.2.119 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_mpq_class_with_complexity (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)` [**related**]
- 10.24.2.120 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_mpz_class (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph)` [**related**]

- 10.24.2.121 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Octagonal_Shape_mpz_class_with_complexity (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)` [**related**]
- 10.24.2.122 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Rational_Box (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Rational_Box_t ph)` [**related**]
- 10.24.2.123 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Rational_Box_with_complexity (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Rational_Box_t ph, int complexity)` [**related**]
- 10.24.2.124 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_space_dimension (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_dimension_type d, int empty)` [**related**]
- 10.24.2.125 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Uint16_Box (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Uint16_Box_t ph)` [**related**]
- 10.24.2.126 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Uint16_Box_with_complexity (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Uint16_Box_t ph, int complexity)` [**related**]
- 10.24.2.127 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Uint32_Box (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Uint32_Box_t ph)` [**related**]
- 10.24.2.128 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Uint32_Box_with_complexity (ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph, ppl_const_Uint32_Box_t ph, int complexity)` [**related**]

- 10.24.2.129 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Uint64_Box`
(`ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph`, `ppl_const_Uint64_Box_t ph`) [`related`]

- 10.24.2.130 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Uint64_Box_-`
`with_complexity` (`ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph`,
`ppl_const_Uint64_Box_t ph`, `int complexity`) [`related`]

- 10.24.2.131 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Uint8_Box`
(`ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph`, `ppl_const_Uint8_Box_t ph`) [`related`]

- 10.24.2.132 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Uint8_Box_-`
`with_complexity` (`ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph`,
`ppl_const_Uint8_Box_t ph`, `int complexity`) [`related`]

- 10.24.2.133 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Z_Box`
(`ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph`, `ppl_const_Z_Box_t ph`) [`related`]

- 10.24.2.134 `int ppl_new_Constraints_Product_NNC_Polyhedron_Grid_from_Z_Box_-`
`with_complexity` (`ppl_Constraints_Product_NNC_Polyhedron_Grid_t * pph`,
`ppl_const_Z_Box_t ph`, `int complexity`) [`related`]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.25 `ppl_Double_Box_tag` Interface Reference

Types and functions for [ppl_Double_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- int [ppl_delete_Double_Box](#) (ppl_const_Double_Box_t ph)
- int [ppl_new_Double_Box_from_space_dimension](#) (ppl_Double_Box_t *pph, [ppl_dimension_type](#) d, int empty)
- int [ppl_new_Double_Box_from_Int8_Box](#) (ppl_Double_Box_t *pph, ppl_const_Int8_Box_t ph)
- int [ppl_new_Double_Box_from_Int16_Box](#) (ppl_Double_Box_t *pph, ppl_const_Int16_Box_t ph)
- int [ppl_new_Double_Box_from_Int32_Box](#) (ppl_Double_Box_t *pph, ppl_const_Int32_Box_t ph)
- int [ppl_new_Double_Box_from_Int64_Box](#) (ppl_Double_Box_t *pph, ppl_const_Int64_Box_t ph)
- int [ppl_new_Double_Box_from_Uint8_Box](#) (ppl_Double_Box_t *pph, ppl_const_Uint8_Box_t ph)
- int [ppl_new_Double_Box_from_Uint16_Box](#) (ppl_Double_Box_t *pph, ppl_const_Uint16_Box_t ph)
- int [ppl_new_Double_Box_from_Uint32_Box](#) (ppl_Double_Box_t *pph, ppl_const_Uint32_Box_t ph)
- int [ppl_new_Double_Box_from_Uint64_Box](#) (ppl_Double_Box_t *pph, ppl_const_Uint64_Box_t ph)
- int [ppl_new_Double_Box_from_Z_Box](#) (ppl_Double_Box_t *pph, ppl_const_Z_Box_t ph)
- int [ppl_new_Double_Box_from_Rational_Box](#) (ppl_Double_Box_t *pph, ppl_const_Rational_Box_t ph)
- int [ppl_new_Double_Box_from_BD_Shape_int8_t](#) (ppl_Double_Box_t *pph, ppl_const_BD_Shape_int8_t_t ph)
- int [ppl_new_Double_Box_from_BD_Shape_int16_t](#) (ppl_Double_Box_t *pph, ppl_const_BD_Shape_int16_t_t ph)
- int [ppl_new_Double_Box_from_BD_Shape_int32_t](#) (ppl_Double_Box_t *pph, ppl_const_BD_Shape_int32_t_t ph)
- int [ppl_new_Double_Box_from_BD_Shape_int64_t](#) (ppl_Double_Box_t *pph, ppl_const_BD_Shape_int64_t_t ph)
- int [ppl_new_Double_Box_from_BD_Shape_mpz_class](#) (ppl_Double_Box_t *pph, ppl_const_BD_Shape_mpz_class_t ph)
- int [ppl_new_Double_Box_from_BD_Shape_mpq_class](#) (ppl_Double_Box_t *pph, ppl_const_BD_Shape_mpq_class_t ph)
- int [ppl_new_Double_Box_from_Octagonal_Shape_int8_t](#) (ppl_Double_Box_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph)
- int [ppl_new_Double_Box_from_Octagonal_Shape_int16_t](#) (ppl_Double_Box_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph)
- int [ppl_new_Double_Box_from_Octagonal_Shape_int32_t](#) (ppl_Double_Box_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph)
- int [ppl_new_Double_Box_from_Octagonal_Shape_int64_t](#) (ppl_Double_Box_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph)
- int [ppl_new_Double_Box_from_Octagonal_Shape_mpz_class](#) (ppl_Double_Box_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph)
- int [ppl_new_Double_Box_from_Octagonal_Shape_mpq_class](#) (ppl_Double_Box_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph)
- int [ppl_new_Double_Box_from_C_Polyhedron](#) (ppl_Double_Box_t *pph, ppl_const_Polyhedron_t ph)
- int [ppl_new_Double_Box_from_NNC_Polyhedron](#) (ppl_Double_Box_t *pph, ppl_const_Polyhedron_t ph)
- int [ppl_new_Double_Box_from_Grid](#) (ppl_Double_Box_t *pph, ppl_const_Grid_t ph)
- int [ppl_new_Double_Box_from_Float_Box](#) (ppl_Double_Box_t *pph, ppl_const_Float_Box_t ph)
- int [ppl_new_Double_Box_from_BD_Shape_float](#) (ppl_Double_Box_t *pph, ppl_const_BD_Shape_float_t ph)
- int [ppl_new_Double_Box_from_Octagonal_Shape_float](#) (ppl_Double_Box_t *pph, ppl_const_Octagonal_Shape_float_t ph)

- [int ppl_new_Double_Box_from_Double_Box](#) (ppl_Double_Box_t *pph, ppl_const_Double_Box_t ph)
- [int ppl_new_Double_Box_from_BD_Shape_double](#) (ppl_Double_Box_t *pph, ppl_const_BD_Shape_double_t ph)
- [int ppl_new_Double_Box_from_Octagonal_Shape_double](#) (ppl_Double_Box_t *pph, ppl_const_Octagonal_Shape_double_t ph)
- [int ppl_new_Double_Box_from_Long_Double_Box](#) (ppl_Double_Box_t *pph, ppl_const_Long_Double_Box_t ph)
- [int ppl_new_Double_Box_from_BD_Shape_long_double](#) (ppl_Double_Box_t *pph, ppl_const_BD_Shape_long_double_t ph)
- [int ppl_new_Double_Box_from_Octagonal_Shape_long_double](#) (ppl_Double_Box_t *pph, ppl_const_Octagonal_Shape_long_double_t ph)
- [int ppl_new_Double_Box_from_Int8_Box_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_Int8_Box_t ph, int complexity)
- [int ppl_new_Double_Box_from_Int16_Box_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_Int16_Box_t ph, int complexity)
- [int ppl_new_Double_Box_from_Int32_Box_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_Int32_Box_t ph, int complexity)
- [int ppl_new_Double_Box_from_Int64_Box_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_Int64_Box_t ph, int complexity)
- [int ppl_new_Double_Box_from_Uint8_Box_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_Uint8_Box_t ph, int complexity)
- [int ppl_new_Double_Box_from_Uint16_Box_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_Uint16_Box_t ph, int complexity)
- [int ppl_new_Double_Box_from_Uint32_Box_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_Uint32_Box_t ph, int complexity)
- [int ppl_new_Double_Box_from_Uint64_Box_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_Uint64_Box_t ph, int complexity)
- [int ppl_new_Double_Box_from_Z_Box_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_Z_Box_t ph, int complexity)
- [int ppl_new_Double_Box_from_Rational_Box_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_Rational_Box_t ph, int complexity)
- [int ppl_new_Double_Box_from_BD_Shape_int8_t_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)
- [int ppl_new_Double_Box_from_BD_Shape_int16_t_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)
- [int ppl_new_Double_Box_from_BD_Shape_int32_t_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)
- [int ppl_new_Double_Box_from_BD_Shape_int64_t_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)
- [int ppl_new_Double_Box_from_BD_Shape_mpz_class_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)
- [int ppl_new_Double_Box_from_BD_Shape_mpq_class_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)
- [int ppl_new_Double_Box_from_Octagonal_Shape_int8_t_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)
- [int ppl_new_Double_Box_from_Octagonal_Shape_int16_t_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)
- [int ppl_new_Double_Box_from_Octagonal_Shape_int32_t_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)
- [int ppl_new_Double_Box_from_Octagonal_Shape_int64_t_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)

- int [ppl_new_Double_Box_from_Octagonal_Shape_mpz_class_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_Double_Box_from_Octagonal_Shape_mpq_class_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_Double_Box_from_C_Polyhedron_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_Double_Box_from_NNC_Polyhedron_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_Double_Box_from_Grid_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_Grid_t ph, int complexity)
- int [ppl_new_Double_Box_from_Float_Box_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_Float_Box_t ph, int complexity)
- int [ppl_new_Double_Box_from_BD_Shape_float_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_BD_Shape_float_t ph, int complexity)
- int [ppl_new_Double_Box_from_Octagonal_Shape_float_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)
- int [ppl_new_Double_Box_from_Double_Box_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_Double_Box_t ph, int complexity)
- int [ppl_new_Double_Box_from_BD_Shape_double_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_BD_Shape_double_t ph, int complexity)
- int [ppl_new_Double_Box_from_Octagonal_Shape_double_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)
- int [ppl_new_Double_Box_from_Long_Double_Box_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- int [ppl_new_Double_Box_from_BD_Shape_long_double_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity)
- int [ppl_new_Double_Box_from_Octagonal_Shape_long_double_with_complexity](#) (ppl_Double_Box_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)
- int [ppl_new_Double_Box_from_Constraint_System](#) (ppl_Double_Box_t *pph, ppl_const_Constraint_System_t cs)
- int [ppl_new_Double_Box_from_Congruence_System](#) (ppl_Double_Box_t *pph, ppl_const_Congruence_System_t cs)
- int [ppl_new_Double_Box_from_Generator_System](#) (ppl_Double_Box_t *pph, ppl_const_Generator_System_t cs)
- int [ppl_Double_Box_space_dimension](#) (ppl_const_Double_Box_t ph, [ppl_dimension_type](#) *m)
- int [ppl_Double_Box_affine_dimension](#) (ppl_const_Double_Box_t ph, [ppl_dimension_type](#) *m)
- int [ppl_Double_Box_relation_with_Constraint](#) (ppl_const_Double_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Double_Box_relation_with_Generator](#) (ppl_const_Double_Box_t ph, ppl_const_Generator_t c)
- int [ppl_Double_Box_relation_with_Congruence](#) (ppl_const_Double_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Double_Box_get_constraints](#) (ppl_const_Double_Box_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_Double_Box_get_congruences](#) (ppl_const_Double_Box_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_Double_Box_get_minimized_constraints](#) (ppl_const_Double_Box_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_Double_Box_get_minimized_congruences](#) (ppl_const_Double_Box_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_Double_Box_is_empty](#) (ppl_const_Double_Box_t ph)
- int [ppl_Double_Box_is_universe](#) (ppl_const_Double_Box_t ph)

- int [ppl_Double_Box_is_bounded](#) (ppl_const_Double_Box_t ph)
- int [ppl_Double_Box_contains_integer_point](#) (ppl_const_Double_Box_t ph)
- int [ppl_Double_Box_is_topologically_closed](#) (ppl_const_Double_Box_t ph)
- int [ppl_Double_Box_is_discrete](#) (ppl_const_Double_Box_t ph)
- int [ppl_Double_Box_topological_closure_assign](#) (ppl_Double_Box_t ph)
- int [ppl_Double_Box_bounds_from_above](#) (ppl_const_Double_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Double_Box_bounds_from_below](#) (ppl_const_Double_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Double_Box_maximize](#) (ppl_const_Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Double_Box_minimize](#) (ppl_const_Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Double_Box_maximize_with_point](#) (ppl_const_Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Double_Box_minimize_with_point](#) (ppl_const_Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Double_Box_frequency](#) (ppl_const_Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)
- int [ppl_Double_Box_contains_Double_Box](#) (ppl_const_Double_Box_t x, ppl_const_Double_Box_t y)
- int [ppl_Double_Box_strictly_contains_Double_Box](#) (ppl_const_Double_Box_t x, ppl_const_Double_Box_t y)
- int [ppl_Double_Box_is_disjoint_from_Double_Box](#) (ppl_const_Double_Box_t x, ppl_const_Double_Box_t y)
- int [ppl_Double_Box_equals_Double_Box](#) (ppl_const_Double_Box_t x, ppl_const_Double_Box_t y)
- int [ppl_Double_Box_OK](#) (ppl_const_Double_Box_t ph)
- int [ppl_Double_Box_add_constraint](#) (ppl_Double_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Double_Box_add_congruence](#) (ppl_Double_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Double_Box_add_constraints](#) (ppl_Double_Box_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Double_Box_add_congruences](#) (ppl_Double_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Double_Box_refine_with_constraint](#) (ppl_Double_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Double_Box_refine_with_congruence](#) (ppl_Double_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Double_Box_refine_with_constraints](#) (ppl_Double_Box_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Double_Box_refine_with_congruences](#) (ppl_Double_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Double_Box_intersection_assign](#) (ppl_Double_Box_t x, ppl_const_Double_Box_t y)
- int [ppl_Double_Box_upper_bound_assign](#) (ppl_Double_Box_t x, ppl_const_Double_Box_t y)
- int [ppl_Double_Box_difference_assign](#) (ppl_Double_Box_t x, ppl_const_Double_Box_t y)
- int [ppl_Double_Box_concatenate_assign](#) (ppl_Double_Box_t x, ppl_const_Double_Box_t y)
- int [ppl_Double_Box_time_elapse_assign](#) (ppl_Double_Box_t x, ppl_const_Double_Box_t y)
- int [ppl_Double_Box_upper_bound_assign_if_exact](#) (ppl_Double_Box_t x, ppl_const_Double_Box_t y)
- int [ppl_Double_Box_simplify_using_context_assign](#) (ppl_Double_Box_t x, ppl_const_Double_Box_t y)

- int [ppl_Double_Box_constrains](#) (ppl_Double_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Double_Box_unconstrain_space_dimension](#) (ppl_Double_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Double_Box_unconstrain_space_dimensions](#) (ppl_Double_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Double_Box_affine_image](#) (ppl_Double_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Double_Box_affine_preimage](#) (ppl_Double_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Double_Box_bounded_affine_image](#) (ppl_Double_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Double_Box_bounded_affine_preimage](#) (ppl_Double_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Double_Box_generalized_affine_image](#) (ppl_Double_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Double_Box_generalized_affine_preimage](#) (ppl_Double_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Double_Box_generalized_affine_image_lhs_rhs](#) (ppl_Double_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Double_Box_generalized_affine_preimage_lhs_rhs](#) (ppl_Double_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Double_Box_add_space_dimensions_and_embed](#) (ppl_Double_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Double_Box_add_space_dimensions_and_project](#) (ppl_Double_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Double_Box_remove_space_dimensions](#) (ppl_Double_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Double_Box_remove_higher_space_dimensions](#) (ppl_Double_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Double_Box_expand_space_dimension](#) (ppl_Double_Box_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Double_Box_fold_space_dimensions](#) (ppl_Double_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_Double_Box_map_space_dimensions](#) (ppl_Double_Box_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_Double_Box_drop_some_non_integer_points](#) (ppl_Double_Box_t ph, int complexity)
- int [ppl_Double_Box_drop_some_non_integer_points_2](#) (ppl_Double_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_Double_Box_external_memory_in_bytes](#) (ppl_const_Double_Box_t ps, size_t *sz)
- int [ppl_Double_Box_total_memory_in_bytes](#) (ppl_const_Double_Box_t ps, size_t *sz)
- int [ppl_Double_Box_CC76_widening_assign_with_tokens](#) (ppl_Double_Box_t x, ppl_const_Double_Box_t y, unsigned *tp)
- int [ppl_Double_Box_CC76_widening_assign](#) (ppl_Double_Box_t x, ppl_const_Double_Box_t y)
- int [ppl_Double_Box_widening_assign_with_tokens](#) (ppl_Double_Box_t x, ppl_const_Double_Box_t y, unsigned *tp)
- int [ppl_Double_Box_widening_assign](#) (ppl_Double_Box_t x, ppl_const_Double_Box_t y)
- int [ppl_Double_Box_limited_CC76_extrapolation_assign_with_tokens](#) (ppl_Double_Box_t x, ppl_const_Double_Box_t y, ppl_const_Constraint_System_t cs, unsigned *tp)

- int [ppl_Double_Box_limited_CC76_extrapolation_assign](#) (ppl_Double_Box_t x, ppl_const_Double_Box_t y, ppl_const_Constraint_System_t cs)
- int [ppl_Double_Box_linear_partition](#) (ppl_const_Double_Box_t x, ppl_const_Double_Box_t y, ppl_Double_Box_t *p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest)
- int [ppl_Double_Box_wrap_assign](#) (ppl_Double_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, enum [ppl_enum_Bounded_Integer_Type_Width](#) w, enum [ppl_enum_Bounded_Integer_Type_Representation](#) r, enum [ppl_enum_Bounded_Integer_Type_Overflow](#) o, const ppl_const_Constraint_System_t *pcs, unsigned complexity_threshold, int wrap_individually)
- int [ppl_new_Double_Box_recycle_Constraint_System](#) (ppl_Double_Box_t *pph, ppl_Constraint_System_t cs)
- int [ppl_new_Double_Box_recycle_Congruence_System](#) (ppl_Double_Box_t *pph, ppl_Congruence_System_t cs)
- int [ppl_new_Double_Box_recycle_Generator_System](#) (ppl_Double_Box_t *pph, ppl_Generator_System_t cs)
- int [ppl_assign_Double_Box_from_Double_Box](#) (ppl_Double_Box_t dst, ppl_const_Double_Box_t src)
- int [ppl_Double_Box_add_recycled_constraints](#) (ppl_Double_Box_t ph, ppl_Constraint_System_t cs)
- int [ppl_Double_Box_add_recycled_congruences](#) (ppl_Double_Box_t ph, ppl_Congruence_System_t cs)
- int [ppl_termination_test_MS_Double_Box](#) (ppl_const_Double_Box_t pset)
- int [ppl_termination_test_PR_Double_Box](#) (ppl_const_Double_Box_t pset)
- int [ppl_one_affine_ranking_function_MS_Double_Box](#) (ppl_const_Double_Box_t pset, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_Double_Box](#) (ppl_const_Double_Box_t pset, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_Double_Box](#) (ppl_const_Double_Box_t pset, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_Double_Box](#) (ppl_const_Double_Box_t pset, ppl_Polyhedron_t ph)
- int [ppl_termination_test_MS_Double_Box_2](#) (ppl_const_Double_Box_t pset_before, ppl_const_Double_Box_t pset_after)
- int [ppl_termination_test_PR_Double_Box_2](#) (ppl_const_Double_Box_t pset_before, ppl_const_Double_Box_t pset_after)
- int [ppl_one_affine_ranking_function_MS_Double_Box_2](#) (ppl_const_Double_Box_t pset_before, ppl_const_Double_Box_t pset_after, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_Double_Box_2](#) (ppl_const_Double_Box_t pset_before, ppl_const_Double_Box_t pset_after, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_Double_Box_2](#) (ppl_const_Double_Box_t pset_before, ppl_const_Double_Box_t pset_after, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_Double_Box_2](#) (ppl_const_Double_Box_t pset_before, ppl_const_Double_Box_t pset_after, ppl_Polyhedron_t ph)

10.25.1 Detailed Description

Types and functions for [ppl_Double_Box_tag](#).

10.25.2 Friends And Related Function Documentation

- 10.25.2.1** `int ppl_all_affine_ranking_functions_MS_Double_Box (ppl_const_Double_Box_t pset,
ppl_Polyhedron_t ph)` [**related**]
- 10.25.2.2** `int ppl_all_affine_ranking_functions_MS_Double_Box_2 (ppl_const_Double_Box_t
pset_before, ppl_const_Double_Box_t pset_after, ppl_Polyhedron_t ph)` [**related**]
- 10.25.2.3** `int ppl_all_affine_ranking_functions_PR_Double_Box (ppl_const_Double_Box_t pset,
ppl_Polyhedron_t ph)` [**related**]
- 10.25.2.4** `int ppl_all_affine_ranking_functions_PR_Double_Box_2 (ppl_const_Double_Box_t
pset_before, ppl_const_Double_Box_t pset_after, ppl_Polyhedron_t ph)` [**related**]
- 10.25.2.5** `int ppl_assign_Double_Box_from_Double_Box (ppl_Double_Box_t dst,
ppl_const_Double_Box_t src)` [**related**]
- 10.25.2.6** `int ppl_delete_Double_Box (ppl_const_Double_Box_t ph)` [**related**]
- 10.25.2.7** `int ppl_Double_Box_add_congruence (ppl_Double_Box_t ph, ppl_const_Congruence_t
c)` [**related**]
- 10.25.2.8** `int ppl_Double_Box_add_congruences (ppl_Double_Box_t ph,
ppl_const_Congruence_System_t cs)` [**related**]
- 10.25.2.9** `int ppl_Double_Box_add_constraint (ppl_Double_Box_t ph, ppl_const_Constraint_t c)`
[**related**]

- 10.25.2.10 `int ppl_Double_Box_add_constraints (ppl_Double_Box_t ph,
ppl_const_Constraint_System_t cs)` [`related`]

- 10.25.2.11 `int ppl_Double_Box_add_recycled_congruences (ppl_Double_Box_t ph,
ppl_Congruence_System_t cs)` [`related`]

- 10.25.2.12 `int ppl_Double_Box_add_recycled_constraints (ppl_Double_Box_t ph,
ppl_Constraint_System_t cs)` [`related`]

- 10.25.2.13 `int ppl_Double_Box_add_space_dimensions_and_embed (ppl_Double_Box_t ph,
ppl_dimension_type d)` [`related`]

- 10.25.2.14 `int ppl_Double_Box_add_space_dimensions_and_project (ppl_Double_Box_t ph,
ppl_dimension_type d)` [`related`]

- 10.25.2.15 `int ppl_Double_Box_affine_dimension (ppl_const_Double_Box_t ph,
ppl_dimension_type * m)` [`related`]

- 10.25.2.16 `int ppl_Double_Box_affine_image (ppl_Double_Box_t ph, ppl_dimension_type var,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]

- 10.25.2.17 `int ppl_Double_Box_affine_preimage (ppl_Double_Box_t ph, ppl_dimension_type var,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]

- 10.25.2.18 `int ppl_Double_Box_bounded_affine_image (ppl_Double_Box_t ph, ppl_dimension_type var,
ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub,
ppl_const_Coefficient_t d)` [`related`]

- 10.25.2.19** `int ppl_Double_Box_bounded_affine_preimage (ppl_Double_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` `[related]`
- 10.25.2.20** `int ppl_Double_Box_bounds_from_above (ppl_const_Double_Box_t ph, ppl_const_Linear_Expression_t le)` `[related]`
- 10.25.2.21** `int ppl_Double_Box_bounds_from_below (ppl_const_Double_Box_t ph, ppl_const_Linear_Expression_t le)` `[related]`
- 10.25.2.22** `int ppl_Double_Box_CC76_widening_assign (ppl_Double_Box_t x, ppl_const_Double_Box_t y)` `[related]`
- 10.25.2.23** `int ppl_Double_Box_CC76_widening_assign_with_tokens (ppl_Double_Box_t x, ppl_const_Double_Box_t y, unsigned * tp)` `[related]`
- 10.25.2.24** `int ppl_Double_Box_concatenate_assign (ppl_Double_Box_t x, ppl_const_Double_Box_t y)` `[related]`
- 10.25.2.25** `int ppl_Double_Box_constrains (ppl_Double_Box_t ph, ppl_dimension_type var)` `[related]`
- 10.25.2.26** `int ppl_Double_Box_contains_Double_Box (ppl_const_Double_Box_t x, ppl_const_Double_Box_t y)` `[related]`
- 10.25.2.27** `int ppl_Double_Box_contains_integer_point (ppl_const_Double_Box_t ph)` `[related]`

- 10.25.2.28 `int ppl_Double_Box_difference_assign (ppl_Double_Box_t x, ppl_const_Double_Box_t y) [related]`
- 10.25.2.29 `int ppl_Double_Box_drop_some_non_integer_points (ppl_Double_Box_t ph, int complexity) [related]`
- 10.25.2.30 `int ppl_Double_Box_drop_some_non_integer_points_2 (ppl_Double_Box_t ph, ppl_dimension_type ds[], size_t n, int complexity) [related]`
- 10.25.2.31 `int ppl_Double_Box_equals_Double_Box (ppl_const_Double_Box_t x, ppl_const_Double_Box_t y) [related]`
- 10.25.2.32 `int ppl_Double_Box_expand_space_dimension (ppl_Double_Box_t ph, ppl_dimension_type d, ppl_dimension_type m) [related]`
- 10.25.2.33 `int ppl_Double_Box_external_memory_in_bytes (ppl_const_Double_Box_t ps, size_t * sz) [related]`
- 10.25.2.34 `int ppl_Double_Box_fold_space_dimensions (ppl_Double_Box_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d) [related]`
- 10.25.2.35 `int ppl_Double_Box_frequency (ppl_const_Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd) [related]`
- 10.25.2.36 `int ppl_Double_Box_generalized_affine_image (ppl_Double_Box_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d) [related]`

- 10.25.2.37 `int ppl_Double_Box_generalized_affine_image_lhs_rhs (ppl_Double_Box_t ph,
ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relysym,
ppl_const_Linear_Expression_t rhs)` [`related`]
- 10.25.2.38 `int ppl_Double_Box_generalized_affine_preimage (ppl_Double_Box_t
ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relysym,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.25.2.39 `int ppl_Double_Box_generalized_affine_preimage_lhs_rhs (ppl_Double_Box_t ph,
ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relysym,
ppl_const_Linear_Expression_t rhs)` [`related`]
- 10.25.2.40 `int ppl_Double_Box_get_congruences (ppl_const_Double_Box_t ph,
ppl_const_Congruence_System_t * pcs)` [`related`]
- 10.25.2.41 `int ppl_Double_Box_get_constraints (ppl_const_Double_Box_t ph,
ppl_const_Constraint_System_t * pcs)` [`related`]
- 10.25.2.42 `int ppl_Double_Box_get_minimized_congruences (ppl_const_Double_Box_t ph,
ppl_const_Congruence_System_t * pcs)` [`related`]
- 10.25.2.43 `int ppl_Double_Box_get_minimized_constraints (ppl_const_Double_Box_t ph,
ppl_const_Constraint_System_t * pcs)` [`related`]
- 10.25.2.44 `int ppl_Double_Box_intersection_assign (ppl_Double_Box_t x,
ppl_const_Double_Box_t y)` [`related`]
- 10.25.2.45 `int ppl_Double_Box_is_bounded (ppl_const_Double_Box_t ph)` [`related`]

- 10.25.2.46 `int ppl_Double_Box_is_discrete (ppl_const_Double_Box_t ph)` [`related`]
- 10.25.2.47 `int ppl_Double_Box_is_disjoint_from_Double_Box (ppl_const_Double_Box_t x,
ppl_const_Double_Box_t y)` [`related`]
- 10.25.2.48 `int ppl_Double_Box_is_empty (ppl_const_Double_Box_t ph)` [`related`]
- 10.25.2.49 `int ppl_Double_Box_is_topologically_closed (ppl_const_Double_Box_t ph)`
[`related`]
- 10.25.2.50 `int ppl_Double_Box_is_universe (ppl_const_Double_Box_t ph)` [`related`]
- 10.25.2.51 `int ppl_Double_Box_limited_CC76_extrapolation_assign (ppl_Double_Box_t x,
ppl_const_Double_Box_t y, ppl_const_Constraint_System_t cs)` [`related`]
- 10.25.2.52 `int ppl_Double_Box_limited_CC76_extrapolation_assign_with_tokens
(ppl_Double_Box_t x, ppl_const_Double_Box_t y, ppl_const_Constraint_System_t cs,
unsigned * tp)` [`related`]
- 10.25.2.53 `int ppl_Double_Box_linear_partition (ppl_const_Double_Box_t x, ppl_const_Double_Box_t y,
ppl_Double_Box_t * p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t *
p_rest)` [`related`]
- 10.25.2.54 `int ppl_Double_Box_map_space_dimensions (ppl_Double_Box_t ph,
ppl_dimension_type maps[], size_t n)` [`related`]

- 10.25.2.55** `int ppl_Double_Box_maximize (ppl_const_Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` `[related]`
- 10.25.2.56** `int ppl_Double_Box_maximize_with_point (ppl_const_Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` `[related]`
- 10.25.2.57** `int ppl_Double_Box_minimize (ppl_const_Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` `[related]`
- 10.25.2.58** `int ppl_Double_Box_minimize_with_point (ppl_const_Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` `[related]`
- 10.25.2.59** `int ppl_Double_Box_OK (ppl_const_Double_Box_t ph)` `[related]`
- 10.25.2.60** `int ppl_Double_Box_refine_with_congruence (ppl_Double_Box_t ph, ppl_const_Congruence_t c)` `[related]`
- 10.25.2.61** `int ppl_Double_Box_refine_with_congruences (ppl_Double_Box_t ph, ppl_const_Congruence_System_t cs)` `[related]`
- 10.25.2.62** `int ppl_Double_Box_refine_with_constraint (ppl_Double_Box_t ph, ppl_const_Constraint_t c)` `[related]`
- 10.25.2.63** `int ppl_Double_Box_refine_with_constraints (ppl_Double_Box_t ph, ppl_const_Constraint_System_t cs)` `[related]`

- 10.25.2.64 `int ppl_Double_Box_relation_with_Congruence (ppl_const_Double_Box_t ph,
ppl_const_Congruence_t c)` [`related`]

- 10.25.2.65 `int ppl_Double_Box_relation_with_Constraint (ppl_const_Double_Box_t ph,
ppl_const_Constraint_t c)` [`related`]

- 10.25.2.66 `int ppl_Double_Box_relation_with_Generator (ppl_const_Double_Box_t ph,
ppl_const_Generator_t c)` [`related`]

- 10.25.2.67 `int ppl_Double_Box_remove_higher_space_dimensions (ppl_Double_Box_t ph,
ppl_dimension_type d)` [`related`]

- 10.25.2.68 `int ppl_Double_Box_remove_space_dimensions (ppl_Double_Box_t ph,
ppl_dimension_type ds[], size_t n)` [`related`]

- 10.25.2.69 `int ppl_Double_Box_simplify_using_context_assign (ppl_Double_Box_t x,
ppl_const_Double_Box_t y)` [`related`]

- 10.25.2.70 `int ppl_Double_Box_space_dimension (ppl_const_Double_Box_t ph,
ppl_dimension_type * m)` [`related`]

- 10.25.2.71 `int ppl_Double_Box_strictly_contains_Double_Box (ppl_const_Double_Box_t x,
ppl_const_Double_Box_t y)` [`related`]

- 10.25.2.72 `int ppl_Double_Box_time_elapse_assign (ppl_Double_Box_t x,
ppl_const_Double_Box_t y)` [`related`]

- 10.25.2.73 `int ppl_Double_Box_topological_closure_assign (ppl_Double_Box_t ph)` [`related`]

- 10.25.2.74 `int ppl_Double_Box_total_memory_in_bytes (ppl_const_Double_Box_t ps, size_t * sz)` `[related]`
- 10.25.2.75 `int ppl_Double_Box_unconstrain_space_dimension (ppl_Double_Box_t ph, ppl_dimension_type var)` `[related]`
- 10.25.2.76 `int ppl_Double_Box_unconstrain_space_dimensions (ppl_Double_Box_t ph, ppl_dimension_type ds[], size_t n)` `[related]`
- 10.25.2.77 `int ppl_Double_Box_upper_bound_assign (ppl_Double_Box_t x, ppl_const_Double_Box_t y)` `[related]`
- 10.25.2.78 `int ppl_Double_Box_upper_bound_assign_if_exact (ppl_Double_Box_t x, ppl_const_Double_Box_t y)` `[related]`
- 10.25.2.79 `int ppl_Double_Box_widening_assign (ppl_Double_Box_t x, ppl_const_Double_Box_t y)` `[related]`
- 10.25.2.80 `int ppl_Double_Box_widening_assign_with_tokens (ppl_Double_Box_t x, ppl_const_Double_Box_t y, unsigned * tp)` `[related]`
- 10.25.2.81 `int ppl_Double_Box_wrap_assign (ppl_Double_Box_t ph, ppl_dimension_type ds[], size_t n, enum ppl_enum_Bounded_Integer_Type_Width w, enum ppl_enum_Bounded_Integer_Type_Representation r, enum ppl_enum_Bounded_Integer_Type_Overflow o, const ppl_const_Constraint_System_t * pcs, unsigned complexity_threshold, int wrap_individually)` `[related]`
- 10.25.2.82 `int ppl_new_Double_Box_from_BD_Shape_double (ppl_Double_Box_t * pph, ppl_const_BD_Shape_double_t ph)` `[related]`

- 10.25.2.83 `int ppl_new_Double_Box_from_BD_Shape_double_with_complexity`
 (`ppl_Double_Box_t * pph`, `ppl_const_BD_Shape_double_t ph`, `int complexity`)
 [related]
- 10.25.2.84 `int ppl_new_Double_Box_from_BD_Shape_float` (`ppl_Double_Box_t * pph`,
`ppl_const_BD_Shape_float_t ph`) [related]
- 10.25.2.85 `int ppl_new_Double_Box_from_BD_Shape_float_with_complexity` (`ppl_Double_Box_t`
`* pph`, `ppl_const_BD_Shape_float_t ph`, `int complexity`) [related]
- 10.25.2.86 `int ppl_new_Double_Box_from_BD_Shape_int16_t` (`ppl_Double_Box_t * pph`,
`ppl_const_BD_Shape_int16_t_t ph`) [related]
- 10.25.2.87 `int ppl_new_Double_Box_from_BD_Shape_int16_t_with_complexity`
 (`ppl_Double_Box_t * pph`, `ppl_const_BD_Shape_int16_t_t ph`, `int complexity`)
 [related]
- 10.25.2.88 `int ppl_new_Double_Box_from_BD_Shape_int32_t` (`ppl_Double_Box_t * pph`,
`ppl_const_BD_Shape_int32_t_t ph`) [related]
- 10.25.2.89 `int ppl_new_Double_Box_from_BD_Shape_int32_t_with_complexity`
 (`ppl_Double_Box_t * pph`, `ppl_const_BD_Shape_int32_t_t ph`, `int complexity`)
 [related]
- 10.25.2.90 `int ppl_new_Double_Box_from_BD_Shape_int64_t` (`ppl_Double_Box_t * pph`,
`ppl_const_BD_Shape_int64_t_t ph`) [related]
- 10.25.2.91 `int ppl_new_Double_Box_from_BD_Shape_int64_t_with_complexity`
 (`ppl_Double_Box_t * pph`, `ppl_const_BD_Shape_int64_t_t ph`, `int complexity`)
 [related]

- 10.25.2.92** `int ppl_new_Double_Box_from_BD_Shape_int8_t (ppl_Double_Box_t * pph,
ppl_const_BD_Shape_int8_t_t ph)` [**related**]
- 10.25.2.93** `int ppl_new_Double_Box_from_BD_Shape_int8_t_with_complexity
(ppl_Double_Box_t * pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)`
[**related**]
- 10.25.2.94** `int ppl_new_Double_Box_from_BD_Shape_long_double (ppl_Double_Box_t * pph,
ppl_const_BD_Shape_long_double_t ph)` [**related**]
- 10.25.2.95** `int ppl_new_Double_Box_from_BD_Shape_long_double_with_complexity
(ppl_Double_Box_t * pph, ppl_const_BD_Shape_long_double_t ph, int complexity)`
[**related**]
- 10.25.2.96** `int ppl_new_Double_Box_from_BD_Shape_mpq_class (ppl_Double_Box_t * pph,
ppl_const_BD_Shape_mpq_class_t ph)` [**related**]
- 10.25.2.97** `int ppl_new_Double_Box_from_BD_Shape_mpq_class_with_complexity
(ppl_Double_Box_t * pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)`
[**related**]
- 10.25.2.98** `int ppl_new_Double_Box_from_BD_Shape_mpz_class (ppl_Double_Box_t * pph,
ppl_const_BD_Shape_mpz_class_t ph)` [**related**]
- 10.25.2.99** `int ppl_new_Double_Box_from_BD_Shape_mpz_class_with_complexity
(ppl_Double_Box_t * pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)`
[**related**]
- 10.25.2.100** `int ppl_new_Double_Box_from_C_Polyhedron (ppl_Double_Box_t * pph,
ppl_const_Polyhedron_t ph)` [**related**]

- 10.25.2.101 `int ppl_new_Double_Box_from_C_Polyhedron_with_complexity (ppl_Double_Box_t * pph, ppl_const_Polyhedron_t ph, int complexity)` [**related**]
- 10.25.2.102 `int ppl_new_Double_Box_from_Congruence_System (ppl_Double_Box_t * pph, ppl_const_Congruence_System_t cs)` [**related**]
- 10.25.2.103 `int ppl_new_Double_Box_from_Constraint_System (ppl_Double_Box_t * pph, ppl_const_Constraint_System_t cs)` [**related**]
- 10.25.2.104 `int ppl_new_Double_Box_from_Double_Box (ppl_Double_Box_t * pph, ppl_const_Double_Box_t ph)` [**related**]
- 10.25.2.105 `int ppl_new_Double_Box_from_Double_Box_with_complexity (ppl_Double_Box_t * pph, ppl_const_Double_Box_t ph, int complexity)` [**related**]
- 10.25.2.106 `int ppl_new_Double_Box_from_Float_Box (ppl_Double_Box_t * pph, ppl_const_Float_Box_t ph)` [**related**]
- 10.25.2.107 `int ppl_new_Double_Box_from_Float_Box_with_complexity (ppl_Double_Box_t * pph, ppl_const_Float_Box_t ph, int complexity)` [**related**]
- 10.25.2.108 `int ppl_new_Double_Box_from_Generator_System (ppl_Double_Box_t * pph, ppl_const_Generator_System_t cs)` [**related**]
- 10.25.2.109 `int ppl_new_Double_Box_from_Grid (ppl_Double_Box_t * pph, ppl_const_Grid_t ph)` [**related**]

- 10.25.2.110 `int ppl_new_Double_Box_from_Grid_with_complexity (ppl_Double_Box_t * pph,
ppl_const_Grid_t ph, int complexity)` [`related`]
- 10.25.2.111 `int ppl_new_Double_Box_from_Int16_Box (ppl_Double_Box_t * pph,
ppl_const_Int16_Box_t ph)` [`related`]
- 10.25.2.112 `int ppl_new_Double_Box_from_Int16_Box_with_complexity (ppl_Double_Box_t *
pph, ppl_const_Int16_Box_t ph, int complexity)` [`related`]
- 10.25.2.113 `int ppl_new_Double_Box_from_Int32_Box (ppl_Double_Box_t * pph,
ppl_const_Int32_Box_t ph)` [`related`]
- 10.25.2.114 `int ppl_new_Double_Box_from_Int32_Box_with_complexity (ppl_Double_Box_t *
pph, ppl_const_Int32_Box_t ph, int complexity)` [`related`]
- 10.25.2.115 `int ppl_new_Double_Box_from_Int64_Box (ppl_Double_Box_t * pph,
ppl_const_Int64_Box_t ph)` [`related`]
- 10.25.2.116 `int ppl_new_Double_Box_from_Int64_Box_with_complexity (ppl_Double_Box_t *
pph, ppl_const_Int64_Box_t ph, int complexity)` [`related`]
- 10.25.2.117 `int ppl_new_Double_Box_from_Int8_Box (ppl_Double_Box_t * pph,
ppl_const_Int8_Box_t ph)` [`related`]
- 10.25.2.118 `int ppl_new_Double_Box_from_Int8_Box_with_complexity (ppl_Double_Box_t * pph,
ppl_const_Int8_Box_t ph, int complexity)` [`related`]

- 10.25.2.119 `int ppl_new_Double_Box_from_Long_Double_Box (ppl_Double_Box_t * pph,
ppl_const_Long_Double_Box_t ph)` [`related`]
- 10.25.2.120 `int ppl_new_Double_Box_from_Long_Double_Box_with_complexity
(ppl_Double_Box_t * pph, ppl_const_Long_Double_Box_t ph, int complexity)`
[`related`]
- 10.25.2.121 `int ppl_new_Double_Box_from_NNC_Polyhedron (ppl_Double_Box_t * pph,
ppl_const_Polyhedron_t ph)` [`related`]
- 10.25.2.122 `int ppl_new_Double_Box_from_NNC_Polyhedron_with_complexity
(ppl_Double_Box_t * pph, ppl_const_Polyhedron_t ph, int complexity)` [`related`]
- 10.25.2.123 `int ppl_new_Double_Box_from-Octagonal_Shape_double (ppl_Double_Box_t * pph,
ppl_const-Octagonal_Shape_double_t ph)` [`related`]
- 10.25.2.124 `int ppl_new_Double_Box_from-Octagonal_Shape_double_with_complexity
(ppl_Double_Box_t * pph, ppl_const-Octagonal_Shape_double_t ph, int complexity)`
[`related`]
- 10.25.2.125 `int ppl_new_Double_Box_from-Octagonal_Shape_float (ppl_Double_Box_t * pph,
ppl_const-Octagonal_Shape_float_t ph)` [`related`]
- 10.25.2.126 `int ppl_new_Double_Box_from-Octagonal_Shape_float_with_complexity
(ppl_Double_Box_t * pph, ppl_const-Octagonal_Shape_float_t ph, int complexity)`
[`related`]
- 10.25.2.127 `int ppl_new_Double_Box_from-Octagonal_Shape_int16_t (ppl_Double_Box_t * pph,
ppl_const-Octagonal_Shape_int16_t ph)` [`related`]

- 10.25.2.128 `int ppl_new_Double_Box_from_Octagonal_Shape_int16_t_with_complexity`
(`ppl_Double_Box_t * pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`, `int complexity`)
[related]
- 10.25.2.129 `int ppl_new_Double_Box_from_Octagonal_Shape_int32_t` (`ppl_Double_Box_t * pph`,
`ppl_const_Octagonal_Shape_int32_t_t ph`) [related]
- 10.25.2.130 `int ppl_new_Double_Box_from_Octagonal_Shape_int32_t_with_complexity`
(`ppl_Double_Box_t * pph`, `ppl_const_Octagonal_Shape_int32_t_t ph`, `int complexity`)
[related]
- 10.25.2.131 `int ppl_new_Double_Box_from_Octagonal_Shape_int64_t` (`ppl_Double_Box_t * pph`,
`ppl_const_Octagonal_Shape_int64_t_t ph`) [related]
- 10.25.2.132 `int ppl_new_Double_Box_from_Octagonal_Shape_int64_t_with_complexity`
(`ppl_Double_Box_t * pph`, `ppl_const_Octagonal_Shape_int64_t_t ph`, `int complexity`)
[related]
- 10.25.2.133 `int ppl_new_Double_Box_from_Octagonal_Shape_int8_t` (`ppl_Double_Box_t * pph`,
`ppl_const_Octagonal_Shape_int8_t_t ph`) [related]
- 10.25.2.134 `int ppl_new_Double_Box_from_Octagonal_Shape_int8_t_with_complexity`
(`ppl_Double_Box_t * pph`, `ppl_const_Octagonal_Shape_int8_t_t ph`, `int complexity`)
[related]
- 10.25.2.135 `int ppl_new_Double_Box_from_Octagonal_Shape_long_double` (`ppl_Double_Box_t *`
`pph`, `ppl_const_Octagonal_Shape_long_double_t ph`) [related]

- 10.25.2.136 `int ppl_new_Double_Box_from_Octagonal_Shape_long_double_with_complexity (ppl_Double_Box_t * pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)` [`related`]
- 10.25.2.137 `int ppl_new_Double_Box_from_Octagonal_Shape_mpq_class (ppl_Double_Box_t * pph, ppl_const_Octagonal_Shape_mpq_class_t ph)` [`related`]
- 10.25.2.138 `int ppl_new_Double_Box_from_Octagonal_Shape_mpq_class_with_complexity (ppl_Double_Box_t * pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)` [`related`]
- 10.25.2.139 `int ppl_new_Double_Box_from_Octagonal_Shape_mpz_class (ppl_Double_Box_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph)` [`related`]
- 10.25.2.140 `int ppl_new_Double_Box_from_Octagonal_Shape_mpz_class_with_complexity (ppl_Double_Box_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)` [`related`]
- 10.25.2.141 `int ppl_new_Double_Box_from_Rational_Box (ppl_Double_Box_t * pph, ppl_const_Rational_Box_t ph)` [`related`]
- 10.25.2.142 `int ppl_new_Double_Box_from_Rational_Box_with_complexity (ppl_Double_Box_t * pph, ppl_const_Rational_Box_t ph, int complexity)` [`related`]
- 10.25.2.143 `int ppl_new_Double_Box_from_space_dimension (ppl_Double_Box_t * pph, ppl_dimension_type d, int empty)` [`related`]
- 10.25.2.144 `int ppl_new_Double_Box_from_Uint16_Box (ppl_Double_Box_t * pph, ppl_const_Uint16_Box_t ph)` [`related`]

- 10.25.2.145 `int ppl_new_Double_Box_from_Uint16_Box_with_complexity (ppl_Double_Box_t * pph, ppl_const_Uint16_Box_t ph, int complexity)` [related]
- 10.25.2.146 `int ppl_new_Double_Box_from_Uint32_Box (ppl_Double_Box_t * pph, ppl_const_Uint32_Box_t ph)` [related]
- 10.25.2.147 `int ppl_new_Double_Box_from_Uint32_Box_with_complexity (ppl_Double_Box_t * pph, ppl_const_Uint32_Box_t ph, int complexity)` [related]
- 10.25.2.148 `int ppl_new_Double_Box_from_Uint64_Box (ppl_Double_Box_t * pph, ppl_const_Uint64_Box_t ph)` [related]
- 10.25.2.149 `int ppl_new_Double_Box_from_Uint64_Box_with_complexity (ppl_Double_Box_t * pph, ppl_const_Uint64_Box_t ph, int complexity)` [related]
- 10.25.2.150 `int ppl_new_Double_Box_from_Uint8_Box (ppl_Double_Box_t * pph, ppl_const_Uint8_Box_t ph)` [related]
- 10.25.2.151 `int ppl_new_Double_Box_from_Uint8_Box_with_complexity (ppl_Double_Box_t * pph, ppl_const_Uint8_Box_t ph, int complexity)` [related]
- 10.25.2.152 `int ppl_new_Double_Box_from_Z_Box (ppl_Double_Box_t * pph, ppl_const_Z_Box_t ph)` [related]
- 10.25.2.153 `int ppl_new_Double_Box_from_Z_Box_with_complexity (ppl_Double_Box_t * pph, ppl_const_Z_Box_t ph, int complexity)` [related]

- 10.25.2.154 `int ppl_new_Double_Box_recycle_Congruence_System (ppl_Double_Box_t * pph,
ppl_Congruence_System_t cs)` [**related**]
- 10.25.2.155 `int ppl_new_Double_Box_recycle_Constraint_System (ppl_Double_Box_t * pph,
ppl_Constraint_System_t cs)` [**related**]
- 10.25.2.156 `int ppl_new_Double_Box_recycle_Generator_System (ppl_Double_Box_t * pph,
ppl_Generator_System_t cs)` [**related**]
- 10.25.2.157 `int ppl_one_affine_ranking_function_MS_Double_Box (ppl_const_Double_Box_t pset,
ppl_Generator_t point)` [**related**]
- 10.25.2.158 `int ppl_one_affine_ranking_function_MS_Double_Box_2 (ppl_const_Double_Box_t
pset_before, ppl_const_Double_Box_t pset_after, ppl_Generator_t point)`
[**related**]
- 10.25.2.159 `int ppl_one_affine_ranking_function_PR_Double_Box (ppl_const_Double_Box_t pset,
ppl_Generator_t point)` [**related**]
- 10.25.2.160 `int ppl_one_affine_ranking_function_PR_Double_Box_2 (ppl_const_Double_Box_t
pset_before, ppl_const_Double_Box_t pset_after, ppl_Generator_t point)`
[**related**]
- 10.25.2.161 `int ppl_termination_test_MS_Double_Box (ppl_const_Double_Box_t pset)`
[**related**]
- 10.25.2.162 `int ppl_termination_test_MS_Double_Box_2 (ppl_const_Double_Box_t pset_before,
ppl_const_Double_Box_t pset_after)` [**related**]

10.25.2.163 int `ppl_termination_test_PR_Double_Box` (`ppl_const_Double_Box_t pset`)
[related]

10.25.2.164 int `ppl_termination_test_PR_Double_Box_2` (`ppl_const_Double_Box_t pset_before`,
`ppl_const_Double_Box_t pset_after`) [related]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.26 ppl_Float_Box_tag Interface Reference

Types and functions for [ppl_Float_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- int [ppl_delete_Float_Box](#) (`ppl_const_Float_Box_t ph`)
- int [ppl_new_Float_Box_from_space_dimension](#) (`ppl_Float_Box_t *pph`, [ppl_dimension_type](#) `d`, int `empty`)
- int [ppl_new_Float_Box_from_Int8_Box](#) (`ppl_Float_Box_t *pph`, `ppl_const_Int8_Box_t ph`)
- int [ppl_new_Float_Box_from_Int16_Box](#) (`ppl_Float_Box_t *pph`, `ppl_const_Int16_Box_t ph`)
- int [ppl_new_Float_Box_from_Int32_Box](#) (`ppl_Float_Box_t *pph`, `ppl_const_Int32_Box_t ph`)
- int [ppl_new_Float_Box_from_Int64_Box](#) (`ppl_Float_Box_t *pph`, `ppl_const_Int64_Box_t ph`)
- int [ppl_new_Float_Box_from_Uint8_Box](#) (`ppl_Float_Box_t *pph`, `ppl_const_Uint8_Box_t ph`)
- int [ppl_new_Float_Box_from_Uint16_Box](#) (`ppl_Float_Box_t *pph`, `ppl_const_Uint16_Box_t ph`)
- int [ppl_new_Float_Box_from_Uint32_Box](#) (`ppl_Float_Box_t *pph`, `ppl_const_Uint32_Box_t ph`)
- int [ppl_new_Float_Box_from_Uint64_Box](#) (`ppl_Float_Box_t *pph`, `ppl_const_Uint64_Box_t ph`)
- int [ppl_new_Float_Box_from_Z_Box](#) (`ppl_Float_Box_t *pph`, `ppl_const_Z_Box_t ph`)
- int [ppl_new_Float_Box_from_Rational_Box](#) (`ppl_Float_Box_t *pph`, `ppl_const_Rational_Box_t ph`)
- int [ppl_new_Float_Box_from_BD_Shape_int8_t](#) (`ppl_Float_Box_t *pph`, `ppl_const_BD_Shape_int8_t_t ph`)
- int [ppl_new_Float_Box_from_BD_Shape_int16_t](#) (`ppl_Float_Box_t *pph`, `ppl_const_BD_Shape_int16_t_t ph`)
- int [ppl_new_Float_Box_from_BD_Shape_int32_t](#) (`ppl_Float_Box_t *pph`, `ppl_const_BD_Shape_int32_t_t ph`)
- int [ppl_new_Float_Box_from_BD_Shape_int64_t](#) (`ppl_Float_Box_t *pph`, `ppl_const_BD_Shape_int64_t_t ph`)
- int [ppl_new_Float_Box_from_BD_Shape_mpz_class](#) (`ppl_Float_Box_t *pph`, `ppl_const_BD_Shape_mpz_class_t ph`)
- int [ppl_new_Float_Box_from_BD_Shape_mpq_class](#) (`ppl_Float_Box_t *pph`, `ppl_const_BD_Shape_mpq_class_t ph`)

- [int ppl_new_Float_Box_from_Octagonal_Shape_int8_t](#) (ppl_Float_Box_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph)
- [int ppl_new_Float_Box_from_Octagonal_Shape_int16_t](#) (ppl_Float_Box_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph)
- [int ppl_new_Float_Box_from_Octagonal_Shape_int32_t](#) (ppl_Float_Box_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph)
- [int ppl_new_Float_Box_from_Octagonal_Shape_int64_t](#) (ppl_Float_Box_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph)
- [int ppl_new_Float_Box_from_Octagonal_Shape_mpz_class](#) (ppl_Float_Box_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph)
- [int ppl_new_Float_Box_from_Octagonal_Shape_mpq_class](#) (ppl_Float_Box_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph)
- [int ppl_new_Float_Box_from_C_Polyhedron](#) (ppl_Float_Box_t *pph, ppl_const_Polyhedron_t ph)
- [int ppl_new_Float_Box_from_NNC_Polyhedron](#) (ppl_Float_Box_t *pph, ppl_const_Polyhedron_t ph)
- [int ppl_new_Float_Box_from_Grid](#) (ppl_Float_Box_t *pph, ppl_const_Grid_t ph)
- [int ppl_new_Float_Box_from_Float_Box](#) (ppl_Float_Box_t *pph, ppl_const_Float_Box_t ph)
- [int ppl_new_Float_Box_from_BD_Shape_float](#) (ppl_Float_Box_t *pph, ppl_const_BD_Shape_float_t ph)
- [int ppl_new_Float_Box_from_Octagonal_Shape_float](#) (ppl_Float_Box_t *pph, ppl_const_Octagonal_Shape_float_t ph)
- [int ppl_new_Float_Box_from_Double_Box](#) (ppl_Float_Box_t *pph, ppl_const_Double_Box_t ph)
- [int ppl_new_Float_Box_from_BD_Shape_double](#) (ppl_Float_Box_t *pph, ppl_const_BD_Shape_double_t ph)
- [int ppl_new_Float_Box_from_Octagonal_Shape_double](#) (ppl_Float_Box_t *pph, ppl_const_Octagonal_Shape_double_t ph)
- [int ppl_new_Float_Box_from_Long_Double_Box](#) (ppl_Float_Box_t *pph, ppl_const_Long_Double_Box_t ph)
- [int ppl_new_Float_Box_from_BD_Shape_long_double](#) (ppl_Float_Box_t *pph, ppl_const_BD_Shape_long_double_t ph)
- [int ppl_new_Float_Box_from_Octagonal_Shape_long_double](#) (ppl_Float_Box_t *pph, ppl_const_Octagonal_Shape_long_double_t ph)
- [int ppl_new_Float_Box_from_Int8_Box_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_Int8_Box_t ph, int complexity)
- [int ppl_new_Float_Box_from_Int16_Box_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_Int16_Box_t ph, int complexity)
- [int ppl_new_Float_Box_from_Int32_Box_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_Int32_Box_t ph, int complexity)
- [int ppl_new_Float_Box_from_Int64_Box_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_Int64_Box_t ph, int complexity)
- [int ppl_new_Float_Box_from_Uint8_Box_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_Uint8_Box_t ph, int complexity)
- [int ppl_new_Float_Box_from_Uint16_Box_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_Uint16_Box_t ph, int complexity)
- [int ppl_new_Float_Box_from_Uint32_Box_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_Uint32_Box_t ph, int complexity)
- [int ppl_new_Float_Box_from_Uint64_Box_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_Uint64_Box_t ph, int complexity)
- [int ppl_new_Float_Box_from_Z_Box_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_Z_Box_t ph, int complexity)
- [int ppl_new_Float_Box_from_Rational_Box_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_Rational_Box_t ph, int complexity)

- int [ppl_new_Float_Box_from_BD_Shape_int8_t_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)
- int [ppl_new_Float_Box_from_BD_Shape_int16_t_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)
- int [ppl_new_Float_Box_from_BD_Shape_int32_t_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)
- int [ppl_new_Float_Box_from_BD_Shape_int64_t_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)
- int [ppl_new_Float_Box_from_BD_Shape_mpz_class_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_Float_Box_from_BD_Shape_mpq_class_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_Float_Box_from_Octagonal_Shape_int8_t_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)
- int [ppl_new_Float_Box_from_Octagonal_Shape_int16_t_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)
- int [ppl_new_Float_Box_from_Octagonal_Shape_int32_t_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)
- int [ppl_new_Float_Box_from_Octagonal_Shape_int64_t_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)
- int [ppl_new_Float_Box_from_Octagonal_Shape_mpz_class_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_Float_Box_from_Octagonal_Shape_mpq_class_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_Float_Box_from_C_Polyhedron_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_Float_Box_from_NNC_Polyhedron_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_Float_Box_from_Grid_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_Grid_t ph, int complexity)
- int [ppl_new_Float_Box_from_Float_Box_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_Float_Box_t ph, int complexity)
- int [ppl_new_Float_Box_from_BD_Shape_float_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_BD_Shape_float_t ph, int complexity)
- int [ppl_new_Float_Box_from_Octagonal_Shape_float_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)
- int [ppl_new_Float_Box_from_Double_Box_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_Double_Box_t ph, int complexity)
- int [ppl_new_Float_Box_from_BD_Shape_double_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_BD_Shape_double_t ph, int complexity)
- int [ppl_new_Float_Box_from_Octagonal_Shape_double_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)
- int [ppl_new_Float_Box_from_Long_Double_Box_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- int [ppl_new_Float_Box_from_BD_Shape_long_double_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity)
- int [ppl_new_Float_Box_from_Octagonal_Shape_long_double_with_complexity](#) (ppl_Float_Box_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)
- int [ppl_new_Float_Box_from_Constraint_System](#) (ppl_Float_Box_t *pph, ppl_const_Constraint_System_t cs)
- int [ppl_new_Float_Box_from_Congruence_System](#) (ppl_Float_Box_t *pph, ppl_const_Congruence_System_t cs)

- int [ppl_new_Float_Box_from_Generator_System](#) (ppl_Float_Box_t *pph, ppl_const_Generator_System_t cs)
- int [ppl_Float_Box_space_dimension](#) (ppl_const_Float_Box_t ph, [ppl_dimension_type](#) *m)
- int [ppl_Float_Box_affine_dimension](#) (ppl_const_Float_Box_t ph, [ppl_dimension_type](#) *m)
- int [ppl_Float_Box_relation_with_Constraint](#) (ppl_const_Float_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Float_Box_relation_with_Generator](#) (ppl_const_Float_Box_t ph, ppl_const_Generator_t c)
- int [ppl_Float_Box_relation_with_Congruence](#) (ppl_const_Float_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Float_Box_get_constraints](#) (ppl_const_Float_Box_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_Float_Box_get_congruences](#) (ppl_const_Float_Box_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_Float_Box_get_minimized_constraints](#) (ppl_const_Float_Box_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_Float_Box_get_minimized_congruences](#) (ppl_const_Float_Box_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_Float_Box_is_empty](#) (ppl_const_Float_Box_t ph)
- int [ppl_Float_Box_is_universe](#) (ppl_const_Float_Box_t ph)
- int [ppl_Float_Box_is_bounded](#) (ppl_const_Float_Box_t ph)
- int [ppl_Float_Box_contains_integer_point](#) (ppl_const_Float_Box_t ph)
- int [ppl_Float_Box_is_topologically_closed](#) (ppl_const_Float_Box_t ph)
- int [ppl_Float_Box_is_discrete](#) (ppl_const_Float_Box_t ph)
- int [ppl_Float_Box_topological_closure_assign](#) (ppl_Float_Box_t ph)
- int [ppl_Float_Box_bounds_from_above](#) (ppl_const_Float_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Float_Box_bounds_from_below](#) (ppl_const_Float_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Float_Box_maximize](#) (ppl_const_Float_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Float_Box_minimize](#) (ppl_const_Float_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Float_Box_maximize_with_point](#) (ppl_const_Float_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Float_Box_minimize_with_point](#) (ppl_const_Float_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Float_Box_frequency](#) (ppl_const_Float_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)
- int [ppl_Float_Box_contains_Float_Box](#) (ppl_const_Float_Box_t x, ppl_const_Float_Box_t y)
- int [ppl_Float_Box_strictly_contains_Float_Box](#) (ppl_const_Float_Box_t x, ppl_const_Float_Box_t y)
- int [ppl_Float_Box_is_disjoint_from_Float_Box](#) (ppl_const_Float_Box_t x, ppl_const_Float_Box_t y)
- int [ppl_Float_Box_equals_Float_Box](#) (ppl_const_Float_Box_t x, ppl_const_Float_Box_t y)
- int [ppl_Float_Box_OK](#) (ppl_const_Float_Box_t ph)
- int [ppl_Float_Box_add_constraint](#) (ppl_Float_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Float_Box_add_congruence](#) (ppl_Float_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Float_Box_add_constraints](#) (ppl_Float_Box_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Float_Box_add_congruences](#) (ppl_Float_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Float_Box_refine_with_constraint](#) (ppl_Float_Box_t ph, ppl_const_Constraint_t c)

- int `ppl_Float_Box_refine_with_congruence` (ppl_Float_Box_t ph, ppl_const_Congruence_t c)
- int `ppl_Float_Box_refine_with_constraints` (ppl_Float_Box_t ph, ppl_const_Constraint_System_t cs)
- int `ppl_Float_Box_refine_with_congruences` (ppl_Float_Box_t ph, ppl_const_Congruence_System_t cs)
- int `ppl_Float_Box_intersection_assign` (ppl_Float_Box_t x, ppl_const_Float_Box_t y)
- int `ppl_Float_Box_upper_bound_assign` (ppl_Float_Box_t x, ppl_const_Float_Box_t y)
- int `ppl_Float_Box_difference_assign` (ppl_Float_Box_t x, ppl_const_Float_Box_t y)
- int `ppl_Float_Box_concatenate_assign` (ppl_Float_Box_t x, ppl_const_Float_Box_t y)
- int `ppl_Float_Box_time_elapse_assign` (ppl_Float_Box_t x, ppl_const_Float_Box_t y)
- int `ppl_Float_Box_upper_bound_assign_if_exact` (ppl_Float_Box_t x, ppl_const_Float_Box_t y)
- int `ppl_Float_Box_simplify_using_context_assign` (ppl_Float_Box_t x, ppl_const_Float_Box_t y)
- int `ppl_Float_Box_constrains` (ppl_Float_Box_t ph, ppl_dimension_type var)
- int `ppl_Float_Box_unconstrain_space_dimension` (ppl_Float_Box_t ph, ppl_dimension_type var)
- int `ppl_Float_Box_unconstrain_space_dimensions` (ppl_Float_Box_t ph, ppl_dimension_type ds[], size_t n)
- int `ppl_Float_Box_affine_image` (ppl_Float_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int `ppl_Float_Box_affine_preimage` (ppl_Float_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int `ppl_Float_Box_bounded_affine_image` (ppl_Float_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int `ppl_Float_Box_bounded_affine_preimage` (ppl_Float_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int `ppl_Float_Box_generalized_affine_image` (ppl_Float_Box_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int `ppl_Float_Box_generalized_affine_preimage` (ppl_Float_Box_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int `ppl_Float_Box_generalized_affine_image_lhs_rhs` (ppl_Float_Box_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)
- int `ppl_Float_Box_generalized_affine_preimage_lhs_rhs` (ppl_Float_Box_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)
- int `ppl_Float_Box_add_space_dimensions_and_embed` (ppl_Float_Box_t ph, ppl_dimension_type d)
- int `ppl_Float_Box_add_space_dimensions_and_project` (ppl_Float_Box_t ph, ppl_dimension_type d)
- int `ppl_Float_Box_remove_space_dimensions` (ppl_Float_Box_t ph, ppl_dimension_type ds[], size_t n)
- int `ppl_Float_Box_remove_higher_space_dimensions` (ppl_Float_Box_t ph, ppl_dimension_type d)
- int `ppl_Float_Box_expand_space_dimension` (ppl_Float_Box_t ph, ppl_dimension_type d, ppl_dimension_type m)
- int `ppl_Float_Box_fold_space_dimensions` (ppl_Float_Box_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)
- int `ppl_Float_Box_map_space_dimensions` (ppl_Float_Box_t ph, ppl_dimension_type maps[], size_t n)
- int `ppl_Float_Box_drop_some_non_integer_points` (ppl_Float_Box_t ph, int complexity)
- int `ppl_Float_Box_drop_some_non_integer_points_2` (ppl_Float_Box_t ph, ppl_dimension_type ds[], size_t n, int complexity)
- int `ppl_Float_Box_external_memory_in_bytes` (ppl_const_Float_Box_t ps, size_t *sz)
- int `ppl_Float_Box_total_memory_in_bytes` (ppl_const_Float_Box_t ps, size_t *sz)

- int [ppl_Float_Box_CC76_widening_assign_with_tokens](#) (ppl_Float_Box_t x, ppl_const_Float_Box_t y, unsigned *tp)
- int [ppl_Float_Box_CC76_widening_assign](#) (ppl_Float_Box_t x, ppl_const_Float_Box_t y)
- int [ppl_Float_Box_widening_assign_with_tokens](#) (ppl_Float_Box_t x, ppl_const_Float_Box_t y, unsigned *tp)
- int [ppl_Float_Box_widening_assign](#) (ppl_Float_Box_t x, ppl_const_Float_Box_t y)
- int [ppl_Float_Box_limited_CC76_extrapolation_assign_with_tokens](#) (ppl_Float_Box_t x, ppl_const_Float_Box_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- int [ppl_Float_Box_limited_CC76_extrapolation_assign](#) (ppl_Float_Box_t x, ppl_const_Float_Box_t y, ppl_const_Constraint_System_t cs)
- int [ppl_Float_Box_linear_partition](#) (ppl_const_Float_Box_t x, ppl_const_Float_Box_t y, ppl_Float_Box_t *p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest)
- int [ppl_Float_Box_wrap_assign](#) (ppl_Float_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, enum [ppl_enum_Bounded_Integer_Type_Width](#) w, enum [ppl_enum_Bounded_Integer_Type_Representation](#) r, enum [ppl_enum_Bounded_Integer_Type_Overflow](#) o, const ppl_const_Constraint_System_t *pcs, unsigned complexity_threshold, int wrap_individually)
- int [ppl_new_Float_Box_recycle_Constraint_System](#) (ppl_Float_Box_t *pph, ppl_Constraint_System_t cs)
- int [ppl_new_Float_Box_recycle_Congruence_System](#) (ppl_Float_Box_t *pph, ppl_Congruence_System_t cs)
- int [ppl_new_Float_Box_recycle_Generator_System](#) (ppl_Float_Box_t *pph, ppl_Generator_System_t cs)
- int [ppl_assign_Float_Box_from_Float_Box](#) (ppl_Float_Box_t dst, ppl_const_Float_Box_t src)
- int [ppl_Float_Box_add_recycled_constraints](#) (ppl_Float_Box_t ph, ppl_Constraint_System_t cs)
- int [ppl_Float_Box_add_recycled_congruences](#) (ppl_Float_Box_t ph, ppl_Congruence_System_t cs)
- int [ppl_termination_test_MS_Float_Box](#) (ppl_const_Float_Box_t pset)
- int [ppl_termination_test_PR_Float_Box](#) (ppl_const_Float_Box_t pset)
- int [ppl_one_affine_ranking_function_MS_Float_Box](#) (ppl_const_Float_Box_t pset, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_Float_Box](#) (ppl_const_Float_Box_t pset, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_Float_Box](#) (ppl_const_Float_Box_t pset, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_Float_Box](#) (ppl_const_Float_Box_t pset, ppl_Polyhedron_t ph)
- int [ppl_termination_test_MS_Float_Box_2](#) (ppl_const_Float_Box_t pset_before, ppl_const_Float_Box_t pset_after)
- int [ppl_termination_test_PR_Float_Box_2](#) (ppl_const_Float_Box_t pset_before, ppl_const_Float_Box_t pset_after)
- int [ppl_one_affine_ranking_function_MS_Float_Box_2](#) (ppl_const_Float_Box_t pset_before, ppl_const_Float_Box_t pset_after, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_Float_Box_2](#) (ppl_const_Float_Box_t pset_before, ppl_const_Float_Box_t pset_after, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_Float_Box_2](#) (ppl_const_Float_Box_t pset_before, ppl_const_Float_Box_t pset_after, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_Float_Box_2](#) (ppl_const_Float_Box_t pset_before, ppl_const_Float_Box_t pset_after, ppl_Polyhedron_t ph)

10.26.1 Detailed Description

Types and functions for [ppl_Float_Box_tag](#).

10.26.2 Friends And Related Function Documentation

10.26.2.1 `int ppl_all_affine_ranking_functions_MS_Float_Box (ppl_const_Float_Box_t pset,
ppl_Polyhedron_t ph)` [**related**]

10.26.2.2 `int ppl_all_affine_ranking_functions_MS_Float_Box_2 (ppl_const_Float_Box_t
pset_before, ppl_const_Float_Box_t pset_after, ppl_Polyhedron_t ph)` [**related**]

10.26.2.3 `int ppl_all_affine_ranking_functions_PR_Float_Box (ppl_const_Float_Box_t pset,
ppl_Polyhedron_t ph)` [**related**]

10.26.2.4 `int ppl_all_affine_ranking_functions_PR_Float_Box_2 (ppl_const_Float_Box_t
pset_before, ppl_const_Float_Box_t pset_after, ppl_Polyhedron_t ph)` [**related**]

10.26.2.5 `int ppl_assign_Float_Box_from_Float_Box (ppl_Float_Box_t dst,
ppl_const_Float_Box_t src)` [**related**]

10.26.2.6 `int ppl_delete_Float_Box (ppl_const_Float_Box_t ph)` [**related**]

10.26.2.7 `int ppl_Float_Box_add_congruence (ppl_Float_Box_t ph, ppl_const_Congruence_t c)`
[**related**]

10.26.2.8 `int ppl_Float_Box_add_congruences (ppl_Float_Box_t ph,
ppl_const_Congruence_System_t cs)` [**related**]

10.26.2.9 `int ppl_Float_Box_add_constraint (ppl_Float_Box_t ph, ppl_const_Constraint_t c)`
[**related**]

- 10.26.2.10 `int ppl_Float_Box_add_constraints (ppl_Float_Box_t ph,
ppl_const_Constraint_System_t cs)` [`related`]

- 10.26.2.11 `int ppl_Float_Box_add_recycled_congruences (ppl_Float_Box_t ph,
ppl_Congruence_System_t cs)` [`related`]

- 10.26.2.12 `int ppl_Float_Box_add_recycled_constraints (ppl_Float_Box_t ph,
ppl_Constraint_System_t cs)` [`related`]

- 10.26.2.13 `int ppl_Float_Box_add_space_dimensions_and_embed (ppl_Float_Box_t ph,
ppl_dimension_type d)` [`related`]

- 10.26.2.14 `int ppl_Float_Box_add_space_dimensions_and_project (ppl_Float_Box_t ph,
ppl_dimension_type d)` [`related`]

- 10.26.2.15 `int ppl_Float_Box_affine_dimension (ppl_const_Float_Box_t ph, ppl_dimension_type
* m)` [`related`]

- 10.26.2.16 `int ppl_Float_Box_affine_image (ppl_Float_Box_t ph, ppl_dimension_type var,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]

- 10.26.2.17 `int ppl_Float_Box_affine_preimage (ppl_Float_Box_t ph, ppl_dimension_type var,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]

- 10.26.2.18 `int ppl_Float_Box_bounded_affine_image (ppl_Float_Box_t ph, ppl_dimension_type
var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub,
ppl_const_Coefficient_t d)` [`related`]

- 10.26.2.19** `int ppl_Float_Box_bounded_affine_preimage (ppl_Float_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [**related**]
- 10.26.2.20** `int ppl_Float_Box_bounds_from_above (ppl_const_Float_Box_t ph, ppl_const_Linear_Expression_t le)` [**related**]
- 10.26.2.21** `int ppl_Float_Box_bounds_from_below (ppl_const_Float_Box_t ph, ppl_const_Linear_Expression_t le)` [**related**]
- 10.26.2.22** `int ppl_Float_Box_CC76_widening_assign (ppl_Float_Box_t x, ppl_const_Float_Box_t y)` [**related**]
- 10.26.2.23** `int ppl_Float_Box_CC76_widening_assign_with_tokens (ppl_Float_Box_t x, ppl_const_Float_Box_t y, unsigned * tp)` [**related**]
- 10.26.2.24** `int ppl_Float_Box_concatenate_assign (ppl_Float_Box_t x, ppl_const_Float_Box_t y)` [**related**]
- 10.26.2.25** `int ppl_Float_Box_constrains (ppl_Float_Box_t ph, ppl_dimension_type var)` [**related**]
- 10.26.2.26** `int ppl_Float_Box_contains_Float_Box (ppl_const_Float_Box_t x, ppl_const_Float_Box_t y)` [**related**]
- 10.26.2.27** `int ppl_Float_Box_contains_integer_point (ppl_const_Float_Box_t ph)` [**related**]

- 10.26.2.28 `int ppl_Float_Box_difference_assign (ppl_Float_Box_t x, ppl_const_Float_Box_t y)`
[related]
- 10.26.2.29 `int ppl_Float_Box_drop_some_non_integer_points (ppl_Float_Box_t ph, int complexity)` [related]
- 10.26.2.30 `int ppl_Float_Box_drop_some_non_integer_points_2 (ppl_Float_Box_t ph, ppl_dimension_type ds[], size_t n, int complexity)` [related]
- 10.26.2.31 `int ppl_Float_Box_equals_Float_Box (ppl_const_Float_Box_t x, ppl_const_Float_Box_t y)` [related]
- 10.26.2.32 `int ppl_Float_Box_expand_space_dimension (ppl_Float_Box_t ph, ppl_dimension_type d, ppl_dimension_type m)` [related]
- 10.26.2.33 `int ppl_Float_Box_external_memory_in_bytes (ppl_const_Float_Box_t ps, size_t * sz)`
[related]
- 10.26.2.34 `int ppl_Float_Box_fold_space_dimensions (ppl_Float_Box_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [related]
- 10.26.2.35 `int ppl_Float_Box_frequency (ppl_const_Float_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)` [related]
- 10.26.2.36 `int ppl_Float_Box_generalized_affine_image (ppl_Float_Box_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [related]

- 10.26.2.37 `int ppl_Float_Box_generalized_affine_image_lhs_rhs (ppl_Float_Box_t ph,
ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relysym,
ppl_const_Linear_Expression_t rhs)` [`related`]
- 10.26.2.38 `int ppl_Float_Box_generalized_affine_preimage (ppl_Float_Box_t ph,
ppl_dimension_type var, enum ppl_enum_Constraint_Type relysym,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.26.2.39 `int ppl_Float_Box_generalized_affine_preimage_lhs_rhs (ppl_Float_Box_t ph,
ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relysym,
ppl_const_Linear_Expression_t rhs)` [`related`]
- 10.26.2.40 `int ppl_Float_Box_get_congruences (ppl_const_Float_Box_t ph,
ppl_const_Congruence_System_t * pcs)` [`related`]
- 10.26.2.41 `int ppl_Float_Box_get_constraints (ppl_const_Float_Box_t ph,
ppl_const_Constraint_System_t * pcs)` [`related`]
- 10.26.2.42 `int ppl_Float_Box_get_minimized_congruences (ppl_const_Float_Box_t ph,
ppl_const_Congruence_System_t * pcs)` [`related`]
- 10.26.2.43 `int ppl_Float_Box_get_minimized_constraints (ppl_const_Float_Box_t ph,
ppl_const_Constraint_System_t * pcs)` [`related`]
- 10.26.2.44 `int ppl_Float_Box_intersection_assign (ppl_Float_Box_t x, ppl_const_Float_Box_t y)`
[`related`]
- 10.26.2.45 `int ppl_Float_Box_is_bounded (ppl_const_Float_Box_t ph)` [`related`]

- 10.26.2.46 `int ppl_Float_Box_is_discrete (ppl_const_Float_Box_t ph)` [**related**]
- 10.26.2.47 `int ppl_Float_Box_is_disjoint_from_Float_Box (ppl_const_Float_Box_t x,
ppl_const_Float_Box_t y)` [**related**]
- 10.26.2.48 `int ppl_Float_Box_is_empty (ppl_const_Float_Box_t ph)` [**related**]
- 10.26.2.49 `int ppl_Float_Box_is_topologically_closed (ppl_const_Float_Box_t ph)` [**related**]
- 10.26.2.50 `int ppl_Float_Box_is_universe (ppl_const_Float_Box_t ph)` [**related**]
- 10.26.2.51 `int ppl_Float_Box_limited_CC76_extrapolation_assign (ppl_Float_Box_t x,
ppl_const_Float_Box_t y, ppl_const_Constraint_System_t cs)` [**related**]
- 10.26.2.52 `int ppl_Float_Box_limited_CC76_extrapolation_assign_with_tokens (ppl_Float_Box_t
x, ppl_const_Float_Box_t y, ppl_const_Constraint_System_t cs, unsigned * tp)`
[**related**]
- 10.26.2.53 `int ppl_Float_Box_linear_partition (ppl_const_Float_Box_t x, ppl_const_Float_Box_t
y, ppl_Float_Box_t * p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t * p_rest)`
[**related**]
- 10.26.2.54 `int ppl_Float_Box_map_space_dimensions (ppl_Float_Box_t ph, ppl_dimension_type
maps[], size_t n)` [**related**]
- 10.26.2.55 `int ppl_Float_Box_maximize (ppl_const_Float_Box_t ph, ppl_const_Linear_Expression_t
le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)`
[**related**]

- 10.26.2.56 `int ppl_Float_Box_maximize_with_point (ppl_const_Float_Box_t ph,
ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d,
int * poptimum, ppl_Generator_t point)` [`related`]
- 10.26.2.57 `int ppl_Float_Box_minimize (ppl_const_Float_Box_t ph, ppl_const_Linear_Expression_t le,
ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [`related`]
- 10.26.2.58 `int ppl_Float_Box_minimize_with_point (ppl_const_Float_Box_t ph,
ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d,
int * poptimum, ppl_Generator_t point)` [`related`]
- 10.26.2.59 `int ppl_Float_Box_OK (ppl_const_Float_Box_t ph)` [`related`]
- 10.26.2.60 `int ppl_Float_Box_refine_with_congruence (ppl_Float_Box_t ph,
ppl_const_Congruence_t c)` [`related`]
- 10.26.2.61 `int ppl_Float_Box_refine_with_congruences (ppl_Float_Box_t ph,
ppl_const_Congruence_System_t cs)` [`related`]
- 10.26.2.62 `int ppl_Float_Box_refine_with_constraint (ppl_Float_Box_t ph,
ppl_const_Constraint_t c)` [`related`]
- 10.26.2.63 `int ppl_Float_Box_refine_with_constraints (ppl_Float_Box_t ph,
ppl_const_Constraint_System_t cs)` [`related`]
- 10.26.2.64 `int ppl_Float_Box_relation_with_Congruence (ppl_const_Float_Box_t ph,
ppl_const_Congruence_t c)` [`related`]

- 10.26.2.65 `int ppl_Float_Box_relation_with_Constraint (ppl_const_Float_Box_t ph,
ppl_const_Constraint_t c)` [`related`]
- 10.26.2.66 `int ppl_Float_Box_relation_with_Generator (ppl_const_Float_Box_t ph,
ppl_const_Generator_t c)` [`related`]
- 10.26.2.67 `int ppl_Float_Box_remove_higher_space_dimensions (ppl_Float_Box_t ph,
ppl_dimension_type d)` [`related`]
- 10.26.2.68 `int ppl_Float_Box_remove_space_dimensions (ppl_Float_Box_t ph,
ppl_dimension_type ds[], size_t n)` [`related`]
- 10.26.2.69 `int ppl_Float_Box_simplify_using_context_assign (ppl_Float_Box_t x,
ppl_const_Float_Box_t y)` [`related`]
- 10.26.2.70 `int ppl_Float_Box_space_dimension (ppl_const_Float_Box_t ph, ppl_dimension_type *
m)` [`related`]
- 10.26.2.71 `int ppl_Float_Box_strictly_contains_Float_Box (ppl_const_Float_Box_t x,
ppl_const_Float_Box_t y)` [`related`]
- 10.26.2.72 `int ppl_Float_Box_time_elapse_assign (ppl_Float_Box_t x, ppl_const_Float_Box_t y)`
[`related`]
- 10.26.2.73 `int ppl_Float_Box_topological_closure_assign (ppl_Float_Box_t ph)` [`related`]
- 10.26.2.74 `int ppl_Float_Box_total_memory_in_bytes (ppl_const_Float_Box_t ps, size_t * sz)`
[`related`]

- 10.26.2.75** `int ppl_Float_Box_unconstrain_space_dimension (ppl_Float_Box_t ph,
ppl_dimension_type var)` [**related**]
- 10.26.2.76** `int ppl_Float_Box_unconstrain_space_dimensions (ppl_Float_Box_t ph,
ppl_dimension_type ds[], size_t n)` [**related**]
- 10.26.2.77** `int ppl_Float_Box_upper_bound_assign (ppl_Float_Box_t x, ppl_const_Float_Box_t y)`
[**related**]
- 10.26.2.78** `int ppl_Float_Box_upper_bound_assign_if_exact (ppl_Float_Box_t x,
ppl_const_Float_Box_t y)` [**related**]
- 10.26.2.79** `int ppl_Float_Box_widening_assign (ppl_Float_Box_t x, ppl_const_Float_Box_t y)`
[**related**]
- 10.26.2.80** `int ppl_Float_Box_widening_assign_with_tokens (ppl_Float_Box_t x,
ppl_const_Float_Box_t y, unsigned *tp)` [**related**]
- 10.26.2.81** `int ppl_Float_Box_wrap_assign (ppl_Float_Box_t ph, ppl_dimension_type
ds[], size_t n, enum ppl_enum_Bounded_Integer_Type_Width w,
enum ppl_enum_Bounded_Integer_Type_Representation r, enum
ppl_enum_Bounded_Integer_Type_Overflow o, const ppl_const_Constraint_System_t
*pcs, unsigned complexity_threshold, int wrap_individually)` [**related**]
- 10.26.2.82** `int ppl_new_Float_Box_from_BD_Shape_double (ppl_Float_Box_t *pph,
ppl_const_BD_Shape_double_t ph)` [**related**]
- 10.26.2.83** `int ppl_new_Float_Box_from_BD_Shape_double_with_complexity (ppl_Float_Box_t *
pph, ppl_const_BD_Shape_double_t ph, int complexity)` [**related**]

- 10.26.2.84 `int ppl_new_Float_Box_from_BD_Shape_float (ppl_Float_Box_t * pph,
ppl_const_BD_Shape_float_t ph)` [`related`]
- 10.26.2.85 `int ppl_new_Float_Box_from_BD_Shape_float_with_complexity (ppl_Float_Box_t *
pph, ppl_const_BD_Shape_float_t ph, int complexity)` [`related`]
- 10.26.2.86 `int ppl_new_Float_Box_from_BD_Shape_int16_t (ppl_Float_Box_t * pph,
ppl_const_BD_Shape_int16_t_t ph)` [`related`]
- 10.26.2.87 `int ppl_new_Float_Box_from_BD_Shape_int16_t_with_complexity (ppl_Float_Box_t *
pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)` [`related`]
- 10.26.2.88 `int ppl_new_Float_Box_from_BD_Shape_int32_t (ppl_Float_Box_t * pph,
ppl_const_BD_Shape_int32_t_t ph)` [`related`]
- 10.26.2.89 `int ppl_new_Float_Box_from_BD_Shape_int32_t_with_complexity (ppl_Float_Box_t *
pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)` [`related`]
- 10.26.2.90 `int ppl_new_Float_Box_from_BD_Shape_int64_t (ppl_Float_Box_t * pph,
ppl_const_BD_Shape_int64_t_t ph)` [`related`]
- 10.26.2.91 `int ppl_new_Float_Box_from_BD_Shape_int64_t_with_complexity (ppl_Float_Box_t *
pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)` [`related`]
- 10.26.2.92 `int ppl_new_Float_Box_from_BD_Shape_int8_t (ppl_Float_Box_t * pph,
ppl_const_BD_Shape_int8_t_t ph)` [`related`]

- 10.26.2.93 `int ppl_new_Float_Box_from_BD_Shape_int8_t_with_complexity (ppl_Float_Box_t * pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)` [related]
- 10.26.2.94 `int ppl_new_Float_Box_from_BD_Shape_long_double (ppl_Float_Box_t * pph, ppl_const_BD_Shape_long_double_t ph)` [related]
- 10.26.2.95 `int ppl_new_Float_Box_from_BD_Shape_long_double_with_complexity (ppl_Float_Box_t * pph, ppl_const_BD_Shape_long_double_t ph, int complexity)` [related]
- 10.26.2.96 `int ppl_new_Float_Box_from_BD_Shape_mpq_class (ppl_Float_Box_t * pph, ppl_const_BD_Shape_mpq_class_t ph)` [related]
- 10.26.2.97 `int ppl_new_Float_Box_from_BD_Shape_mpq_class_with_complexity (ppl_Float_Box_t * pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)` [related]
- 10.26.2.98 `int ppl_new_Float_Box_from_BD_Shape_mpz_class (ppl_Float_Box_t * pph, ppl_const_BD_Shape_mpz_class_t ph)` [related]
- 10.26.2.99 `int ppl_new_Float_Box_from_BD_Shape_mpz_class_with_complexity (ppl_Float_Box_t * pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)` [related]
- 10.26.2.100 `int ppl_new_Float_Box_from_C_Polyhedron (ppl_Float_Box_t * pph, ppl_const_Polyhedron_t ph)` [related]
- 10.26.2.101 `int ppl_new_Float_Box_from_C_Polyhedron_with_complexity (ppl_Float_Box_t * pph, ppl_const_Polyhedron_t ph, int complexity)` [related]

- 10.26.2.102 `int ppl_new_Float_Box_from_Congruence_System (ppl_Float_Box_t * pph,
ppl_const_Congruence_System_t cs)` [`related`]
- 10.26.2.103 `int ppl_new_Float_Box_from_Constraint_System (ppl_Float_Box_t * pph,
ppl_const_Constraint_System_t cs)` [`related`]
- 10.26.2.104 `int ppl_new_Float_Box_from_Double_Box (ppl_Float_Box_t * pph,
ppl_const_Double_Box_t ph)` [`related`]
- 10.26.2.105 `int ppl_new_Float_Box_from_Double_Box_with_complexity (ppl_Float_Box_t * pph,
ppl_const_Double_Box_t ph, int complexity)` [`related`]
- 10.26.2.106 `int ppl_new_Float_Box_from_Float_Box (ppl_Float_Box_t * pph,
ppl_const_Float_Box_t ph)` [`related`]
- 10.26.2.107 `int ppl_new_Float_Box_from_Float_Box_with_complexity (ppl_Float_Box_t * pph,
ppl_const_Float_Box_t ph, int complexity)` [`related`]
- 10.26.2.108 `int ppl_new_Float_Box_from_Generator_System (ppl_Float_Box_t * pph,
ppl_const_Generator_System_t cs)` [`related`]
- 10.26.2.109 `int ppl_new_Float_Box_from_Grid (ppl_Float_Box_t * pph, ppl_const_Grid_t ph)`
[`related`]
- 10.26.2.110 `int ppl_new_Float_Box_from_Grid_with_complexity (ppl_Float_Box_t * pph,
ppl_const_Grid_t ph, int complexity)` [`related`]

- 10.26.2.111 `int ppl_new_Float_Box_from_Int16_Box (ppl_Float_Box_t * pph,
ppl_const_Int16_Box_t ph)` [`related`]
- 10.26.2.112 `int ppl_new_Float_Box_from_Int16_Box_with_complexity (ppl_Float_Box_t * pph,
ppl_const_Int16_Box_t ph, int complexity)` [`related`]
- 10.26.2.113 `int ppl_new_Float_Box_from_Int32_Box (ppl_Float_Box_t * pph,
ppl_const_Int32_Box_t ph)` [`related`]
- 10.26.2.114 `int ppl_new_Float_Box_from_Int32_Box_with_complexity (ppl_Float_Box_t * pph,
ppl_const_Int32_Box_t ph, int complexity)` [`related`]
- 10.26.2.115 `int ppl_new_Float_Box_from_Int64_Box (ppl_Float_Box_t * pph,
ppl_const_Int64_Box_t ph)` [`related`]
- 10.26.2.116 `int ppl_new_Float_Box_from_Int64_Box_with_complexity (ppl_Float_Box_t * pph,
ppl_const_Int64_Box_t ph, int complexity)` [`related`]
- 10.26.2.117 `int ppl_new_Float_Box_from_Int8_Box (ppl_Float_Box_t * pph,
ppl_const_Int8_Box_t ph)` [`related`]
- 10.26.2.118 `int ppl_new_Float_Box_from_Int8_Box_with_complexity (ppl_Float_Box_t * pph,
ppl_const_Int8_Box_t ph, int complexity)` [`related`]
- 10.26.2.119 `int ppl_new_Float_Box_from_Long_Double_Box (ppl_Float_Box_t * pph,
ppl_const_Long_Double_Box_t ph)` [`related`]

- 10.26.2.120 `int ppl_new_Float_Box_from_Long_Double_Box_with_complexity (ppl_Float_Box_t * pph, ppl_const_Long_Double_Box_t ph, int complexity)` [`related`]
- 10.26.2.121 `int ppl_new_Float_Box_from_NNC_Polyhedron (ppl_Float_Box_t * pph, ppl_const_Polyhedron_t ph)` [`related`]
- 10.26.2.122 `int ppl_new_Float_Box_from_NNC_Polyhedron_with_complexity (ppl_Float_Box_t * pph, ppl_const_Polyhedron_t ph, int complexity)` [`related`]
- 10.26.2.123 `int ppl_new_Float_Box_from_Octagonal_Shape_double (ppl_Float_Box_t * pph, ppl_const_Octagonal_Shape_double_t ph)` [`related`]
- 10.26.2.124 `int ppl_new_Float_Box_from_Octagonal_Shape_double_with_complexity (ppl_Float_Box_t * pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)` [`related`]
- 10.26.2.125 `int ppl_new_Float_Box_from_Octagonal_Shape_float (ppl_Float_Box_t * pph, ppl_const_Octagonal_Shape_float_t ph)` [`related`]
- 10.26.2.126 `int ppl_new_Float_Box_from_Octagonal_Shape_float_with_complexity (ppl_Float_Box_t * pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)` [`related`]
- 10.26.2.127 `int ppl_new_Float_Box_from_Octagonal_Shape_int16_t (ppl_Float_Box_t * pph, ppl_const_Octagonal_Shape_int16_t ph)` [`related`]
- 10.26.2.128 `int ppl_new_Float_Box_from_Octagonal_Shape_int16_t_with_complexity (ppl_Float_Box_t * pph, ppl_const_Octagonal_Shape_int16_t ph, int complexity)` [`related`]

- 10.26.2.129 `int ppl_new_Float_Box_from_Octagonal_Shape_int32_t (ppl_Float_Box_t * pph,
ppl_const_Octagonal_Shape_int32_t_t ph)` [`related`]
- 10.26.2.130 `int ppl_new_Float_Box_from_Octagonal_Shape_int32_t_with_complexity
(ppl_Float_Box_t * pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)`
[`related`]
- 10.26.2.131 `int ppl_new_Float_Box_from_Octagonal_Shape_int64_t (ppl_Float_Box_t * pph,
ppl_const_Octagonal_Shape_int64_t_t ph)` [`related`]
- 10.26.2.132 `int ppl_new_Float_Box_from_Octagonal_Shape_int64_t_with_complexity
(ppl_Float_Box_t * pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)`
[`related`]
- 10.26.2.133 `int ppl_new_Float_Box_from_Octagonal_Shape_int8_t (ppl_Float_Box_t * pph,
ppl_const_Octagonal_Shape_int8_t_t ph)` [`related`]
- 10.26.2.134 `int ppl_new_Float_Box_from_Octagonal_Shape_int8_t_with_complexity
(ppl_Float_Box_t * pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)`
[`related`]
- 10.26.2.135 `int ppl_new_Float_Box_from_Octagonal_Shape_long_double (ppl_Float_Box_t * pph,
ppl_const_Octagonal_Shape_long_double_t ph)` [`related`]
- 10.26.2.136 `int ppl_new_Float_Box_from_Octagonal_Shape_long_double_with_complexity
(ppl_Float_Box_t * pph, ppl_const_Octagonal_Shape_long_double_t ph, int
complexity)` [`related`]
- 10.26.2.137 `int ppl_new_Float_Box_from_Octagonal_Shape_mpq_class (ppl_Float_Box_t * pph,
ppl_const_Octagonal_Shape_mpq_class_t ph)` [`related`]

- 10.26.2.138 `int ppl_new_Float_Box_from_Octagonal_Shape_mpq_class_with_complexity`
(`ppl_Float_Box_t * pph`, `ppl_const_Octagonal_Shape_mpq_class_t ph`, `int complexity`) [`related`]
- 10.26.2.139 `int ppl_new_Float_Box_from_Octagonal_Shape_mpz_class` (`ppl_Float_Box_t * pph`,
`ppl_const_Octagonal_Shape_mpz_class_t ph`) [`related`]
- 10.26.2.140 `int ppl_new_Float_Box_from_Octagonal_Shape_mpz_class_with_complexity`
(`ppl_Float_Box_t * pph`, `ppl_const_Octagonal_Shape_mpz_class_t ph`, `int complexity`)
[`related`]
- 10.26.2.141 `int ppl_new_Float_Box_from_Rational_Box` (`ppl_Float_Box_t * pph`,
`ppl_const_Rational_Box_t ph`) [`related`]
- 10.26.2.142 `int ppl_new_Float_Box_from_Rational_Box_with_complexity` (`ppl_Float_Box_t *`
`pph`, `ppl_const_Rational_Box_t ph`, `int complexity`) [`related`]
- 10.26.2.143 `int ppl_new_Float_Box_from_space_dimension` (`ppl_Float_Box_t * pph`,
`ppl_dimension_type d`, `int empty`) [`related`]
- 10.26.2.144 `int ppl_new_Float_Box_from_Uint16_Box` (`ppl_Float_Box_t * pph`,
`ppl_const_Uint16_Box_t ph`) [`related`]
- 10.26.2.145 `int ppl_new_Float_Box_from_Uint16_Box_with_complexity` (`ppl_Float_Box_t * pph`,
`ppl_const_Uint16_Box_t ph`, `int complexity`) [`related`]
- 10.26.2.146 `int ppl_new_Float_Box_from_Uint32_Box` (`ppl_Float_Box_t * pph`,
`ppl_const_Uint32_Box_t ph`) [`related`]

- 10.26.2.147 `int ppl_new_Float_Box_from_Uint32_Box_with_complexity (ppl_Float_Box_t * pph,
ppl_const_Uint32_Box_t ph, int complexity)` [`related`]
- 10.26.2.148 `int ppl_new_Float_Box_from_Uint64_Box (ppl_Float_Box_t * pph,
ppl_const_Uint64_Box_t ph)` [`related`]
- 10.26.2.149 `int ppl_new_Float_Box_from_Uint64_Box_with_complexity (ppl_Float_Box_t * pph,
ppl_const_Uint64_Box_t ph, int complexity)` [`related`]
- 10.26.2.150 `int ppl_new_Float_Box_from_Uint8_Box (ppl_Float_Box_t * pph,
ppl_const_Uint8_Box_t ph)` [`related`]
- 10.26.2.151 `int ppl_new_Float_Box_from_Uint8_Box_with_complexity (ppl_Float_Box_t * pph,
ppl_const_Uint8_Box_t ph, int complexity)` [`related`]
- 10.26.2.152 `int ppl_new_Float_Box_from_Z_Box (ppl_Float_Box_t * pph, ppl_const_Z_Box_t ph)`
[`related`]
- 10.26.2.153 `int ppl_new_Float_Box_from_Z_Box_with_complexity (ppl_Float_Box_t * pph,
ppl_const_Z_Box_t ph, int complexity)` [`related`]
- 10.26.2.154 `int ppl_new_Float_Box_recycle_Congruence_System (ppl_Float_Box_t * pph,
ppl_Congruence_System_t cs)` [`related`]
- 10.26.2.155 `int ppl_new_Float_Box_recycle_Constraint_System (ppl_Float_Box_t * pph,
ppl_Constraint_System_t cs)` [`related`]

- 10.26.2.156 `int ppl_new_Float_Box_recycle_Generator_System (ppl_Float_Box_t * pph,
ppl_Generator_System_t cs)` [`related`]
- 10.26.2.157 `int ppl_one_affine_ranking_function_MS_Float_Box (ppl_const_Float_Box_t pset,
ppl_Generator_t point)` [`related`]
- 10.26.2.158 `int ppl_one_affine_ranking_function_MS_Float_Box_2 (ppl_const_Float_Box_t
pset_before, ppl_const_Float_Box_t pset_after, ppl_Generator_t point)` [`related`]
- 10.26.2.159 `int ppl_one_affine_ranking_function_PR_Float_Box (ppl_const_Float_Box_t pset,
ppl_Generator_t point)` [`related`]
- 10.26.2.160 `int ppl_one_affine_ranking_function_PR_Float_Box_2 (ppl_const_Float_Box_t
pset_before, ppl_const_Float_Box_t pset_after, ppl_Generator_t point)` [`related`]
- 10.26.2.161 `int ppl_termination_test_MS_Float_Box (ppl_const_Float_Box_t pset)` [`related`]
- 10.26.2.162 `int ppl_termination_test_MS_Float_Box_2 (ppl_const_Float_Box_t pset_before,
ppl_const_Float_Box_t pset_after)` [`related`]
- 10.26.2.163 `int ppl_termination_test_PR_Float_Box (ppl_const_Float_Box_t pset)` [`related`]
- 10.26.2.164 `int ppl_termination_test_PR_Float_Box_2 (ppl_const_Float_Box_t pset_before,
ppl_const_Float_Box_t pset_after)` [`related`]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.27 ppl_Generator_System_const_iterator_tag Interface Reference

Types and functions for iterating on generator systems.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

Constructors, Assignment and Destructor

- `int ppl_new_Generator_System_const_iterator (ppl_Generator_System_const_iterator_t *pgit)`
Builds a new 'const iterator' and writes a handle to it at address `pgit`.
- `int ppl_new_Generator_System_const_iterator_from_Generator_System_const_iterator (ppl_Generator_System_const_iterator_t *pgit, ppl_const_Generator_System_const_iterator_t git)`
Builds a const iterator that is a copy of `git`; writes a handle for the newly created const iterator at address `pgit`.
- `int ppl_assign_Generator_System_const_iterator_from_Generator_System_const_iterator (ppl_Generator_System_const_iterator_t dst, ppl_const_Generator_System_const_iterator_t src)`
Assigns a copy of the const iterator `src` to `dst`.
- `int ppl_delete_Generator_System_const_iterator (ppl_const_Generator_System_const_iterator_t git)`
Invalidates the handle `git`: this makes sure the corresponding resources will eventually be released.

Dereferencing, Incrementing and Equality Testing

- `int ppl_Generator_System_const_iterator_dereference (ppl_const_Generator_System_const_iterator_t git, ppl_const_Generator_t *pg)`
Dereference `git` writing a const handle to the resulting generator at address `pg`.
- `int ppl_Generator_System_const_iterator_increment (ppl_Generator_System_const_iterator_t git)`
Increment `git` so that it "points" to the next generator.
- `int ppl_Generator_System_const_iterator_equal_test (ppl_const_Generator_System_const_iterator_t x, ppl_const_Generator_System_const_iterator_t y)`
Returns a positive integer if the iterators corresponding to `x` and `y` are equal; returns 0 if they are different.

10.27.1 Detailed Description

Types and functions for iterating on generator systems. The types and functions for generator systems iterators provide read-only access to the elements of a generator system by interfacing `Generator_System::const_iterator`.

10.27.2 Friends And Related Function Documentation

10.27.2.1 `int ppl_assign_Generator_System_const_iterator_from_Generator_System_const_iterator (ppl_Generator_System_const_iterator_t dst, ppl_const_Generator_System_const_iterator_t src) [related]`

Assigns a copy of the const iterator `src` to `dst`.

Definition at line 1206 of file `ppl_c_implementation_common.cc`.

10.27.2.2 `int ppl_delete_Generator_System_const_iterator (ppl_const_Generator_System_const_iterator_t git) [related]`

Invalidates the handle `git`: this makes sure the corresponding resources will eventually be released.

Definition at line 1198 of file `ppl_c_implementation_common.cc`.

10.27.2.3 `int ppl_Generator_System_const_iterator_dereference (ppl_const_Generator_System_const_iterator_t git, ppl_const_Generator_t * pg) [related]`

Dereference `git` writing a const handle to the resulting generator at address `pg`.

Definition at line 1237 of file `ppl_c_implementation_common.cc`.

10.27.2.4 `int ppl_Generator_System_const_iterator_equal_test (ppl_const_Generator_System_const_iterator_t x, ppl_const_Generator_System_const_iterator_t y) [related]`

Returns a positive integer if the iterators corresponding to `x` and `y` are equal; returns 0 if they are different.

Definition at line 1257 of file `ppl_c_implementation_common.cc`.

10.27.2.5 `int ppl_Generator_System_const_iterator_increment (ppl_Generator_System_const_iterator_t git) [related]`

Increment `git` so that it "points" to the next generator.

Definition at line 1248 of file `ppl_c_implementation_common.cc`.

10.27.2.6 `int ppl_new_Generator_System_const_iterator (ppl_Generator_System_const_iterator_t * pgit) [related]`

Builds a new 'const iterator' and writes a handle to it at address `pgit`.

Definition at line 1181 of file ppl_c_implementation_common.cc.

10.27.2.7 `int ppl_new_Generator_System_const_iterator_from_Generator_System_const_iterator (ppl_Generator_System_const_iterator_t * pgit, ppl_const_Generator_System_const_iterator_t git) [related]`

Builds a const iterator that is a copy of `git`; writes a handle for the newly created const iterator at address `pgit`.

Definition at line 1189 of file ppl_c_implementation_common.cc.

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.28 ppl_Generator_System_tag Interface Reference

Types and functions for generator systems.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

Constructors, Assignment and Destructor

- `int ppl_new_Generator_System (ppl_Generator_System_t *pgs)`
Builds an empty system of generators and writes a handle to it at address `pgs`.
- `int ppl_new_Generator_System_from_Generator (ppl_Generator_System_t *pgs, ppl_const_Generator_t g)`
Builds the singleton generator system containing only a copy of generator `g`; writes a handle for the newly created system at address `pgs`.
- `int ppl_new_Generator_System_from_Generator_System (ppl_Generator_System_t *pgs, ppl_const_Generator_System_t gs)`
Builds a generator system that is a copy of `gs`; writes a handle for the newly created system at address `pgs`.
- `int ppl_assign_Generator_System_from_Generator_System (ppl_Generator_System_t dst, ppl_const_Generator_System_t src)`
Assigns a copy of the generator system `src` to `dst`.
- `int ppl_delete_Generator_System (ppl_const_Generator_System_t gs)`
Invalidates the handle `gs`: this makes sure the corresponding resources will eventually be released.

Functions that Do Not Modify the Generator System

- `int ppl_Generator_System_space_dimension (ppl_const_Generator_System_t gs, ppl_dimension_type *m)`

Writes to `m` the dimension of the vector space enclosing `gs`.

- `int ppl_Generator_System_empty (ppl_const_Generator_System_t gs)`
Returns a positive integer if `gs` contains no generators; returns 0 otherwise.
- `int ppl_Generator_System_begin (ppl_const_Generator_System_t gs, ppl_Generator_System_const_iterator_t git)`
Assigns to `git` a const iterator "pointing" to the beginning of the generator system `gs`.
- `int ppl_Generator_System_end (ppl_const_Generator_System_t gs, ppl_Generator_System_const_iterator_t git)`
Assigns to `git` a const iterator "pointing" past the end of the generator system `gs`.
- `int ppl_Generator_System_OK (ppl_const_Generator_System_t gs)`
Returns a positive integer if `gs` is well formed, i.e., if it satisfies all its implementation invariants; returns 0 and perhaps makes some noise if `gs` is broken. Useful for debugging purposes.

Functions that May Modify the Generator System

- `int ppl_Generator_System_clear (ppl_Generator_System_t gs)`
Removes all the generators from the generator system `gs` and sets its space dimension to 0.
- `int ppl_Generator_System_insert_Generator (ppl_Generator_System_t gs, ppl_const_Generator_t g)`
Inserts a copy of the generator `g` into `gs`; the space dimension is increased, if necessary.

10.28.1 Detailed Description

Types and functions for generator systems. The types and functions for generator systems provide an interface towards *Generator_System*.

10.28.2 Friends And Related Function Documentation

10.28.2.1 `int ppl_assign_Generator_System_from_Generator_System (ppl_Generator_System_t dst, ppl_const_Generator_System_t src)` [related]

Assigns a copy of the generator system `src` to `dst`.

Definition at line 1130 of file `ppl_c_implementation_common.cc`.

10.28.2.2 `int ppl_delete_Generator_System (ppl_const_Generator_System_t gs)` [related]

Invalidates the handle `gs`: this makes sure the corresponding resources will eventually be released.

Definition at line 1122 of file `ppl_c_implementation_common.cc`.

10.28.2.3 `int ppl_Generator_System_begin (ppl_const_Generator_System_t gs, ppl_Generator_System_const_iterator_t git)` **[related]**

Assigns to `git` a const iterator "pointing" to the beginning of the generator system `gs`.

Definition at line 1216 of file `ppl_c_implementation_common.cc`.

10.28.2.4 `int ppl_Generator_System_clear (ppl_Generator_System_t gs)` **[related]**

Removes all the generators from the generator system `gs` and sets its space dimension to 0.

Definition at line 1155 of file `ppl_c_implementation_common.cc`.

10.28.2.5 `int ppl_Generator_System_empty (ppl_const_Generator_System_t gs)` **[related]**

Returns a positive integer if `gs` contains no generators; returns 0 otherwise.

Definition at line 1148 of file `ppl_c_implementation_common.cc`.

10.28.2.6 `int ppl_Generator_System_end (ppl_const_Generator_System_t gs, ppl_Generator_System_const_iterator_t git)` **[related]**

Assigns to `git` a const iterator "pointing" past the end of the generator system `gs`.

Definition at line 1226 of file `ppl_c_implementation_common.cc`.

10.28.2.7 `int ppl_Generator_System_insert_Generator (ppl_Generator_System_t gs, ppl_const_Generator_t g)` **[related]**

Inserts a copy of the generator `g` into `gs`; the space dimension is increased, if necessary.

Definition at line 1162 of file `ppl_c_implementation_common.cc`.

10.28.2.8 `int ppl_Generator_System_OK (ppl_const_Generator_System_t gs)` **[related]**

Returns a positive integer if `gs` is well formed, i.e., if it satisfies all its implementation invariants; returns 0 and perhaps makes some noise if `gs` is broken. Useful for debugging purposes.

Definition at line 1172 of file `ppl_c_implementation_common.cc`.

10.28.2.9 `int ppl_Generator_System_space_dimension (ppl_const_Generator_System_t gs, ppl_dimension_type * m)` **[related]**

Writes to `m` the dimension of the vector space enclosing `gs`.

Definition at line 1139 of file `ppl_c_implementation_common.cc`.

10.28.2.10 `int ppl_new_Generator_System (ppl_Generator_System_t * pgs) [related]`

Builds an empty system of generators and writes a handle to it at address `pgs`.

Definition at line 1090 of file `ppl_c_implementation_common.cc`.

10.28.2.11 `int ppl_new_Generator_System_from_Generator (ppl_Generator_System_t * pgs, ppl_const_Generator_t g) [related]`

Builds the singleton generator system containing only a copy of generator `g`; writes a handle for the newly created system at address `pgs`.

Definition at line 1104 of file `ppl_c_implementation_common.cc`.

10.28.2.12 `int ppl_new_Generator_System_from_Generator_System (ppl_Generator_System_t * pgs, ppl_const_Generator_System_t gs) [related]`

Builds a generator system that is a copy of `gs`; writes a handle for the newly created system at address `pgs`.

Definition at line 1114 of file `ppl_c_implementation_common.cc`.

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.29 `ppl_Generator_tag` Interface Reference

Types and functions for generators.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

Constructors, Assignment and Destructor

- `int ppl_new_Generator (ppl_Generator_t *pg, ppl_const_Linear_Expression_t le, enum ppl_enum_Generator_Type t, ppl_const_Coefficient_t d)`

Creates a new generator of direction `le` and type `t`. If the generator to be created is a point or a closure point, the divisor `d` is applied to `le`. For other types of generators `d` is simply disregarded. A handle for the new generator is written at address `pg`. The space dimension of the new generator is equal to the space dimension of `le`.

- `int ppl_new_Generator_zero_dim_point (ppl_Generator_t *pg)`
Creates the point that is the origin of the zero-dimensional space $\mathbb{R}^0$. Writes a handle for the new generator at address pg.
- `int ppl_new_Generator_zero_dim_closure_point (ppl_Generator_t *pg)`
Creates, as a closure point, the point that is the origin of the zero-dimensional space $\mathbb{R}^0$. Writes a handle for the new generator at address pg.
- `int ppl_new_Generator_from_Generator (ppl_Generator_t *pg, ppl_const_Generator_t g)`
Builds a generator that is a copy of g; writes a handle for the newly created generator at address pg.
- `int ppl_assign_Generator_from_Generator (ppl_Generator_t dst, ppl_const_Generator_t src)`
Assigns a copy of the generator src to dst.
- `int ppl_delete_Generator (ppl_const_Generator_t g)`
Invalidates the handle g: this makes sure the corresponding resources will eventually be released.

Functions that Do Not Modify the Generator

- `int ppl_Generator_space_dimension (ppl_const_Generator_t g, ppl_dimension_type *m)`
Writes to m the space dimension of g.
- `int ppl_Generator_type (ppl_const_Generator_t g)`
Returns the type of generator g.
- `int ppl_Generator_coefficient (ppl_const_Generator_t g, ppl_dimension_type var, ppl_Coefficient_t n)`
Copies into n the coefficient of variable var in generator g.
- `int ppl_Generator_divisor (ppl_const_Generator_t g, ppl_Coefficient_t n)`
If g is a point or a closure point assigns its divisor to n.
- `int ppl_Generator_OK (ppl_const_Generator_t g)`
Returns a positive integer if g is well formed, i.e., if it satisfies all its implementation invariants; returns 0 and perhaps makes some noise if g is broken. Useful for debugging purposes.

10.29.1 Detailed Description

Types and functions for generators. The types and functions for generators provide an interface towards *Generator*.

10.29.2 Friends And Related Function Documentation

10.29.2.1 `int ppl_assign_Generator_from_Generator (ppl_Generator_t dst, ppl_const_Generator_t src)` [related]

Assigns a copy of the generator src to dst.

Definition at line 1017 of file ppl_c_implementation_common.cc.

10.29.2.2 `int ppl_delete_Generator (ppl_const_Generator_t g) [related]`

Invalidates the handle `g`: this makes sure the corresponding resources will eventually be released.

Definition at line 1010 of file `ppl_c_implementation_common.cc`.

10.29.2.3 `int ppl_Generator_coefficient (ppl_const_Generator_t g, ppl_dimension_type var, ppl_Coefficient_t n) [related]`

Copies into `n` the coefficient of variable `var` in generator `g`.

Definition at line 1052 of file `ppl_c_implementation_common.cc`.

10.29.2.4 `int ppl_Generator_divisor (ppl_const_Generator_t g, ppl_Coefficient_t n) [related]`

If `g` is a point or a closure point assigns its divisor to `n`.

Definition at line 1063 of file `ppl_c_implementation_common.cc`.

10.29.2.5 `int ppl_Generator_OK (ppl_const_Generator_t g) [related]`

Returns a positive integer if `g` is well formed, i.e., if it satisfies all its implementation invariants; returns 0 and perhaps makes some noise if `g` is broken. Useful for debugging purposes.

Definition at line 1073 of file `ppl_c_implementation_common.cc`.

10.29.2.6 `int ppl_Generator_space_dimension (ppl_const_Generator_t g, ppl_dimension_type * m) [related]`

Writes to `m` the space dimension of `g`.

Definition at line 1027 of file `ppl_c_implementation_common.cc`.

10.29.2.7 `int ppl_Generator_type (ppl_const_Generator_t g) [related]`

Returns the type of generator `g`.

Definition at line 1035 of file `ppl_c_implementation_common.cc`.

10.29.2.8 `int ppl_new_Generator (ppl_Generator_t * pg, ppl_const_Linear_Expression_t le, enum ppl_enum_Generator_Type t, ppl_const_Coefficient_t d) [related]`

Creates a new generator of direction le and type t . If the generator to be created is a point or a closure point, the divisor d is applied to le . For other types of generators d is simply disregarded. A handle for the new generator is written at address pg . The space dimension of the new generator is equal to the space dimension of le .

Definition at line 957 of file `ppl_c_implementation_common.cc`.

10.29.2.9 `int ppl_new_Generator_from_Generator (ppl_Generator_t *pg, ppl_const_Generator_t g) [related]`

Builds a generator that is a copy of g ; writes a handle for the newly created generator at address pg .

Definition at line 1001 of file `ppl_c_implementation_common.cc`.

10.29.2.10 `int ppl_new_Generator_zero_dim_closure_point (ppl_Generator_t *pg) [related]`

Creates, as a closure point, the point that is the origin of the zero-dimensional space $\mathbb{R}^0$. Writes a handle for the new generator at address pg .

Definition at line 994 of file `ppl_c_implementation_common.cc`.

10.29.2.11 `int ppl_new_Generator_zero_dim_point (ppl_Generator_t *pg) [related]`

Creates the point that is the origin of the zero-dimensional space $\mathbb{R}^0$. Writes a handle for the new generator at address pg .

Definition at line 987 of file `ppl_c_implementation_common.cc`.

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.30 ppl_Grid_Generator_System_const_iterator_tag Interface Reference

Types and functions for iterating on grid generator systems.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

Constructors, Assignment and Destructor

- `int ppl_new_Grid_Generator_System_const_iterator (ppl_Grid_Generator_System_const_iterator_t *pgit)`

Builds a new 'const iterator' and writes a handle to it at address $pgit$.

- `int ppl_new_Grid_Generator_System_const_iterator_from_Grid_Generator_System_const_iterator` (`ppl_Grid_Generator_System_const_iterator_t *pgit`, `ppl_const_Grid_Generator_System_const_iterator_t git`)
Builds a const iterator that is a copy of `git`; writes a handle for the newly created const iterator at address `pgit`.
- `int ppl_assign_Grid_Generator_System_const_iterator_from_Grid_Generator_System_const_iterator` (`ppl_Grid_Generator_System_const_iterator_t dst`, `ppl_const_Grid_Generator_System_const_iterator_t src`)
Assigns a copy of the const iterator `src` to `dst`.
- `int ppl_delete_Grid_Generator_System_const_iterator` (`ppl_const_Grid_Generator_System_const_iterator_t git`)
Invalidates the handle `git`: this makes sure the corresponding resources will eventually be released.

Dereferencing, Incrementing and Equality Testing

- `int ppl_Grid_Generator_System_const_iterator_dereference` (`ppl_const_Grid_Generator_System_const_iterator_t git`, `ppl_const_Grid_Generator_t *pg`)
Dereference `git` writing a const handle to the resulting grid generator at address `pg`.
- `int ppl_Grid_Generator_System_const_iterator_increment` (`ppl_Grid_Generator_System_const_iterator_t git`)
Increment `git` so that it "points" to the next grid generator.
- `int ppl_Grid_Generator_System_const_iterator_equal_test` (`ppl_const_Grid_Generator_System_const_iterator_t x`, `ppl_const_Grid_Generator_System_const_iterator_t y`)
Returns a positive integer if the iterators corresponding to `x` and `y` are equal; returns 0 if they are different.

10.30.1 Detailed Description

Types and functions for iterating on grid generator systems. The types and functions for grid generator systems iterators provide read-only access to the elements of a grid generator system by interfacing `Grid_Generator_System::const_iterator`.

10.30.2 Friends And Related Function Documentation

10.30.2.1 `int ppl_assign_Grid_Generator_System_const_iterator_from_Grid_Generator_System_const_iterator` (`ppl_Grid_Generator_System_const_iterator_t dst`, `ppl_const_Grid_Generator_System_const_iterator_t src`) [**related**]

Assigns a copy of the const iterator `src` to `dst`.

Definition at line 1802 of file `ppl_c_implementation_common.cc`.

10.30.2.2 `int ppl_delete_Grid_Generator_System_const_iterator` (`ppl_const_Grid_Generator_System_const_iterator_t git`) [**related**]

Invalidates the handle `git`: this makes sure the corresponding resources will eventually be released.

Definition at line 1794 of file `ppl_c_implementation_common.cc`.

10.30.2.3 `int ppl_Grid_Generator_System_const_iterator_dereference (ppl_const_Grid_Generator_System_const_iterator_t git, ppl_const_Grid_Generator_t * pg) [related]`

Dereference `git` writing a const handle to the resulting grid generator at address `pg`.

Definition at line 1835 of file `ppl_c_implementation_common.cc`.

10.30.2.4 `int ppl_Grid_Generator_System_const_iterator_equal_test (ppl_const_Grid_Generator_System_const_iterator_t x, ppl_const_Grid_Generator_System_const_iterator_t y) [related]`

Returns a positive integer if the iterators corresponding to `x` and `y` are equal; returns 0 if they are different.

Definition at line 1855 of file `ppl_c_implementation_common.cc`.

10.30.2.5 `int ppl_Grid_Generator_System_const_iterator_increment (ppl_Grid_Generator_System_const_iterator_t git) [related]`

Increment `git` so that it "points" to the next grid generator.

Definition at line 1846 of file `ppl_c_implementation_common.cc`.

10.30.2.6 `int ppl_new_Grid_Generator_System_const_iterator (ppl_Grid_Generator_System_const_iterator_t * pgit) [related]`

Builds a new 'const iterator' and writes a handle to it at address `pgit`.

Definition at line 1776 of file `ppl_c_implementation_common.cc`.

10.30.2.7 `int ppl_new_Grid_Generator_System_const_iterator_from_Grid_Generator_System_const_iterator (ppl_Grid_Generator_System_const_iterator_t * pgit, ppl_const_Grid_Generator_System_const_iterator_t git) [related]`

Builds a const iterator that is a copy of `git`; writes a handle for the newly created const iterator at address `pgit`.

Definition at line 1784 of file `ppl_c_implementation_common.cc`.

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.31 ppl_Grid_Generator_System_tag Interface Reference

Types and functions for grid generator systems.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

Constructors, Assignment and Destructor

- `int ppl_new_Grid_Generator_System (ppl_Grid_Generator_System_t *pgs)`
Builds an empty system of grid generators and writes a handle to it at address pgs.
- `int ppl_new_Grid_Generator_System_from_Grid_Generator (ppl_Grid_Generator_System_t *pgs, ppl_const_Grid_Generator_t g)`
Builds the singleton grid generator system containing only a copy of generator g; writes a handle for the newly created system at address pgs.
- `int ppl_new_Grid_Generator_System_from_Grid_Generator_System (ppl_Grid_Generator_System_t *pgs, ppl_const_Grid_Generator_System_t gs)`
Builds a grid generator system that is a copy of gs; writes a handle for the newly created system at address pgs.
- `int ppl_assign_Grid_Generator_System_from_Grid_Generator_System (ppl_Grid_Generator_System_t dst, ppl_const_Grid_Generator_System_t src)`
Assigns a copy of the grid generator system src to dst.
- `int ppl_delete_Grid_Generator_System (ppl_const_Grid_Generator_System_t gs)`
Invalidates the handle gs: this makes sure the corresponding resources will eventually be released.

Functions that Do Not Modify the Grid Generator System

- `int ppl_Grid_Generator_System_space_dimension (ppl_const_Grid_Generator_System_t gs, ppl_dimension_type *m)`
Writes to m the dimension of the vector space enclosing gs.
- `int ppl_Grid_Generator_System_empty (ppl_const_Grid_Generator_System_t gs)`
Returns a positive integer if gs contains no generator; returns 0 otherwise.
- `int ppl_Grid_Generator_System_begin (ppl_const_Grid_Generator_System_t gs, ppl_Grid_Generator_System_const_iterator_t git)`
Assigns to git a const iterator "pointing" to the beginning of the grid generator system gs.
- `int ppl_Grid_Generator_System_end (ppl_const_Grid_Generator_System_t gs, ppl_Grid_Generator_System_const_iterator_t git)`
Assigns to git a const iterator "pointing" past the end of the grid generator system gs.
- `int ppl_Grid_Generator_System_OK (ppl_const_Grid_Generator_System_t gs)`
Returns a positive integer if gs is well formed, i.e., if it satisfies all its implementation invariants; returns 0 and perhaps makes some noise if gs is broken. Useful for debugging purposes.

Functions that May Modify the Grid Generator System

- `int ppl_Grid_Generator_System_clear` (`ppl_Grid_Generator_System_t gs`)
Removes all the generators from the grid generator system `gs` and sets its space dimension to 0.
- `int ppl_Grid_Generator_System_insert_Grid_Generator` (`ppl_Grid_Generator_System_t gs`,
`ppl_const_Grid_Generator_t g`)
Inserts a copy of the grid generator `g` into `gs`; the space dimension is increased, if necessary.

10.31.1 Detailed Description

Types and functions for grid generator systems. The types and functions for grid generator systems provide an interface towards *Grid_Generator_System*.

10.31.2 Friends And Related Function Documentation

10.31.2.1 `int ppl_assign_Grid_Generator_System_from_Grid_Generator_System`
(`ppl_Grid_Generator_System_t dst`, `ppl_const_Grid_Generator_System_t src`)
[related]

Assigns a copy of the grid generator system `src` to `dst`.

Definition at line 1724 of file `ppl_c_implementation_common.cc`.

10.31.2.2 `int ppl_delete_Grid_Generator_System` (`ppl_const_Grid_Generator_System_t gs`)
[related]

Invalidates the handle `gs`: this makes sure the corresponding resources will eventually be released.

Definition at line 1716 of file `ppl_c_implementation_common.cc`.

10.31.2.3 `int ppl_Grid_Generator_System_begin` (`ppl_const_Grid_Generator_System_t gs`,
`ppl_Grid_Generator_System_const_iterator_t git`) [related]

Assigns to `git` a const iterator "pointing" to the beginning of the grid generator system `gs`.

Definition at line 1813 of file `ppl_c_implementation_common.cc`.

10.31.2.4 `int ppl_Grid_Generator_System_clear` (`ppl_Grid_Generator_System_t gs`)
[related]

Removes all the generators from the grid generator system `gs` and sets its space dimension to 0.

Definition at line 1749 of file `ppl_c_implementation_common.cc`.

10.31.2.5 int ppl_Grid_Generator_System_empty (ppl_const_Grid_Generator_System_t gs)
[related]

Returns a positive integer if *gs* contains no generator; returns 0 otherwise.

Definition at line 1742 of file `ppl_c_implementation_common.cc`.

10.31.2.6 int ppl_Grid_Generator_System_end (ppl_const_Grid_Generator_System_t gs,
ppl_Grid_Generator_System_const_iterator_t git) [related]

Assigns to *git* a const iterator "pointing" past the end of the grid generator system *gs*.

Definition at line 1824 of file `ppl_c_implementation_common.cc`.

10.31.2.7 int ppl_Grid_Generator_System_insert_Grid_Generator (ppl_Grid_Generator_System_t gs,
ppl_const_Grid_Generator_t g)
[related]

Inserts a copy of the grid generator *g* into *gs*; the space dimension is increased, if necessary.

Definition at line 1757 of file `ppl_c_implementation_common.cc`.

10.31.2.8 int ppl_Grid_Generator_System_OK (ppl_const_Grid_Generator_System_t gs)
[related]

Returns a positive integer if *gs* is well formed, i.e., if it satisfies all its implementation invariants; returns 0 and perhaps makes some noise if *gs* is broken. Useful for debugging purposes.

Definition at line 1767 of file `ppl_c_implementation_common.cc`.

10.31.2.9 int ppl_Grid_Generator_System_space_dimension (ppl_const_Grid_Generator_System_t gs,
ppl_dimension_type * m) [related]

Writes to *m* the dimension of the vector space enclosing *gs*.

Definition at line 1733 of file `ppl_c_implementation_common.cc`.

10.31.2.10 int ppl_new_Grid_Generator_System (ppl_Grid_Generator_System_t * pgs)
[related]

Builds an empty system of grid generators and writes a handle to it at address *pgs*.

Definition at line 1682 of file `ppl_c_implementation_common.cc`.

10.31.2.11 `int ppl_new_Grid_Generator_System_from_Grid_Generator` (`ppl_Grid_Generator_System_t *pgs`, `ppl_const_Grid_Generator_t g`) [**related**]

Builds the singleton grid generator system containing only a copy of generator `g`; writes a handle for the newly created system at address `pgs`.

Definition at line 1699 of file `ppl_c_implementation_common.cc`.

10.31.2.12 `int ppl_new_Grid_Generator_System_from_Grid_Generator_System` (`ppl_Grid_Generator_System_t *pgs`, `ppl_const_Grid_Generator_System_t gs`) [**related**]

Builds a grid generator system that is a copy of `gs`; writes a handle for the newly created system at address `pgs`.

Definition at line 1708 of file `ppl_c_implementation_common.cc`.

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.32 ppl_Grid_Generator_tag Interface Reference

Types and functions for grid generators.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

Constructors, Assignment and Destructor

- `int ppl_new_Grid_Generator` (`ppl_Grid_Generator_t *pg`, `ppl_const_Linear_Expression_t le`, `enum ppl_enum_Grid_Generator_Type t`, `ppl_const_Coefficient_t d`)
Creates a new grid generator of direction le and type t . If the grid generator to be created is a point or a parameter, the divisor d is applied to le . If it is a line, d is simply disregarded. A handle for the new grid generator is written at address `pg`. The space dimension of the new grid generator is equal to the space dimension of le .
- `int ppl_new_Grid_Generator_zero_dim_point` (`ppl_Grid_Generator_t *pg`)
Creates the point that is the origin of the zero-dimensional space $\mathbb{R}^0$. Writes a handle for the new grid generator at address `pg`.
- `int ppl_new_Grid_Generator_from_Grid_Generator` (`ppl_Grid_Generator_t *pg`, `ppl_const_Grid_Generator_t g`)
Builds a grid generator that is a copy of g ; writes a handle for the newly created grid generator at address `pg`.
- `int ppl_assign_Grid_Generator_from_Grid_Generator` (`ppl_Grid_Generator_t dst`, `ppl_const_Grid_Generator_t src`)

Assigns a copy of the grid generator *src* to *dst*.

- `int ppl_delete_Grid_Generator (ppl_const_Grid_Generator_t g)`
Invalidates the handle *g*: this makes sure the corresponding resources will eventually be released.

Functions that Do Not Modify the Grid Generator

- `int ppl_Grid_Generator_space_dimension (ppl_const_Grid_Generator_t g, ppl_dimension_type *m)`
Writes to *m* the space dimension of *g*.
- `int ppl_Grid_Generator_type (ppl_const_Grid_Generator_t g)`
Returns the type of grid generator *g*.
- `int ppl_Grid_Generator_coefficient (ppl_const_Grid_Generator_t g, ppl_dimension_type var, ppl_Coefficient_t n)`
Copies into *n* the coefficient of variable *var* in grid generator *g*.
- `int ppl_Grid_Generator_divisor (ppl_const_Grid_Generator_t g, ppl_Coefficient_t n)`
If *g* is a point or a parameter assigns its divisor to *n*.
- `int ppl_Grid_Generator_OK (ppl_const_Grid_Generator_t g)`
Returns a positive integer if *g* is well formed, i.e., if it satisfies all its implementation invariants; returns 0 and perhaps makes some noise if *g* is broken. Useful for debugging purposes.

10.32.1 Detailed Description

Types and functions for grid generators. The types and functions for grid generators provide an interface towards *Grid_Generator*.

10.32.2 Friends And Related Function Documentation

10.32.2.1 `int ppl_assign_Grid_Generator_from_Grid_Generator (ppl_Grid_Generator_t dst, ppl_const_Grid_Generator_t src)` [related]

Assigns a copy of the grid generator *src* to *dst*.

Definition at line 1609 of file `ppl_c_implementation_common.cc`.

10.32.2.2 `int ppl_delete_Grid_Generator (ppl_const_Grid_Generator_t g)` [related]

Invalidates the handle *g*: this makes sure the corresponding resources will eventually be released.

Definition at line 1601 of file `ppl_c_implementation_common.cc`.

10.32.2.3 `int ppl_Grid_Generator_coefficient (ppl_const_Grid_Generator_t g,
ppl_dimension_type var, ppl_Coefficient_t n)` [**related**]

Copies into `n` the coefficient of variable `var` in grid generator `g`.

Definition at line 1642 of file `ppl_c_implementation_common.cc`.

10.32.2.4 `int ppl_Grid_Generator_divisor (ppl_const_Grid_Generator_t g, ppl_Coefficient_t n)`
[**related**]

If `g` is a point or a parameter assigns its divisor to `n`.

Definition at line 1653 of file `ppl_c_implementation_common.cc`.

10.32.2.5 `int ppl_Grid_Generator_OK (ppl_const_Grid_Generator_t g)` [**related**]

Returns a positive integer if `g` is well formed, i.e., if it satisfies all its implementation invariants; returns 0 and perhaps makes some noise if `g` is broken. Useful for debugging purposes.

Definition at line 1663 of file `ppl_c_implementation_common.cc`.

10.32.2.6 `int ppl_Grid_Generator_space_dimension (ppl_const_Grid_Generator_t g,
ppl_dimension_type * m)` [**related**]

Writes to `m` the space dimension of `g`.

Definition at line 1619 of file `ppl_c_implementation_common.cc`.

10.32.2.7 `int ppl_Grid_Generator_type (ppl_const_Grid_Generator_t g)` [**related**]

Returns the type of grid generator `g`.

Definition at line 1627 of file `ppl_c_implementation_common.cc`.

10.32.2.8 `int ppl_new_Grid_Generator (ppl_Grid_Generator_t * pg, ppl_const_Linear_Expression_t le,
enum ppl_enum_Grid_Generator_Type t, ppl_const_Coefficient_t d)`
[**related**]

Creates a new grid generator of direction `le` and type `t`. If the grid generator to be created is a point or a parameter, the divisor `d` is applied to `le`. If it is a line, `d` is simply disregarded. A handle for the new grid generator is written at address `pg`. The space dimension of the new grid generator is equal to the space dimension of `le`.

Definition at line 1558 of file `ppl_c_implementation_common.cc`.

10.32.2.9 `int ppl_new_Grid_Generator_from_Grid_Generator (ppl_Grid_Generator_t *pg, ppl_const_Grid_Generator_t g) [related]`

Builds a grid generator that is a copy of `g`; writes a handle for the newly created grid generator at address `pg`.

Definition at line 1592 of file `ppl_c_implementation_common.cc`.

10.32.2.10 `int ppl_new_Grid_Generator_zero_dim_point (ppl_Grid_Generator_t *pg) [related]`

Creates the point that is the origin of the zero-dimensional space $\mathbb{R}^0$. Writes a handle for the new grid generator at address `pg`.

Definition at line 1585 of file `ppl_c_implementation_common.cc`.

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.33 `ppl_Grid_tag` Interface Reference

Types and functions for [ppl_Grid_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Grid (ppl_const_Grid_t ph)`
- `int ppl_new_Grid_from_space_dimension (ppl_Grid_t *pph, ppl_dimension_type d, int empty)`
- `int ppl_new_Grid_from_Int8_Box (ppl_Grid_t *pph, ppl_const_Int8_Box_t ph)`
- `int ppl_new_Grid_from_Int16_Box (ppl_Grid_t *pph, ppl_const_Int16_Box_t ph)`
- `int ppl_new_Grid_from_Int32_Box (ppl_Grid_t *pph, ppl_const_Int32_Box_t ph)`
- `int ppl_new_Grid_from_Int64_Box (ppl_Grid_t *pph, ppl_const_Int64_Box_t ph)`
- `int ppl_new_Grid_from_Uint8_Box (ppl_Grid_t *pph, ppl_const_Uint8_Box_t ph)`
- `int ppl_new_Grid_from_Uint16_Box (ppl_Grid_t *pph, ppl_const_Uint16_Box_t ph)`
- `int ppl_new_Grid_from_Uint32_Box (ppl_Grid_t *pph, ppl_const_Uint32_Box_t ph)`
- `int ppl_new_Grid_from_Uint64_Box (ppl_Grid_t *pph, ppl_const_Uint64_Box_t ph)`
- `int ppl_new_Grid_from_Z_Box (ppl_Grid_t *pph, ppl_const_Z_Box_t ph)`
- `int ppl_new_Grid_from_Rational_Box (ppl_Grid_t *pph, ppl_const_Rational_Box_t ph)`
- `int ppl_new_Grid_from_BD_Shape_int8_t (ppl_Grid_t *pph, ppl_const_BD_Shape_int8_t_t ph)`
- `int ppl_new_Grid_from_BD_Shape_int16_t (ppl_Grid_t *pph, ppl_const_BD_Shape_int16_t_t ph)`
- `int ppl_new_Grid_from_BD_Shape_int32_t (ppl_Grid_t *pph, ppl_const_BD_Shape_int32_t_t ph)`
- `int ppl_new_Grid_from_BD_Shape_int64_t (ppl_Grid_t *pph, ppl_const_BD_Shape_int64_t_t ph)`
- `int ppl_new_Grid_from_BD_Shape_mpz_class (ppl_Grid_t *pph, ppl_const_BD_Shape_mpz_class_t_t ph)`

- int `ppl_new_Grid_from_BD_Shape_mpq_class` (ppl_Grid_t *pph, ppl_const_BD_Shape_mpq_class_t ph)
- int `ppl_new_Grid_from_Octagonal_Shape_int8_t` (ppl_Grid_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph)
- int `ppl_new_Grid_from_Octagonal_Shape_int16_t` (ppl_Grid_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph)
- int `ppl_new_Grid_from_Octagonal_Shape_int32_t` (ppl_Grid_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph)
- int `ppl_new_Grid_from_Octagonal_Shape_int64_t` (ppl_Grid_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph)
- int `ppl_new_Grid_from_Octagonal_Shape_mpz_class` (ppl_Grid_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph)
- int `ppl_new_Grid_from_Octagonal_Shape_mpq_class` (ppl_Grid_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph)
- int `ppl_new_Grid_from_C_Polyhedron` (ppl_Grid_t *pph, ppl_const_Polyhedron_t ph)
- int `ppl_new_Grid_from_NNC_Polyhedron` (ppl_Grid_t *pph, ppl_const_Polyhedron_t ph)
- int `ppl_new_Grid_from_Grid` (ppl_Grid_t *pph, ppl_const_Grid_t ph)
- int `ppl_new_Grid_from_Float_Box` (ppl_Grid_t *pph, ppl_const_Float_Box_t ph)
- int `ppl_new_Grid_from_BD_Shape_float` (ppl_Grid_t *pph, ppl_const_BD_Shape_float_t ph)
- int `ppl_new_Grid_from_Octagonal_Shape_float` (ppl_Grid_t *pph, ppl_const_Octagonal_Shape_float_t ph)
- int `ppl_new_Grid_from_Double_Box` (ppl_Grid_t *pph, ppl_const_Double_Box_t ph)
- int `ppl_new_Grid_from_BD_Shape_double` (ppl_Grid_t *pph, ppl_const_BD_Shape_double_t ph)
- int `ppl_new_Grid_from_Octagonal_Shape_double` (ppl_Grid_t *pph, ppl_const_Octagonal_Shape_double_t ph)
- int `ppl_new_Grid_from_Long_Double_Box` (ppl_Grid_t *pph, ppl_const_Long_Double_Box_t ph)
- int `ppl_new_Grid_from_BD_Shape_long_double` (ppl_Grid_t *pph, ppl_const_BD_Shape_long_double_t ph)
- int `ppl_new_Grid_from_Octagonal_Shape_long_double` (ppl_Grid_t *pph, ppl_const_Octagonal_Shape_long_double_t ph)
- int `ppl_new_Grid_from_Int8_Box_with_complexity` (ppl_Grid_t *pph, ppl_const_Int8_Box_t ph, int complexity)
- int `ppl_new_Grid_from_Int16_Box_with_complexity` (ppl_Grid_t *pph, ppl_const_Int16_Box_t ph, int complexity)
- int `ppl_new_Grid_from_Int32_Box_with_complexity` (ppl_Grid_t *pph, ppl_const_Int32_Box_t ph, int complexity)
- int `ppl_new_Grid_from_Int64_Box_with_complexity` (ppl_Grid_t *pph, ppl_const_Int64_Box_t ph, int complexity)
- int `ppl_new_Grid_from_Uint8_Box_with_complexity` (ppl_Grid_t *pph, ppl_const_Uint8_Box_t ph, int complexity)
- int `ppl_new_Grid_from_Uint16_Box_with_complexity` (ppl_Grid_t *pph, ppl_const_Uint16_Box_t ph, int complexity)
- int `ppl_new_Grid_from_Uint32_Box_with_complexity` (ppl_Grid_t *pph, ppl_const_Uint32_Box_t ph, int complexity)
- int `ppl_new_Grid_from_Uint64_Box_with_complexity` (ppl_Grid_t *pph, ppl_const_Uint64_Box_t ph, int complexity)
- int `ppl_new_Grid_from_Z_Box_with_complexity` (ppl_Grid_t *pph, ppl_const_Z_Box_t ph, int complexity)
- int `ppl_new_Grid_from_Rational_Box_with_complexity` (ppl_Grid_t *pph, ppl_const_Rational_Box_t ph, int complexity)
- int `ppl_new_Grid_from_BD_Shape_int8_t_with_complexity` (ppl_Grid_t *pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)

- [int ppl_new_Grid_from_BD_Shape_int16_t_with_complexity](#) (ppl_Grid_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)
- [int ppl_new_Grid_from_BD_Shape_int32_t_with_complexity](#) (ppl_Grid_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)
- [int ppl_new_Grid_from_BD_Shape_int64_t_with_complexity](#) (ppl_Grid_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)
- [int ppl_new_Grid_from_BD_Shape_mpz_class_with_complexity](#) (ppl_Grid_t *pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)
- [int ppl_new_Grid_from_BD_Shape_mpq_class_with_complexity](#) (ppl_Grid_t *pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)
- [int ppl_new_Grid_from_Octagonal_Shape_int8_t_with_complexity](#) (ppl_Grid_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)
- [int ppl_new_Grid_from_Octagonal_Shape_int16_t_with_complexity](#) (ppl_Grid_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)
- [int ppl_new_Grid_from_Octagonal_Shape_int32_t_with_complexity](#) (ppl_Grid_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)
- [int ppl_new_Grid_from_Octagonal_Shape_int64_t_with_complexity](#) (ppl_Grid_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)
- [int ppl_new_Grid_from_Octagonal_Shape_mpz_class_with_complexity](#) (ppl_Grid_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)
- [int ppl_new_Grid_from_Octagonal_Shape_mpq_class_with_complexity](#) (ppl_Grid_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)
- [int ppl_new_Grid_from_C_Polyhedron_with_complexity](#) (ppl_Grid_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- [int ppl_new_Grid_from_NNC_Polyhedron_with_complexity](#) (ppl_Grid_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- [int ppl_new_Grid_from_Grid_with_complexity](#) (ppl_Grid_t *pph, ppl_const_Grid_t ph, int complexity)
- [int ppl_new_Grid_from_Float_Box_with_complexity](#) (ppl_Grid_t *pph, ppl_const_Float_Box_t ph, int complexity)
- [int ppl_new_Grid_from_BD_Shape_float_with_complexity](#) (ppl_Grid_t *pph, ppl_const_BD_Shape_float_t ph, int complexity)
- [int ppl_new_Grid_from_Octagonal_Shape_float_with_complexity](#) (ppl_Grid_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)
- [int ppl_new_Grid_from_Double_Box_with_complexity](#) (ppl_Grid_t *pph, ppl_const_Double_Box_t ph, int complexity)
- [int ppl_new_Grid_from_BD_Shape_double_with_complexity](#) (ppl_Grid_t *pph, ppl_const_BD_Shape_double_t ph, int complexity)
- [int ppl_new_Grid_from_Octagonal_Shape_double_with_complexity](#) (ppl_Grid_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)
- [int ppl_new_Grid_from_Long_Double_Box_with_complexity](#) (ppl_Grid_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- [int ppl_new_Grid_from_BD_Shape_long_double_with_complexity](#) (ppl_Grid_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity)
- [int ppl_new_Grid_from_Octagonal_Shape_long_double_with_complexity](#) (ppl_Grid_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)
- [int ppl_new_Grid_from_Constraint_System](#) (ppl_Grid_t *pph, ppl_const_Constraint_System_t cs)
- [int ppl_new_Grid_from_Congruence_System](#) (ppl_Grid_t *pph, ppl_const_Congruence_System_t cs)
- [int ppl_new_Grid_from_Grid_Generator_System](#) (ppl_Grid_t *pph, ppl_const_Grid_Generator_System_t cs)
- [int ppl_Grid_space_dimension](#) (ppl_const_Grid_t ph, [ppl_dimension_type](#) *m)

- int [ppl_Grid_affine_dimension](#) (ppl_const_Grid_t ph, [ppl_dimension_type](#) *m)
- int [ppl_Grid_relation_with_Constraint](#) (ppl_const_Grid_t ph, ppl_const_Constraint_t c)
- int [ppl_Grid_relation_with_Generator](#) (ppl_const_Grid_t ph, ppl_const_Generator_t c)
- int [ppl_Grid_relation_with_Congruence](#) (ppl_const_Grid_t ph, ppl_const_Congruence_t c)
- int [ppl_Grid_relation_with_Grid_Generator](#) (ppl_const_Grid_t ph, ppl_const_Grid_Generator_t c)
- int [ppl_Grid_get_constraints](#) (ppl_const_Grid_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_Grid_get_congruences](#) (ppl_const_Grid_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_Grid_get_grid_generators](#) (ppl_const_Grid_t ph, ppl_const_Grid_Generator_System_t *pcs)
- int [ppl_Grid_get_minimized_constraints](#) (ppl_const_Grid_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_Grid_get_minimized_congruences](#) (ppl_const_Grid_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_Grid_get_minimized_grid_generators](#) (ppl_const_Grid_t ph, ppl_const_Grid_Generator_System_t *pcs)
- int [ppl_Grid_is_empty](#) (ppl_const_Grid_t ph)
- int [ppl_Grid_is_universe](#) (ppl_const_Grid_t ph)
- int [ppl_Grid_is_bounded](#) (ppl_const_Grid_t ph)
- int [ppl_Grid_contains_integer_point](#) (ppl_const_Grid_t ph)
- int [ppl_Grid_is_topologically_closed](#) (ppl_const_Grid_t ph)
- int [ppl_Grid_is_discrete](#) (ppl_const_Grid_t ph)
- int [ppl_Grid_topological_closure_assign](#) (ppl_Grid_t ph)
- int [ppl_Grid_bounds_from_above](#) (ppl_const_Grid_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Grid_bounds_from_below](#) (ppl_const_Grid_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Grid_maximize](#) (ppl_const_Grid_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Grid_minimize](#) (ppl_const_Grid_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Grid_maximize_with_point](#) (ppl_const_Grid_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Grid_minimize_with_point](#) (ppl_const_Grid_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Grid_frequency](#) (ppl_const_Grid_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)
- int [ppl_Grid_contains_Grid](#) (ppl_const_Grid_t x, ppl_const_Grid_t y)
- int [ppl_Grid_strictly_contains_Grid](#) (ppl_const_Grid_t x, ppl_const_Grid_t y)
- int [ppl_Grid_is_disjoint_from_Grid](#) (ppl_const_Grid_t x, ppl_const_Grid_t y)
- int [ppl_Grid_equals_Grid](#) (ppl_const_Grid_t x, ppl_const_Grid_t y)
- int [ppl_Grid_OK](#) (ppl_const_Grid_t ph)
- int [ppl_Grid_add_constraint](#) (ppl_Grid_t ph, ppl_const_Constraint_t c)
- int [ppl_Grid_add_congruence](#) (ppl_Grid_t ph, ppl_const_Congruence_t c)
- int [ppl_Grid_add_grid_generator](#) (ppl_Grid_t ph, ppl_const_Grid_Generator_t c)
- int [ppl_Grid_add_constraints](#) (ppl_Grid_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Grid_add_congruences](#) (ppl_Grid_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Grid_add_grid_generators](#) (ppl_Grid_t ph, ppl_const_Grid_Generator_System_t cs)
- int [ppl_Grid_refine_with_constraint](#) (ppl_Grid_t ph, ppl_const_Constraint_t c)
- int [ppl_Grid_refine_with_congruence](#) (ppl_Grid_t ph, ppl_const_Congruence_t c)
- int [ppl_Grid_refine_with_constraints](#) (ppl_Grid_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Grid_refine_with_congruences](#) (ppl_Grid_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Grid_intersection_assign](#) (ppl_Grid_t x, ppl_const_Grid_t y)
- int [ppl_Grid_upper_bound_assign](#) (ppl_Grid_t x, ppl_const_Grid_t y)
- int [ppl_Grid_difference_assign](#) (ppl_Grid_t x, ppl_const_Grid_t y)

- int [ppl_Grid_concatenate_assign](#) (ppl_Grid_t x, ppl_const_Grid_t y)
- int [ppl_Grid_time_elapse_assign](#) (ppl_Grid_t x, ppl_const_Grid_t y)
- int [ppl_Grid_upper_bound_assign_if_exact](#) (ppl_Grid_t x, ppl_const_Grid_t y)
- int [ppl_Grid_simplify_using_context_assign](#) (ppl_Grid_t x, ppl_const_Grid_t y)
- int [ppl_Grid_constrains](#) (ppl_Grid_t ph, [ppl_dimension_type](#) var)
- int [ppl_Grid_unconstrain_space_dimension](#) (ppl_Grid_t ph, [ppl_dimension_type](#) var)
- int [ppl_Grid_unconstrain_space_dimensions](#) (ppl_Grid_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Grid_affine_image](#) (ppl_Grid_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Grid_affine_preimage](#) (ppl_Grid_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Grid_bounded_affine_image](#) (ppl_Grid_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Grid_bounded_affine_preimage](#) (ppl_Grid_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Grid_generalized_affine_image](#) (ppl_Grid_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Grid_generalized_affine_preimage](#) (ppl_Grid_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Grid_generalized_affine_image_lhs_rhs](#) (ppl_Grid_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Grid_generalized_affine_preimage_lhs_rhs](#) (ppl_Grid_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Grid_generalized_affine_image_with_congruence](#) (ppl_Grid_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d, ppl_const_Coefficient_t m)
- int [ppl_Grid_generalized_affine_preimage_with_congruence](#) (ppl_Grid_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d, ppl_const_Coefficient_t m)
- int [ppl_Grid_generalized_affine_image_lhs_rhs_with_congruence](#) (ppl_Grid_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs, ppl_const_Coefficient_t m)
- int [ppl_Grid_generalized_affine_preimage_lhs_rhs_with_congruence](#) (ppl_Grid_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs, ppl_const_Coefficient_t m)
- int [ppl_Grid_add_space_dimensions_and_embed](#) (ppl_Grid_t ph, [ppl_dimension_type](#) d)
- int [ppl_Grid_add_space_dimensions_and_project](#) (ppl_Grid_t ph, [ppl_dimension_type](#) d)
- int [ppl_Grid_remove_space_dimensions](#) (ppl_Grid_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Grid_remove_higher_space_dimensions](#) (ppl_Grid_t ph, [ppl_dimension_type](#) d)
- int [ppl_Grid_expand_space_dimension](#) (ppl_Grid_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Grid_fold_space_dimensions](#) (ppl_Grid_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_Grid_map_space_dimensions](#) (ppl_Grid_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_Grid_drop_some_non_integer_points](#) (ppl_Grid_t ph, int complexity)
- int [ppl_Grid_drop_some_non_integer_points_2](#) (ppl_Grid_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_Grid_external_memory_in_bytes](#) (ppl_const_Grid_t ps, size_t *sz)
- int [ppl_Grid_total_memory_in_bytes](#) (ppl_const_Grid_t ps, size_t *sz)
- int [ppl_Grid_congruence_widening_assign_with_tokens](#) (ppl_Grid_t x, ppl_const_Grid_t y, unsigned *tp)

- int [ppl_Grid_generator_widening_assign_with_tokens](#) (ppl_Grid_t x, ppl_const_Grid_t y, unsigned *tp)
- int [ppl_Grid_congruence_widening_assign](#) (ppl_Grid_t x, ppl_const_Grid_t y)
- int [ppl_Grid_generator_widening_assign](#) (ppl_Grid_t x, ppl_const_Grid_t y)
- int [ppl_Grid_widening_assign_with_tokens](#) (ppl_Grid_t x, ppl_const_Grid_t y, unsigned *tp)
- int [ppl_Grid_widening_assign](#) (ppl_Grid_t x, ppl_const_Grid_t y)
- int [ppl_Grid_limited_congruence_extrapolation_assign_with_tokens](#) (ppl_Grid_t x, ppl_const_Grid_t y, ppl_const_Congruence_System_t cs, unsigned *tp)
- int [ppl_Grid_limited_generator_extrapolation_assign_with_tokens](#) (ppl_Grid_t x, ppl_const_Grid_t y, ppl_const_Congruence_System_t cs, unsigned *tp)
- int [ppl_Grid_limited_congruence_extrapolation_assign](#) (ppl_Grid_t x, ppl_const_Grid_t y, ppl_const_Congruence_System_t cs)
- int [ppl_Grid_limited_generator_extrapolation_assign](#) (ppl_Grid_t x, ppl_const_Grid_t y, ppl_const_Congruence_System_t cs)
- int [ppl_Grid_approximate_partition](#) (ppl_const_Grid_t x, ppl_const_Grid_t y, ppl_Grid_t *p_inters, ppl_Pointset_Powerset_Grid_t *p_rest, int *p_finite)
- int [ppl_Grid_wrap_assign](#) (ppl_Grid_t ph, [ppl_dimension_type](#) ds[], size_t n, enum [ppl_enum_Bounded_Integer_Type_Width](#) w, enum [ppl_enum_Bounded_Integer_Type_Representation](#) r, enum [ppl_enum_Bounded_Integer_Type_Overflow](#) o, const ppl_const_Constraint_System_t *pcs, unsigned complexity_threshold, int wrap_individually)
- int [ppl_new_Grid_recycle_Constraint_System](#) (ppl_Grid_t *pph, ppl_Constraint_System_t cs)
- int [ppl_new_Grid_recycle_Congruence_System](#) (ppl_Grid_t *pph, ppl_Congruence_System_t cs)
- int [ppl_new_Grid_recycle_Grid_Generator_System](#) (ppl_Grid_t *pph, ppl_Grid_Generator_System_t cs)
- int [ppl_assign_Grid_from_Grid](#) (ppl_Grid_t dst, ppl_const_Grid_t src)
- int [ppl_Grid_add_recycled_constraints](#) (ppl_Grid_t ph, ppl_Constraint_System_t cs)
- int [ppl_Grid_add_recycled_congruences](#) (ppl_Grid_t ph, ppl_Congruence_System_t cs)
- int [ppl_Grid_add_recycled_grid_generators](#) (ppl_Grid_t ph, ppl_Grid_Generator_System_t cs)
- int [ppl_termination_test_MS_Grid](#) (ppl_const_Grid_t pset)
- int [ppl_termination_test_PR_Grid](#) (ppl_const_Grid_t pset)
- int [ppl_one_affine_ranking_function_MS_Grid](#) (ppl_const_Grid_t pset, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_Grid](#) (ppl_const_Grid_t pset, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_Grid](#) (ppl_const_Grid_t pset, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_Grid](#) (ppl_const_Grid_t pset, ppl_Polyhedron_t ph)
- int [ppl_termination_test_MS_Grid_2](#) (ppl_const_Grid_t pset_before, ppl_const_Grid_t pset_after)
- int [ppl_termination_test_PR_Grid_2](#) (ppl_const_Grid_t pset_before, ppl_const_Grid_t pset_after)
- int [ppl_one_affine_ranking_function_MS_Grid_2](#) (ppl_const_Grid_t pset_before, ppl_const_Grid_t pset_after, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_Grid_2](#) (ppl_const_Grid_t pset_before, ppl_const_Grid_t pset_after, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_Grid_2](#) (ppl_const_Grid_t pset_before, ppl_const_Grid_t pset_after, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_Grid_2](#) (ppl_const_Grid_t pset_before, ppl_const_Grid_t pset_after, ppl_Polyhedron_t ph)

10.33.1 Detailed Description

Types and functions for [ppl_Grid_tag](#).

10.33.2 Friends And Related Function Documentation

- 10.33.2.1 `int ppl_all_affine_ranking_functions_MS_Grid (ppl_const_Grid_t pset, ppl_Polyhedron_t ph)` `[related]`

- 10.33.2.2 `int ppl_all_affine_ranking_functions_MS_Grid_2 (ppl_const_Grid_t pset_before, ppl_const_Grid_t pset_after, ppl_Polyhedron_t ph)` `[related]`

- 10.33.2.3 `int ppl_all_affine_ranking_functions_PR_Grid (ppl_const_Grid_t pset, ppl_Polyhedron_t ph)` `[related]`

- 10.33.2.4 `int ppl_all_affine_ranking_functions_PR_Grid_2 (ppl_const_Grid_t pset_before, ppl_const_Grid_t pset_after, ppl_Polyhedron_t ph)` `[related]`

- 10.33.2.5 `int ppl_assign_Grid_from_Grid (ppl_Grid_t dst, ppl_const_Grid_t src)` `[related]`

- 10.33.2.6 `int ppl_delete_Grid (ppl_const_Grid_t ph)` `[related]`

- 10.33.2.7 `int ppl_Grid_add_congruence (ppl_Grid_t ph, ppl_const_Congruence_t c)` `[related]`

- 10.33.2.8 `int ppl_Grid_add_congruences (ppl_Grid_t ph, ppl_const_Congruence_System_t cs)` `[related]`

- 10.33.2.9 `int ppl_Grid_add_constraint (ppl_Grid_t ph, ppl_const_Constraint_t c)` `[related]`

- 10.33.2.10 `int ppl_Grid_add_constraints (ppl_Grid_t ph, ppl_const_Constraint_System_t cs)` `[related]`

- 10.33.2.11 `int ppl_Grid_add_grid_generator (ppl_Grid_t ph, ppl_const_Grid_Generator_t c)`
[related]
- 10.33.2.12 `int ppl_Grid_add_grid_generators (ppl_Grid_t ph, ppl_const_Grid_Generator_System_t cs)` [related]
- 10.33.2.13 `int ppl_Grid_add_recycled_congruences (ppl_Grid_t ph, ppl_Congruence_System_t cs)` [related]
- 10.33.2.14 `int ppl_Grid_add_recycled_constraints (ppl_Grid_t ph, ppl_Constraint_System_t cs)`
[related]
- 10.33.2.15 `int ppl_Grid_add_recycled_grid_generators (ppl_Grid_t ph,
ppl_Grid_Generator_System_t cs)` [related]
- 10.33.2.16 `int ppl_Grid_add_space_dimensions_and_embed (ppl_Grid_t ph, ppl_dimension_type d)` [related]
- 10.33.2.17 `int ppl_Grid_add_space_dimensions_and_project (ppl_Grid_t ph, ppl_dimension_type d)` [related]
- 10.33.2.18 `int ppl_Grid_affine_dimension (ppl_const_Grid_t ph, ppl_dimension_type * m)`
[related]
- 10.33.2.19 `int ppl_Grid_affine_image (ppl_Grid_t ph, ppl_dimension_type var,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [related]

- 10.33.2.20 `int ppl_Grid_affine_preimage (ppl_Grid_t ph, ppl_dimension_type var,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.33.2.21 `int ppl_Grid_approximate_partition (ppl_const_Grid_t x, ppl_const_Grid_t y,
ppl_Grid_t * p_inters, ppl_Pointset_Powerset_Grid_t * p_rest, int * p_finite)`
[`related`]
- 10.33.2.22 `int ppl_Grid_bounded_affine_image (ppl_Grid_t ph, ppl_dimension_type
var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub,
ppl_const_Coefficient_t d)` [`related`]
- 10.33.2.23 `int ppl_Grid_bounded_affine_preimage (ppl_Grid_t ph, ppl_dimension_type
var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub,
ppl_const_Coefficient_t d)` [`related`]
- 10.33.2.24 `int ppl_Grid_bounds_from_above (ppl_const_Grid_t ph,
ppl_const_Linear_Expression_t le)` [`related`]
- 10.33.2.25 `int ppl_Grid_bounds_from_below (ppl_const_Grid_t ph,
ppl_const_Linear_Expression_t le)` [`related`]
- 10.33.2.26 `int ppl_Grid_concatenate_assign (ppl_Grid_t x, ppl_const_Grid_t y)` [`related`]
- 10.33.2.27 `int ppl_Grid_congruence_widening_assign (ppl_Grid_t x, ppl_const_Grid_t y)`
[`related`]
- 10.33.2.28 `int ppl_Grid_congruence_widening_assign_with_tokens (ppl_Grid_t x,
ppl_const_Grid_t y, unsigned * tp)` [`related`]

10.33.2.29 int ppl_Grid_constrains (ppl_Grid_t *ph*, ppl_dimension_type *var*) [related]

10.33.2.30 int ppl_Grid_contains_Grid (ppl_const_Grid_t *x*, ppl_const_Grid_t *y*) [related]

10.33.2.31 int ppl_Grid_contains_integer_point (ppl_const_Grid_t *ph*) [related]

10.33.2.32 int ppl_Grid_difference_assign (ppl_Grid_t *x*, ppl_const_Grid_t *y*) [related]

10.33.2.33 int ppl_Grid_drop_some_non_integer_points (ppl_Grid_t *ph*, int *complexity*)
[related]

10.33.2.34 int ppl_Grid_drop_some_non_integer_points_2 (ppl_Grid_t *ph*, ppl_dimension_type
ds[], size_t *n*, int *complexity*) [related]

10.33.2.35 int ppl_Grid_equals_Grid (ppl_const_Grid_t *x*, ppl_const_Grid_t *y*) [related]

10.33.2.36 int ppl_Grid_expand_space_dimension (ppl_Grid_t *ph*, ppl_dimension_type *d*,
ppl_dimension_type *m*) [related]

10.33.2.37 int ppl_Grid_external_memory_in_bytes (ppl_const_Grid_t *ps*, size_t * *sz*)
[related]

10.33.2.38 int ppl_Grid_fold_space_dimensions (ppl_Grid_t *ph*, ppl_dimension_type *ds*[], size_t
n, ppl_dimension_type *d*) [related]

- 10.33.2.39 `int ppl_Grid_frequency (ppl_const_Grid_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)` [**related**]
- 10.33.2.40 `int ppl_Grid_generalized_affine_image (ppl_Grid_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.33.2.41 `int ppl_Grid_generalized_affine_image_lhs_rhs (ppl_Grid_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t rhs)` [**related**]
- 10.33.2.42 `int ppl_Grid_generalized_affine_image_lhs_rhs_with_congruence (ppl_Grid_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t rhs, ppl_const_Coefficient_t m)` [**related**]
- 10.33.2.43 `int ppl_Grid_generalized_affine_image_with_congruence (ppl_Grid_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d, ppl_const_Coefficient_t m)` [**related**]
- 10.33.2.44 `int ppl_Grid_generalized_affine_preimage (ppl_Grid_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.33.2.45 `int ppl_Grid_generalized_affine_preimage_lhs_rhs (ppl_Grid_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t rhs)` [**related**]
- 10.33.2.46 `int ppl_Grid_generalized_affine_preimage_lhs_rhs_with_congruence (ppl_Grid_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t rhs, ppl_const_Coefficient_t m)` [**related**]

- 10.33.2.47 `int ppl_Grid_generalized_affine_preimage_with_congruence (ppl_Grid_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d, ppl_const_Coefficient_t m)` [**related**]
- 10.33.2.48 `int ppl_Grid_generator_widening_assign (ppl_Grid_t x, ppl_const_Grid_t y)` [**related**]
- 10.33.2.49 `int ppl_Grid_generator_widening_assign_with_tokens (ppl_Grid_t x, ppl_const_Grid_t y, unsigned * tp)` [**related**]
- 10.33.2.50 `int ppl_Grid_get_congruences (ppl_const_Grid_t ph, ppl_const_Congruence_System_t * pcs)` [**related**]
- 10.33.2.51 `int ppl_Grid_get_constraints (ppl_const_Grid_t ph, ppl_const_Constraint_System_t * pcs)` [**related**]
- 10.33.2.52 `int ppl_Grid_get_grid_generators (ppl_const_Grid_t ph, ppl_const_Grid_Generator_System_t * pcs)` [**related**]
- 10.33.2.53 `int ppl_Grid_get_minimized_congruences (ppl_const_Grid_t ph, ppl_const_Congruence_System_t * pcs)` [**related**]
- 10.33.2.54 `int ppl_Grid_get_minimized_constraints (ppl_const_Grid_t ph, ppl_const_Constraint_System_t * pcs)` [**related**]
- 10.33.2.55 `int ppl_Grid_get_minimized_grid_generators (ppl_const_Grid_t ph, ppl_const_Grid_Generator_System_t * pcs)` [**related**]

- 10.33.2.56 `int ppl_Grid_intersection_assign (ppl_Grid_t x, ppl_const_Grid_t y)` [**related**]
- 10.33.2.57 `int ppl_Grid_is_bounded (ppl_const_Grid_t ph)` [**related**]
- 10.33.2.58 `int ppl_Grid_is_discrete (ppl_const_Grid_t ph)` [**related**]
- 10.33.2.59 `int ppl_Grid_is_disjoint_from_Grid (ppl_const_Grid_t x, ppl_const_Grid_t y)`
[**related**]
- 10.33.2.60 `int ppl_Grid_is_empty (ppl_const_Grid_t ph)` [**related**]
- 10.33.2.61 `int ppl_Grid_is_topologically_closed (ppl_const_Grid_t ph)` [**related**]
- 10.33.2.62 `int ppl_Grid_is_universe (ppl_const_Grid_t ph)` [**related**]
- 10.33.2.63 `int ppl_Grid_limited_congruence_extrapolation_assign (ppl_Grid_t x,
ppl_const_Grid_t y, ppl_const_Congruence_System_t cs)` [**related**]
- 10.33.2.64 `int ppl_Grid_limited_congruence_extrapolation_assign_with_tokens (ppl_Grid_t x,
ppl_const_Grid_t y, ppl_const_Congruence_System_t cs, unsigned * tp)` [**related**]
- 10.33.2.65 `int ppl_Grid_limited_generator_extrapolation_assign (ppl_Grid_t x, ppl_const_Grid_t
y, ppl_const_Congruence_System_t cs)` [**related**]

- 10.33.2.66 `int ppl_Grid_limited_generator_extrapolation_assign_with_tokens (ppl_Grid_t x, ppl_const_Grid_t y, ppl_const_Congruence_System_t cs, unsigned * tp)` [related]
- 10.33.2.67 `int ppl_Grid_map_space_dimensions (ppl_Grid_t ph, ppl_dimension_type maps[], size_t n)` [related]
- 10.33.2.68 `int ppl_Grid_maximize (ppl_const_Grid_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [related]
- 10.33.2.69 `int ppl_Grid_maximize_with_point (ppl_const_Grid_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` [related]
- 10.33.2.70 `int ppl_Grid_minimize (ppl_const_Grid_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [related]
- 10.33.2.71 `int ppl_Grid_minimize_with_point (ppl_const_Grid_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` [related]
- 10.33.2.72 `int ppl_Grid_OK (ppl_const_Grid_t ph)` [related]
- 10.33.2.73 `int ppl_Grid_refine_with_congruence (ppl_Grid_t ph, ppl_const_Congruence_t c)` [related]
- 10.33.2.74 `int ppl_Grid_refine_with_congruences (ppl_Grid_t ph, ppl_const_Congruence_System_t cs)` [related]

- 10.33.2.75 `int ppl_Grid_refine_with_constraint (ppl_Grid_t ph, ppl_const_Constraint_t c)`
[related]
- 10.33.2.76 `int ppl_Grid_refine_with_constraints (ppl_Grid_t ph, ppl_const_Constraint_System_t cs)` [related]
- 10.33.2.77 `int ppl_Grid_relation_with_Congruence (ppl_const_Grid_t ph, ppl_const_Congruence_t c)` [related]
- 10.33.2.78 `int ppl_Grid_relation_with_Constraint (ppl_const_Grid_t ph, ppl_const_Constraint_t c)` [related]
- 10.33.2.79 `int ppl_Grid_relation_with_Generator (ppl_const_Grid_t ph, ppl_const_Generator_t c)` [related]
- 10.33.2.80 `int ppl_Grid_relation_with_Grid_Generator (ppl_const_Grid_t ph, ppl_const_Grid_Generator_t c)` [related]
- 10.33.2.81 `int ppl_Grid_remove_higher_space_dimensions (ppl_Grid_t ph, ppl_dimension_type d)` [related]
- 10.33.2.82 `int ppl_Grid_remove_space_dimensions (ppl_Grid_t ph, ppl_dimension_type ds[], size_t n)` [related]
- 10.33.2.83 `int ppl_Grid_simplify_using_context_assign (ppl_Grid_t x, ppl_const_Grid_t y)`
[related]

- 10.33.2.84 `int ppl_Grid_space_dimension (ppl_const_Grid_t ph, ppl_dimension_type * m)`
[related]
- 10.33.2.85 `int ppl_Grid_strictly_contains_Grid (ppl_const_Grid_t x, ppl_const_Grid_t y)`
[related]
- 10.33.2.86 `int ppl_Grid_time_elapse_assign (ppl_Grid_t x, ppl_const_Grid_t y)` [related]
- 10.33.2.87 `int ppl_Grid_topological_closure_assign (ppl_Grid_t ph)` [related]
- 10.33.2.88 `int ppl_Grid_total_memory_in_bytes (ppl_const_Grid_t ps, size_t * sz)` [related]
- 10.33.2.89 `int ppl_Grid_unconstrain_space_dimension (ppl_Grid_t ph, ppl_dimension_type var)`
[related]
- 10.33.2.90 `int ppl_Grid_unconstrain_space_dimensions (ppl_Grid_t ph, ppl_dimension_type ds[], size_t n)` [related]
- 10.33.2.91 `int ppl_Grid_upper_bound_assign (ppl_Grid_t x, ppl_const_Grid_t y)` [related]
- 10.33.2.92 `int ppl_Grid_upper_bound_assign_if_exact (ppl_Grid_t x, ppl_const_Grid_t y)`
[related]
- 10.33.2.93 `int ppl_Grid_widening_assign (ppl_Grid_t x, ppl_const_Grid_t y)` [related]

- 10.33.2.94 `int ppl_Grid_widening_assign_with_tokens (ppl_Grid_t x, ppl_const_Grid_t y, unsigned * tp)` [**related**]
- 10.33.2.95 `int ppl_Grid_wrap_assign (ppl_Grid_t ph, ppl_dimension_type ds[], size_t n, enum ppl_enum_Bounded_Integer_Type_Width w, enum ppl_enum_Bounded_Integer_Type_Representation r, enum ppl_enum_Bounded_Integer_Type_Overflow o, const ppl_const_Constraint_System_t * pcs, unsigned complexity_threshold, int wrap_individually)` [**related**]
- 10.33.2.96 `int ppl_new_Grid_from_BD_Shape_double (ppl_Grid_t * pph, ppl_const_BD_Shape_double_t ph)` [**related**]
- 10.33.2.97 `int ppl_new_Grid_from_BD_Shape_double_with_complexity (ppl_Grid_t * pph, ppl_const_BD_Shape_double_t ph, int complexity)` [**related**]
- 10.33.2.98 `int ppl_new_Grid_from_BD_Shape_float (ppl_Grid_t * pph, ppl_const_BD_Shape_float_t ph)` [**related**]
- 10.33.2.99 `int ppl_new_Grid_from_BD_Shape_float_with_complexity (ppl_Grid_t * pph, ppl_const_BD_Shape_float_t ph, int complexity)` [**related**]
- 10.33.2.100 `int ppl_new_Grid_from_BD_Shape_int16_t (ppl_Grid_t * pph, ppl_const_BD_Shape_int16_t_t ph)` [**related**]
- 10.33.2.101 `int ppl_new_Grid_from_BD_Shape_int16_t_with_complexity (ppl_Grid_t * pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)` [**related**]
- 10.33.2.102 `int ppl_new_Grid_from_BD_Shape_int32_t (ppl_Grid_t * pph, ppl_const_BD_Shape_int32_t_t ph)` [**related**]

- 10.33.2.103 `int ppl_new_Grid_from_BD_Shape_int32_t_with_complexity (ppl_Grid_t * pph,
ppl_const_BD_Shape_int32_t_t ph, int complexity)` [related]
- 10.33.2.104 `int ppl_new_Grid_from_BD_Shape_int64_t (ppl_Grid_t * pph,
ppl_const_BD_Shape_int64_t_t ph)` [related]
- 10.33.2.105 `int ppl_new_Grid_from_BD_Shape_int64_t_with_complexity (ppl_Grid_t * pph,
ppl_const_BD_Shape_int64_t_t ph, int complexity)` [related]
- 10.33.2.106 `int ppl_new_Grid_from_BD_Shape_int8_t (ppl_Grid_t * pph,
ppl_const_BD_Shape_int8_t_t ph)` [related]
- 10.33.2.107 `int ppl_new_Grid_from_BD_Shape_int8_t_with_complexity (ppl_Grid_t * pph,
ppl_const_BD_Shape_int8_t_t ph, int complexity)` [related]
- 10.33.2.108 `int ppl_new_Grid_from_BD_Shape_long_double (ppl_Grid_t * pph,
ppl_const_BD_Shape_long_double_t ph)` [related]
- 10.33.2.109 `int ppl_new_Grid_from_BD_Shape_long_double_with_complexity (ppl_Grid_t * pph,
ppl_const_BD_Shape_long_double_t ph, int complexity)` [related]
- 10.33.2.110 `int ppl_new_Grid_from_BD_Shape_mpq_class (ppl_Grid_t * pph,
ppl_const_BD_Shape_mpq_class_t ph)` [related]
- 10.33.2.111 `int ppl_new_Grid_from_BD_Shape_mpq_class_with_complexity (ppl_Grid_t * pph,
ppl_const_BD_Shape_mpq_class_t ph, int complexity)` [related]

- 10.33.2.112 `int ppl_new_Grid_from_BD_Shape_mpz_class (ppl_Grid_t * pph,
ppl_const_BD_Shape_mpz_class_t ph)` [`related`]
- 10.33.2.113 `int ppl_new_Grid_from_BD_Shape_mpz_class_with_complexity (ppl_Grid_t * pph,
ppl_const_BD_Shape_mpz_class_t ph, int complexity)` [`related`]
- 10.33.2.114 `int ppl_new_Grid_from_C_Polyhedron (ppl_Grid_t * pph, ppl_const_Polyhedron_t
ph)` [`related`]
- 10.33.2.115 `int ppl_new_Grid_from_C_Polyhedron_with_complexity (ppl_Grid_t * pph,
ppl_const_Polyhedron_t ph, int complexity)` [`related`]
- 10.33.2.116 `int ppl_new_Grid_from_Congruence_System (ppl_Grid_t * pph,
ppl_const_Congruence_System_t cs)` [`related`]
- 10.33.2.117 `int ppl_new_Grid_from_Constraint_System (ppl_Grid_t * pph,
ppl_const_Constraint_System_t cs)` [`related`]
- 10.33.2.118 `int ppl_new_Grid_from_Double_Box (ppl_Grid_t * pph, ppl_const_Double_Box_t
ph)` [`related`]
- 10.33.2.119 `int ppl_new_Grid_from_Double_Box_with_complexity (ppl_Grid_t * pph,
ppl_const_Double_Box_t ph, int complexity)` [`related`]
- 10.33.2.120 `int ppl_new_Grid_from_Float_Box (ppl_Grid_t * pph, ppl_const_Float_Box_t ph)`
[`related`]

- 10.33.2.121 `int ppl_new_Grid_from_Float_Box_with_complexity (ppl_Grid_t * pph,
ppl_const_Float_Box_t ph, int complexity)` [**related**]
- 10.33.2.122 `int ppl_new_Grid_from_Grid (ppl_Grid_t * pph, ppl_const_Grid_t ph)` [**related**]
- 10.33.2.123 `int ppl_new_Grid_from_Grid_Generator_System (ppl_Grid_t * pph,
ppl_const_Grid_Generator_System_t cs)` [**related**]
- 10.33.2.124 `int ppl_new_Grid_from_Grid_with_complexity (ppl_Grid_t * pph, ppl_const_Grid_t
ph, int complexity)` [**related**]
- 10.33.2.125 `int ppl_new_Grid_from_Int16_Box (ppl_Grid_t * pph, ppl_const_Int16_Box_t ph)`
[**related**]
- 10.33.2.126 `int ppl_new_Grid_from_Int16_Box_with_complexity (ppl_Grid_t * pph,
ppl_const_Int16_Box_t ph, int complexity)` [**related**]
- 10.33.2.127 `int ppl_new_Grid_from_Int32_Box (ppl_Grid_t * pph, ppl_const_Int32_Box_t ph)`
[**related**]
- 10.33.2.128 `int ppl_new_Grid_from_Int32_Box_with_complexity (ppl_Grid_t * pph,
ppl_const_Int32_Box_t ph, int complexity)` [**related**]
- 10.33.2.129 `int ppl_new_Grid_from_Int64_Box (ppl_Grid_t * pph, ppl_const_Int64_Box_t ph)`
[**related**]
- 10.33.2.130 `int ppl_new_Grid_from_Int64_Box_with_complexity (ppl_Grid_t * pph,
ppl_const_Int64_Box_t ph, int complexity)` [**related**]

- 10.33.2.131 `int ppl_new_Grid_from_Int8_Box (ppl_Grid_t * pph, ppl_const_Int8_Box_t ph)`
[related]
- 10.33.2.132 `int ppl_new_Grid_from_Int8_Box_with_complexity (ppl_Grid_t * pph,
ppl_const_Int8_Box_t ph, int complexity)` [related]
- 10.33.2.133 `int ppl_new_Grid_from_Long_Double_Box (ppl_Grid_t * pph,
ppl_const_Long_Double_Box_t ph)` [related]
- 10.33.2.134 `int ppl_new_Grid_from_Long_Double_Box_with_complexity (ppl_Grid_t * pph,
ppl_const_Long_Double_Box_t ph, int complexity)` [related]
- 10.33.2.135 `int ppl_new_Grid_from_NNC_Polyhedron (ppl_Grid_t * pph,
ppl_const_Polyhedron_t ph)` [related]
- 10.33.2.136 `int ppl_new_Grid_from_NNC_Polyhedron_with_complexity (ppl_Grid_t * pph,
ppl_const_Polyhedron_t ph, int complexity)` [related]
- 10.33.2.137 `int ppl_new_Grid_from_Octagonal_Shape_double (ppl_Grid_t * pph,
ppl_const_Octagonal_Shape_double_t ph)` [related]
- 10.33.2.138 `int ppl_new_Grid_from_Octagonal_Shape_double_with_complexity (ppl_Grid_t *
pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)` [related]
- 10.33.2.139 `int ppl_new_Grid_from_Octagonal_Shape_float (ppl_Grid_t * pph,
ppl_const_Octagonal_Shape_float_t ph)` [related]

- 10.33.2.140 `int ppl_new_Grid_from_Octagonal_Shape_float_with_complexity (ppl_Grid_t * pph,
ppl_const_Octagonal_Shape_float_t ph, int complexity)` [`related`]
- 10.33.2.141 `int ppl_new_Grid_from_Octagonal_Shape_int16_t (ppl_Grid_t * pph,
ppl_const_Octagonal_Shape_int16_t_t ph)` [`related`]
- 10.33.2.142 `int ppl_new_Grid_from_Octagonal_Shape_int16_t_with_complexity (ppl_Grid_t *
pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)` [`related`]
- 10.33.2.143 `int ppl_new_Grid_from_Octagonal_Shape_int32_t (ppl_Grid_t * pph,
ppl_const_Octagonal_Shape_int32_t_t ph)` [`related`]
- 10.33.2.144 `int ppl_new_Grid_from_Octagonal_Shape_int32_t_with_complexity (ppl_Grid_t *
pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)` [`related`]
- 10.33.2.145 `int ppl_new_Grid_from_Octagonal_Shape_int64_t (ppl_Grid_t * pph,
ppl_const_Octagonal_Shape_int64_t_t ph)` [`related`]
- 10.33.2.146 `int ppl_new_Grid_from_Octagonal_Shape_int64_t_with_complexity (ppl_Grid_t *
pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)` [`related`]
- 10.33.2.147 `int ppl_new_Grid_from_Octagonal_Shape_int8_t (ppl_Grid_t * pph,
ppl_const_Octagonal_Shape_int8_t_t ph)` [`related`]
- 10.33.2.148 `int ppl_new_Grid_from_Octagonal_Shape_int8_t_with_complexity (ppl_Grid_t *
pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)` [`related`]

- 10.33.2.149 `int ppl_new_Grid_from_Octagonal_Shape_long_double (ppl_Grid_t * pph,
ppl_const_Octagonal_Shape_long_double_t ph)` `[related]`
- 10.33.2.150 `int ppl_new_Grid_from_Octagonal_Shape_long_double_with_complexity
(ppl_Grid_t * pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)`
`[related]`
- 10.33.2.151 `int ppl_new_Grid_from_Octagonal_Shape_mpq_class (ppl_Grid_t * pph,
ppl_const_Octagonal_Shape_mpq_class_t ph)` `[related]`
- 10.33.2.152 `int ppl_new_Grid_from_Octagonal_Shape_mpq_class_with_complexity (ppl_Grid_t
* pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)` `[related]`
- 10.33.2.153 `int ppl_new_Grid_from_Octagonal_Shape_mpz_class (ppl_Grid_t * pph,
ppl_const_Octagonal_Shape_mpz_class_t ph)` `[related]`
- 10.33.2.154 `int ppl_new_Grid_from_Octagonal_Shape_mpz_class_with_complexity (ppl_Grid_t *
pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)` `[related]`
- 10.33.2.155 `int ppl_new_Grid_from_Rational_Box (ppl_Grid_t * pph, ppl_const_Rational_Box_t
ph)` `[related]`
- 10.33.2.156 `int ppl_new_Grid_from_Rational_Box_with_complexity (ppl_Grid_t * pph,
ppl_const_Rational_Box_t ph, int complexity)` `[related]`
- 10.33.2.157 `int ppl_new_Grid_from_space_dimension (ppl_Grid_t * pph, ppl_dimension_type d,
int empty)` `[related]`

10.33.2.158 `int ppl_new_Grid_from_Uint16_Box (ppl_Grid_t * pph, ppl_const_Uint16_Box_t ph)`
[related]

10.33.2.159 `int ppl_new_Grid_from_Uint16_Box_with_complexity (ppl_Grid_t * pph,
ppl_const_Uint16_Box_t ph, int complexity)` [related]

10.33.2.160 `int ppl_new_Grid_from_Uint32_Box (ppl_Grid_t * pph, ppl_const_Uint32_Box_t ph)`
[related]

10.33.2.161 `int ppl_new_Grid_from_Uint32_Box_with_complexity (ppl_Grid_t * pph,
ppl_const_Uint32_Box_t ph, int complexity)` [related]

10.33.2.162 `int ppl_new_Grid_from_Uint64_Box (ppl_Grid_t * pph, ppl_const_Uint64_Box_t ph)`
[related]

10.33.2.163 `int ppl_new_Grid_from_Uint64_Box_with_complexity (ppl_Grid_t * pph,
ppl_const_Uint64_Box_t ph, int complexity)` [related]

10.33.2.164 `int ppl_new_Grid_from_Uint8_Box (ppl_Grid_t * pph, ppl_const_Uint8_Box_t ph)`
[related]

10.33.2.165 `int ppl_new_Grid_from_Uint8_Box_with_complexity (ppl_Grid_t * pph,
ppl_const_Uint8_Box_t ph, int complexity)` [related]

10.33.2.166 `int ppl_new_Grid_from_Z_Box (ppl_Grid_t * pph, ppl_const_Z_Box_t ph)`
[related]

- 10.33.2.167 `int ppl_new_Grid_from_Z_Box_with_complexity (ppl_Grid_t * pph,
ppl_const_Z_Box_t ph, int complexity)` [**related**]
- 10.33.2.168 `int ppl_new_Grid_recycle_Congruence_System (ppl_Grid_t * pph,
ppl_Congruence_System_t cs)` [**related**]
- 10.33.2.169 `int ppl_new_Grid_recycle_Constraint_System (ppl_Grid_t * pph,
ppl_Constraint_System_t cs)` [**related**]
- 10.33.2.170 `int ppl_new_Grid_recycle_Grid_Generator_System (ppl_Grid_t * pph,
ppl_Grid_Generator_System_t cs)` [**related**]
- 10.33.2.171 `int ppl_one_affine_ranking_function_MS_Grid (ppl_const_Grid_t pset,
ppl_Generator_t point)` [**related**]
- 10.33.2.172 `int ppl_one_affine_ranking_function_MS_Grid_2 (ppl_const_Grid_t pset_before,
ppl_const_Grid_t pset_after, ppl_Generator_t point)` [**related**]
- 10.33.2.173 `int ppl_one_affine_ranking_function_PR_Grid (ppl_const_Grid_t pset,
ppl_Generator_t point)` [**related**]
- 10.33.2.174 `int ppl_one_affine_ranking_function_PR_Grid_2 (ppl_const_Grid_t pset_before,
ppl_const_Grid_t pset_after, ppl_Generator_t point)` [**related**]
- 10.33.2.175 `int ppl_termination_test_MS_Grid (ppl_const_Grid_t pset)` [**related**]
- 10.33.2.176 `int ppl_termination_test_MS_Grid_2 (ppl_const_Grid_t pset_before,
ppl_const_Grid_t pset_after)` [**related**]

10.33.2.177 int ppl_termination_test_PR_Grid (ppl_const_Grid_t *pset*) [**related**]

10.33.2.178 int ppl_termination_test_PR_Grid_2 (ppl_const_Grid_t *pset_before*,
ppl_const_Grid_t *pset_after*) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.34 ppl_Int16_Box_tag Interface Reference

Types and functions for [ppl_Int16_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- int [ppl_delete_Int16_Box](#) (ppl_const_Int16_Box_t ph)
- int [ppl_new_Int16_Box_from_space_dimension](#) (ppl_Int16_Box_t *pph, [ppl_dimension_type](#) d, int empty)
- int [ppl_new_Int16_Box_from_Int8_Box](#) (ppl_Int16_Box_t *pph, ppl_const_Int8_Box_t ph)
- int [ppl_new_Int16_Box_from_Int16_Box](#) (ppl_Int16_Box_t *pph, ppl_const_Int16_Box_t ph)
- int [ppl_new_Int16_Box_from_Int32_Box](#) (ppl_Int16_Box_t *pph, ppl_const_Int32_Box_t ph)
- int [ppl_new_Int16_Box_from_Int64_Box](#) (ppl_Int16_Box_t *pph, ppl_const_Int64_Box_t ph)
- int [ppl_new_Int16_Box_from_Uint8_Box](#) (ppl_Int16_Box_t *pph, ppl_const_Uint8_Box_t ph)
- int [ppl_new_Int16_Box_from_Uint16_Box](#) (ppl_Int16_Box_t *pph, ppl_const_Uint16_Box_t ph)
- int [ppl_new_Int16_Box_from_Uint32_Box](#) (ppl_Int16_Box_t *pph, ppl_const_Uint32_Box_t ph)
- int [ppl_new_Int16_Box_from_Uint64_Box](#) (ppl_Int16_Box_t *pph, ppl_const_Uint64_Box_t ph)
- int [ppl_new_Int16_Box_from_Z_Box](#) (ppl_Int16_Box_t *pph, ppl_const_Z_Box_t ph)
- int [ppl_new_Int16_Box_from_Rational_Box](#) (ppl_Int16_Box_t *pph, ppl_const_Rational_Box_t ph)
- int [ppl_new_Int16_Box_from_BD_Shape_int8_t](#) (ppl_Int16_Box_t *pph, ppl_const_BD_Shape_int8_t_t ph)
- int [ppl_new_Int16_Box_from_BD_Shape_int16_t](#) (ppl_Int16_Box_t *pph, ppl_const_BD_Shape_int16_t_t ph)
- int [ppl_new_Int16_Box_from_BD_Shape_int32_t](#) (ppl_Int16_Box_t *pph, ppl_const_BD_Shape_int32_t_t ph)
- int [ppl_new_Int16_Box_from_BD_Shape_int64_t](#) (ppl_Int16_Box_t *pph, ppl_const_BD_Shape_int64_t_t ph)
- int [ppl_new_Int16_Box_from_BD_Shape_mpz_class](#) (ppl_Int16_Box_t *pph, ppl_const_BD_Shape_mpz_class_t ph)
- int [ppl_new_Int16_Box_from_BD_Shape_mpq_class](#) (ppl_Int16_Box_t *pph, ppl_const_BD_Shape_mpq_class_t ph)
- int [ppl_new_Int16_Box_from_Octagonal_Shape_int8_t](#) (ppl_Int16_Box_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph)

- int [ppl_new_Int16_Box_from_Octagonal_Shape_int16_t](#) (ppl_Int16_Box_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph)
- int [ppl_new_Int16_Box_from_Octagonal_Shape_int32_t](#) (ppl_Int16_Box_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph)
- int [ppl_new_Int16_Box_from_Octagonal_Shape_int64_t](#) (ppl_Int16_Box_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph)
- int [ppl_new_Int16_Box_from_Octagonal_Shape_mpz_class](#) (ppl_Int16_Box_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph)
- int [ppl_new_Int16_Box_from_Octagonal_Shape_mpq_class](#) (ppl_Int16_Box_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph)
- int [ppl_new_Int16_Box_from_C_Polyhedron](#) (ppl_Int16_Box_t *pph, ppl_const_Polyhedron_t ph)
- int [ppl_new_Int16_Box_from_NNC_Polyhedron](#) (ppl_Int16_Box_t *pph, ppl_const_Polyhedron_t ph)
- int [ppl_new_Int16_Box_from_Grid](#) (ppl_Int16_Box_t *pph, ppl_const_Grid_t ph)
- int [ppl_new_Int16_Box_from_Float_Box](#) (ppl_Int16_Box_t *pph, ppl_const_Float_Box_t ph)
- int [ppl_new_Int16_Box_from_BD_Shape_float](#) (ppl_Int16_Box_t *pph, ppl_const_BD_Shape_float_t ph)
- int [ppl_new_Int16_Box_from_Octagonal_Shape_float](#) (ppl_Int16_Box_t *pph, ppl_const_Octagonal_Shape_float_t ph)
- int [ppl_new_Int16_Box_from_Double_Box](#) (ppl_Int16_Box_t *pph, ppl_const_Double_Box_t ph)
- int [ppl_new_Int16_Box_from_BD_Shape_double](#) (ppl_Int16_Box_t *pph, ppl_const_BD_Shape_double_t ph)
- int [ppl_new_Int16_Box_from_Octagonal_Shape_double](#) (ppl_Int16_Box_t *pph, ppl_const_Octagonal_Shape_double_t ph)
- int [ppl_new_Int16_Box_from_Long_Double_Box](#) (ppl_Int16_Box_t *pph, ppl_const_Long_Double_Box_t ph)
- int [ppl_new_Int16_Box_from_BD_Shape_long_double](#) (ppl_Int16_Box_t *pph, ppl_const_BD_Shape_long_double_t ph)
- int [ppl_new_Int16_Box_from_Octagonal_Shape_long_double](#) (ppl_Int16_Box_t *pph, ppl_const_Octagonal_Shape_long_double_t ph)
- int [ppl_new_Int16_Box_from_Int8_Box_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_Int8_Box_t ph, int complexity)
- int [ppl_new_Int16_Box_from_Int16_Box_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_Int16_Box_t ph, int complexity)
- int [ppl_new_Int16_Box_from_Int32_Box_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_Int32_Box_t ph, int complexity)
- int [ppl_new_Int16_Box_from_Int64_Box_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_Int64_Box_t ph, int complexity)
- int [ppl_new_Int16_Box_from_Uint8_Box_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_Uint8_Box_t ph, int complexity)
- int [ppl_new_Int16_Box_from_Uint16_Box_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_Uint16_Box_t ph, int complexity)
- int [ppl_new_Int16_Box_from_Uint32_Box_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_Uint32_Box_t ph, int complexity)
- int [ppl_new_Int16_Box_from_Uint64_Box_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_Uint64_Box_t ph, int complexity)
- int [ppl_new_Int16_Box_from_Z_Box_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_Z_Box_t ph, int complexity)
- int [ppl_new_Int16_Box_from_Rational_Box_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_Rational_Box_t ph, int complexity)
- int [ppl_new_Int16_Box_from_BD_Shape_int8_t_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)

- int [ppl_new_Int16_Box_from_BD_Shape_int16_t_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)
- int [ppl_new_Int16_Box_from_BD_Shape_int32_t_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)
- int [ppl_new_Int16_Box_from_BD_Shape_int64_t_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)
- int [ppl_new_Int16_Box_from_BD_Shape_mpz_class_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_Int16_Box_from_BD_Shape_mpq_class_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_Int16_Box_from_Octagonal_Shape_int8_t_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)
- int [ppl_new_Int16_Box_from_Octagonal_Shape_int16_t_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)
- int [ppl_new_Int16_Box_from_Octagonal_Shape_int32_t_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)
- int [ppl_new_Int16_Box_from_Octagonal_Shape_int64_t_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)
- int [ppl_new_Int16_Box_from_Octagonal_Shape_mpz_class_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_Int16_Box_from_Octagonal_Shape_mpq_class_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_Int16_Box_from_C_Polyhedron_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_Int16_Box_from_NNC_Polyhedron_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_Int16_Box_from_Grid_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_Grid_t ph, int complexity)
- int [ppl_new_Int16_Box_from_Float_Box_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_Float_Box_t ph, int complexity)
- int [ppl_new_Int16_Box_from_BD_Shape_float_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_BD_Shape_float_t ph, int complexity)
- int [ppl_new_Int16_Box_from_Octagonal_Shape_float_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)
- int [ppl_new_Int16_Box_from_Double_Box_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_Double_Box_t ph, int complexity)
- int [ppl_new_Int16_Box_from_BD_Shape_double_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_BD_Shape_double_t ph, int complexity)
- int [ppl_new_Int16_Box_from_Octagonal_Shape_double_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)
- int [ppl_new_Int16_Box_from_Long_Double_Box_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- int [ppl_new_Int16_Box_from_BD_Shape_long_double_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity)
- int [ppl_new_Int16_Box_from_Octagonal_Shape_long_double_with_complexity](#) (ppl_Int16_Box_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)
- int [ppl_new_Int16_Box_from_Constraint_System](#) (ppl_Int16_Box_t *pph, ppl_const_Constraint_System_t cs)
- int [ppl_new_Int16_Box_from_Congruence_System](#) (ppl_Int16_Box_t *pph, ppl_const_Congruence_System_t cs)
- int [ppl_new_Int16_Box_from_Generator_System](#) (ppl_Int16_Box_t *pph, ppl_const_Generator_System_t cs)

- int [ppl_Int16_Box_space_dimension](#) (ppl_const_Int16_Box_t ph, [ppl_dimension_type](#) *m)
- int [ppl_Int16_Box_affine_dimension](#) (ppl_const_Int16_Box_t ph, [ppl_dimension_type](#) *m)
- int [ppl_Int16_Box_relation_with_Constraint](#) (ppl_const_Int16_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Int16_Box_relation_with_Generator](#) (ppl_const_Int16_Box_t ph, ppl_const_Generator_t c)
- int [ppl_Int16_Box_relation_with_Congruence](#) (ppl_const_Int16_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Int16_Box_get_constraints](#) (ppl_const_Int16_Box_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_Int16_Box_get_congruences](#) (ppl_const_Int16_Box_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_Int16_Box_get_minimized_constraints](#) (ppl_const_Int16_Box_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_Int16_Box_get_minimized_congruences](#) (ppl_const_Int16_Box_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_Int16_Box_is_empty](#) (ppl_const_Int16_Box_t ph)
- int [ppl_Int16_Box_is_universe](#) (ppl_const_Int16_Box_t ph)
- int [ppl_Int16_Box_is_bounded](#) (ppl_const_Int16_Box_t ph)
- int [ppl_Int16_Box_contains_integer_point](#) (ppl_const_Int16_Box_t ph)
- int [ppl_Int16_Box_is_topologically_closed](#) (ppl_const_Int16_Box_t ph)
- int [ppl_Int16_Box_is_discrete](#) (ppl_const_Int16_Box_t ph)
- int [ppl_Int16_Box_topological_closure_assign](#) (ppl_Int16_Box_t ph)
- int [ppl_Int16_Box_bounds_from_above](#) (ppl_const_Int16_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Int16_Box_bounds_from_below](#) (ppl_const_Int16_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Int16_Box_maximize](#) (ppl_const_Int16_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Int16_Box_minimize](#) (ppl_const_Int16_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Int16_Box_maximize_with_point](#) (ppl_const_Int16_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Int16_Box_minimize_with_point](#) (ppl_const_Int16_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Int16_Box_frequency](#) (ppl_const_Int16_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)
- int [ppl_Int16_Box_contains_Int16_Box](#) (ppl_const_Int16_Box_t x, ppl_const_Int16_Box_t y)
- int [ppl_Int16_Box_strictly_contains_Int16_Box](#) (ppl_const_Int16_Box_t x, ppl_const_Int16_Box_t y)
- int [ppl_Int16_Box_is_disjoint_from_Int16_Box](#) (ppl_const_Int16_Box_t x, ppl_const_Int16_Box_t y)
- int [ppl_Int16_Box_equals_Int16_Box](#) (ppl_const_Int16_Box_t x, ppl_const_Int16_Box_t y)
- int [ppl_Int16_Box_OK](#) (ppl_const_Int16_Box_t ph)
- int [ppl_Int16_Box_add_constraint](#) (ppl_Int16_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Int16_Box_add_congruence](#) (ppl_Int16_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Int16_Box_add_constraints](#) (ppl_Int16_Box_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Int16_Box_add_congruences](#) (ppl_Int16_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Int16_Box_refine_with_constraint](#) (ppl_Int16_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Int16_Box_refine_with_congruence](#) (ppl_Int16_Box_t ph, ppl_const_Congruence_t c)

- int [ppl_Int16_Box_refine_with_constraints](#) (ppl_Int16_Box_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Int16_Box_refine_with_congruences](#) (ppl_Int16_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Int16_Box_intersection_assign](#) (ppl_Int16_Box_t x, ppl_const_Int16_Box_t y)
- int [ppl_Int16_Box_upper_bound_assign](#) (ppl_Int16_Box_t x, ppl_const_Int16_Box_t y)
- int [ppl_Int16_Box_difference_assign](#) (ppl_Int16_Box_t x, ppl_const_Int16_Box_t y)
- int [ppl_Int16_Box_concatenate_assign](#) (ppl_Int16_Box_t x, ppl_const_Int16_Box_t y)
- int [ppl_Int16_Box_time_elapse_assign](#) (ppl_Int16_Box_t x, ppl_const_Int16_Box_t y)
- int [ppl_Int16_Box_upper_bound_assign_if_exact](#) (ppl_Int16_Box_t x, ppl_const_Int16_Box_t y)
- int [ppl_Int16_Box_simplify_using_context_assign](#) (ppl_Int16_Box_t x, ppl_const_Int16_Box_t y)
- int [ppl_Int16_Box_constrains](#) (ppl_Int16_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Int16_Box_unconstrain_space_dimension](#) (ppl_Int16_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Int16_Box_unconstrain_space_dimensions](#) (ppl_Int16_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Int16_Box_affine_image](#) (ppl_Int16_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Int16_Box_affine_preimage](#) (ppl_Int16_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Int16_Box_bounded_affine_image](#) (ppl_Int16_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Int16_Box_bounded_affine_preimage](#) (ppl_Int16_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Int16_Box_generalized_affine_image](#) (ppl_Int16_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Int16_Box_generalized_affine_preimage](#) (ppl_Int16_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Int16_Box_generalized_affine_image_lhs_rhs](#) (ppl_Int16_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Int16_Box_generalized_affine_preimage_lhs_rhs](#) (ppl_Int16_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Int16_Box_add_space_dimensions_and_embed](#) (ppl_Int16_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Int16_Box_add_space_dimensions_and_project](#) (ppl_Int16_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Int16_Box_remove_space_dimensions](#) (ppl_Int16_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Int16_Box_remove_higher_space_dimensions](#) (ppl_Int16_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Int16_Box_expand_space_dimension](#) (ppl_Int16_Box_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Int16_Box_fold_space_dimensions](#) (ppl_Int16_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_Int16_Box_map_space_dimensions](#) (ppl_Int16_Box_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_Int16_Box_drop_some_non_integer_points](#) (ppl_Int16_Box_t ph, int complexity)
- int [ppl_Int16_Box_drop_some_non_integer_points_2](#) (ppl_Int16_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_Int16_Box_external_memory_in_bytes](#) (ppl_const_Int16_Box_t ps, size_t *sz)
- int [ppl_Int16_Box_total_memory_in_bytes](#) (ppl_const_Int16_Box_t ps, size_t *sz)
- int [ppl_Int16_Box_CC76_widening_assign_with_tokens](#) (ppl_Int16_Box_t x, ppl_const_Int16_Box_t y, unsigned *tp)

- int [ppl_Int16_Box_CC76_widening_assign](#) (ppl_Int16_Box_t x, ppl_const_Int16_Box_t y)
- int [ppl_Int16_Box_widening_assign_with_tokens](#) (ppl_Int16_Box_t x, ppl_const_Int16_Box_t y, unsigned *tp)
- int [ppl_Int16_Box_widening_assign](#) (ppl_Int16_Box_t x, ppl_const_Int16_Box_t y)
- int [ppl_Int16_Box_limited_CC76_extrapolation_assign_with_tokens](#) (ppl_Int16_Box_t x, ppl_const_Int16_Box_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- int [ppl_Int16_Box_limited_CC76_extrapolation_assign](#) (ppl_Int16_Box_t x, ppl_const_Int16_Box_t y, ppl_const_Constraint_System_t cs)
- int [ppl_Int16_Box_linear_partition](#) (ppl_const_Int16_Box_t x, ppl_const_Int16_Box_t y, ppl_Int16_Box_t *p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest)
- int [ppl_Int16_Box_wrap_assign](#) (ppl_Int16_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, enum [ppl_enum_Bounded_Integer_Type_Width](#) w, enum [ppl_enum_Bounded_Integer_Type_Representation](#) r, enum [ppl_enum_Bounded_Integer_Type_Overflow](#) o, const ppl_const_Constraint_System_t *pcs, unsigned complexity_threshold, int wrap_individually)
- int [ppl_new_Int16_Box_recycle_Constraint_System](#) (ppl_Int16_Box_t *pph, ppl_Constraint_System_t cs)
- int [ppl_new_Int16_Box_recycle_Congruence_System](#) (ppl_Int16_Box_t *pph, ppl_Congruence_System_t cs)
- int [ppl_new_Int16_Box_recycle_Generator_System](#) (ppl_Int16_Box_t *pph, ppl_Generator_System_t cs)
- int [ppl_assign_Int16_Box_from_Int16_Box](#) (ppl_Int16_Box_t dst, ppl_const_Int16_Box_t src)
- int [ppl_Int16_Box_add_recycled_constraints](#) (ppl_Int16_Box_t ph, ppl_Constraint_System_t cs)
- int [ppl_Int16_Box_add_recycled_congruences](#) (ppl_Int16_Box_t ph, ppl_Congruence_System_t cs)
- int [ppl_termination_test_MS_Int16_Box](#) (ppl_const_Int16_Box_t pset)
- int [ppl_termination_test_PR_Int16_Box](#) (ppl_const_Int16_Box_t pset)
- int [ppl_one_affine_ranking_function_MS_Int16_Box](#) (ppl_const_Int16_Box_t pset, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_Int16_Box](#) (ppl_const_Int16_Box_t pset, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_Int16_Box](#) (ppl_const_Int16_Box_t pset, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_Int16_Box](#) (ppl_const_Int16_Box_t pset, ppl_Polyhedron_t ph)
- int [ppl_termination_test_MS_Int16_Box_2](#) (ppl_const_Int16_Box_t pset_before, ppl_const_Int16_Box_t pset_after)
- int [ppl_termination_test_PR_Int16_Box_2](#) (ppl_const_Int16_Box_t pset_before, ppl_const_Int16_Box_t pset_after)
- int [ppl_one_affine_ranking_function_MS_Int16_Box_2](#) (ppl_const_Int16_Box_t pset_before, ppl_const_Int16_Box_t pset_after, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_Int16_Box_2](#) (ppl_const_Int16_Box_t pset_before, ppl_const_Int16_Box_t pset_after, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_Int16_Box_2](#) (ppl_const_Int16_Box_t pset_before, ppl_const_Int16_Box_t pset_after, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_Int16_Box_2](#) (ppl_const_Int16_Box_t pset_before, ppl_const_Int16_Box_t pset_after, ppl_Polyhedron_t ph)

10.34.1 Detailed Description

Types and functions for [ppl_Int16_Box_tag](#).

10.34.2 Friends And Related Function Documentation

10.34.2.1 `int ppl_all_affine_ranking_functions_MS_Int16_Box (ppl_const_Int16_Box_t pset,
ppl_Polyhedron_t ph)` [**related**]

10.34.2.2 `int ppl_all_affine_ranking_functions_MS_Int16_Box_2 (ppl_const_Int16_Box_t
pset_before, ppl_const_Int16_Box_t pset_after, ppl_Polyhedron_t ph)` [**related**]

10.34.2.3 `int ppl_all_affine_ranking_functions_PR_Int16_Box (ppl_const_Int16_Box_t pset,
ppl_Polyhedron_t ph)` [**related**]

10.34.2.4 `int ppl_all_affine_ranking_functions_PR_Int16_Box_2 (ppl_const_Int16_Box_t
pset_before, ppl_const_Int16_Box_t pset_after, ppl_Polyhedron_t ph)` [**related**]

10.34.2.5 `int ppl_assign_Int16_Box_from_Int16_Box (ppl_Int16_Box_t dst,
ppl_const_Int16_Box_t src)` [**related**]

10.34.2.6 `int ppl_delete_Int16_Box (ppl_const_Int16_Box_t ph)` [**related**]

10.34.2.7 `int ppl_Int16_Box_add_congruence (ppl_Int16_Box_t ph, ppl_const_Congruence_t c)`
[**related**]

10.34.2.8 `int ppl_Int16_Box_add_congruences (ppl_Int16_Box_t ph,
ppl_const_Congruence_System_t cs)` [**related**]

10.34.2.9 `int ppl_Int16_Box_add_constraint (ppl_Int16_Box_t ph, ppl_const_Constraint_t c)`
[**related**]

- 10.34.2.10 `int ppl_Int16_Box_add_constraints (ppl_Int16_Box_t ph,
ppl_const_Constraint_System_t cs)` [`related`]

- 10.34.2.11 `int ppl_Int16_Box_add_recycled_congruences (ppl_Int16_Box_t ph,
ppl_Congruence_System_t cs)` [`related`]

- 10.34.2.12 `int ppl_Int16_Box_add_recycled_constraints (ppl_Int16_Box_t ph,
ppl_Constraint_System_t cs)` [`related`]

- 10.34.2.13 `int ppl_Int16_Box_add_space_dimensions_and_embed (ppl_Int16_Box_t ph,
ppl_dimension_type d)` [`related`]

- 10.34.2.14 `int ppl_Int16_Box_add_space_dimensions_and_project (ppl_Int16_Box_t ph,
ppl_dimension_type d)` [`related`]

- 10.34.2.15 `int ppl_Int16_Box_affine_dimension (ppl_const_Int16_Box_t ph, ppl_dimension_type
* m)` [`related`]

- 10.34.2.16 `int ppl_Int16_Box_affine_image (ppl_Int16_Box_t ph, ppl_dimension_type var,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]

- 10.34.2.17 `int ppl_Int16_Box_affine_preimage (ppl_Int16_Box_t ph, ppl_dimension_type var,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]

- 10.34.2.18 `int ppl_Int16_Box_bounded_affine_image (ppl_Int16_Box_t ph, ppl_dimension_type
var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub,
ppl_const_Coefficient_t d)` [`related`]

- 10.34.2.19 `int ppl_Int16_Box_bounded_affine_preimage (ppl_Int16_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [`related`]
- 10.34.2.20 `int ppl_Int16_Box_bounds_from_above (ppl_const_Int16_Box_t ph, ppl_const_Linear_Expression_t le)` [`related`]
- 10.34.2.21 `int ppl_Int16_Box_bounds_from_below (ppl_const_Int16_Box_t ph, ppl_const_Linear_Expression_t le)` [`related`]
- 10.34.2.22 `int ppl_Int16_Box_CC76_widening_assign (ppl_Int16_Box_t x, ppl_const_Int16_Box_t y)` [`related`]
- 10.34.2.23 `int ppl_Int16_Box_CC76_widening_assign_with_tokens (ppl_Int16_Box_t x, ppl_const_Int16_Box_t y, unsigned * tp)` [`related`]
- 10.34.2.24 `int ppl_Int16_Box_concatenate_assign (ppl_Int16_Box_t x, ppl_const_Int16_Box_t y)` [`related`]
- 10.34.2.25 `int ppl_Int16_Box_constrains (ppl_Int16_Box_t ph, ppl_dimension_type var)` [`related`]
- 10.34.2.26 `int ppl_Int16_Box_contains_Int16_Box (ppl_const_Int16_Box_t x, ppl_const_Int16_Box_t y)` [`related`]
- 10.34.2.27 `int ppl_Int16_Box_contains_integer_point (ppl_const_Int16_Box_t ph)` [`related`]

- 10.34.2.28 `int ppl_Int16_Box_difference_assign (ppl_Int16_Box_t x, ppl_const_Int16_Box_t y)`
[related]
- 10.34.2.29 `int ppl_Int16_Box_drop_some_non_integer_points (ppl_Int16_Box_t ph, int complexity)` [related]
- 10.34.2.30 `int ppl_Int16_Box_drop_some_non_integer_points_2 (ppl_Int16_Box_t ph, ppl_dimension_type ds[], size_t n, int complexity)` [related]
- 10.34.2.31 `int ppl_Int16_Box_equals_Int16_Box (ppl_const_Int16_Box_t x, ppl_const_Int16_Box_t y)` [related]
- 10.34.2.32 `int ppl_Int16_Box_expand_space_dimension (ppl_Int16_Box_t ph, ppl_dimension_type d, ppl_dimension_type m)` [related]
- 10.34.2.33 `int ppl_Int16_Box_external_memory_in_bytes (ppl_const_Int16_Box_t ps, size_t * sz)`
[related]
- 10.34.2.34 `int ppl_Int16_Box_fold_space_dimensions (ppl_Int16_Box_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [related]
- 10.34.2.35 `int ppl_Int16_Box_frequency (ppl_const_Int16_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)` [related]
- 10.34.2.36 `int ppl_Int16_Box_generalized_affine_image (ppl_Int16_Box_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [related]

- 10.34.2.37 `int ppl_Int16_Box_generalized_affine_image_lhs_rhs (ppl_Int16_Box_t ph,
ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relysym,
ppl_const_Linear_Expression_t rhs)` [`related`]
- 10.34.2.38 `int ppl_Int16_Box_generalized_affine_preimage (ppl_Int16_Box_t ph,
ppl_dimension_type var, enum ppl_enum_Constraint_Type relysym,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.34.2.39 `int ppl_Int16_Box_generalized_affine_preimage_lhs_rhs (ppl_Int16_Box_t ph,
ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relysym,
ppl_const_Linear_Expression_t rhs)` [`related`]
- 10.34.2.40 `int ppl_Int16_Box_get_congruences (ppl_const_Int16_Box_t ph,
ppl_const_Congruence_System_t * pcs)` [`related`]
- 10.34.2.41 `int ppl_Int16_Box_get_constraints (ppl_const_Int16_Box_t ph,
ppl_const_Constraint_System_t * pcs)` [`related`]
- 10.34.2.42 `int ppl_Int16_Box_get_minimized_congruences (ppl_const_Int16_Box_t ph,
ppl_const_Congruence_System_t * pcs)` [`related`]
- 10.34.2.43 `int ppl_Int16_Box_get_minimized_constraints (ppl_const_Int16_Box_t ph,
ppl_const_Constraint_System_t * pcs)` [`related`]
- 10.34.2.44 `int ppl_Int16_Box_intersection_assign (ppl_Int16_Box_t x, ppl_const_Int16_Box_t y)`
[`related`]
- 10.34.2.45 `int ppl_Int16_Box_is_bounded (ppl_const_Int16_Box_t ph)` [`related`]

- 10.34.2.46 `int ppl_Int16_Box_is_discrete (ppl_const_Int16_Box_t ph)` `[related]`
- 10.34.2.47 `int ppl_Int16_Box_is_disjoint_from_Int16_Box (ppl_const_Int16_Box_t x,
ppl_const_Int16_Box_t y)` `[related]`
- 10.34.2.48 `int ppl_Int16_Box_is_empty (ppl_const_Int16_Box_t ph)` `[related]`
- 10.34.2.49 `int ppl_Int16_Box_is_topologically_closed (ppl_const_Int16_Box_t ph)` `[related]`
- 10.34.2.50 `int ppl_Int16_Box_is_universe (ppl_const_Int16_Box_t ph)` `[related]`
- 10.34.2.51 `int ppl_Int16_Box_limited_CC76_extrapolation_assign (ppl_Int16_Box_t x,
ppl_const_Int16_Box_t y, ppl_const_Constraint_System_t cs)` `[related]`
- 10.34.2.52 `int ppl_Int16_Box_limited_CC76_extrapolation_assign_with_tokens (ppl_Int16_Box_t
x, ppl_const_Int16_Box_t y, ppl_const_Constraint_System_t cs, unsigned * tp)`
`[related]`
- 10.34.2.53 `int ppl_Int16_Box_linear_partition (ppl_const_Int16_Box_t x, ppl_const_Int16_Box_t
y, ppl_Int16_Box_t * p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t * p_rest)`
`[related]`
- 10.34.2.54 `int ppl_Int16_Box_map_space_dimensions (ppl_Int16_Box_t ph, ppl_dimension_type
maps[], size_t n)` `[related]`
- 10.34.2.55 `int ppl_Int16_Box_maximize (ppl_const_Int16_Box_t ph, ppl_const_Linear_Expression_t
le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)`
`[related]`

- 10.34.2.56 `int ppl_Int16_Box_maximize_with_point (ppl_const_Int16_Box_t ph,
ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d,
int * poptimum, ppl_Generator_t point)` [`related`]
- 10.34.2.57 `int ppl_Int16_Box_minimize (ppl_const_Int16_Box_t ph, ppl_const_Linear_Expression_t le,
ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [`related`]
- 10.34.2.58 `int ppl_Int16_Box_minimize_with_point (ppl_const_Int16_Box_t ph,
ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d,
int * poptimum, ppl_Generator_t point)` [`related`]
- 10.34.2.59 `int ppl_Int16_Box_OK (ppl_const_Int16_Box_t ph)` [`related`]
- 10.34.2.60 `int ppl_Int16_Box_refine_with_congruence (ppl_Int16_Box_t ph,
ppl_const_Congruence_t c)` [`related`]
- 10.34.2.61 `int ppl_Int16_Box_refine_with_congruences (ppl_Int16_Box_t ph,
ppl_const_Congruence_System_t cs)` [`related`]
- 10.34.2.62 `int ppl_Int16_Box_refine_with_constraint (ppl_Int16_Box_t ph,
ppl_const_Constraint_t c)` [`related`]
- 10.34.2.63 `int ppl_Int16_Box_refine_with_constraints (ppl_Int16_Box_t ph,
ppl_const_Constraint_System_t cs)` [`related`]
- 10.34.2.64 `int ppl_Int16_Box_relation_with_Congruence (ppl_const_Int16_Box_t ph,
ppl_const_Congruence_t c)` [`related`]

- 10.34.2.65 `int ppl_Int16_Box_relation_with_Constraint (ppl_const_Int16_Box_t ph,
ppl_const_Constraint_t c)` [`related`]

- 10.34.2.66 `int ppl_Int16_Box_relation_with_Generator (ppl_const_Int16_Box_t ph,
ppl_const_Generator_t c)` [`related`]

- 10.34.2.67 `int ppl_Int16_Box_remove_higher_space_dimensions (ppl_Int16_Box_t ph,
ppl_dimension_type d)` [`related`]

- 10.34.2.68 `int ppl_Int16_Box_remove_space_dimensions (ppl_Int16_Box_t ph,
ppl_dimension_type ds[], size_t n)` [`related`]

- 10.34.2.69 `int ppl_Int16_Box_simplify_using_context_assign (ppl_Int16_Box_t x,
ppl_const_Int16_Box_t y)` [`related`]

- 10.34.2.70 `int ppl_Int16_Box_space_dimension (ppl_const_Int16_Box_t ph, ppl_dimension_type
* m)` [`related`]

- 10.34.2.71 `int ppl_Int16_Box_strictly_contains_Int16_Box (ppl_const_Int16_Box_t x,
ppl_const_Int16_Box_t y)` [`related`]

- 10.34.2.72 `int ppl_Int16_Box_time_elapse_assign (ppl_Int16_Box_t x, ppl_const_Int16_Box_t y)`
[`related`]

- 10.34.2.73 `int ppl_Int16_Box_topological_closure_assign (ppl_Int16_Box_t ph)` [`related`]

- 10.34.2.74 `int ppl_Int16_Box_total_memory_in_bytes (ppl_const_Int16_Box_t ps, size_t * sz)`
[`related`]

- 10.34.2.75 `int ppl_Int16_Box_unconstrain_space_dimension (ppl_Int16_Box_t ph,
ppl_dimension_type var)` [`related`]
- 10.34.2.76 `int ppl_Int16_Box_unconstrain_space_dimensions (ppl_Int16_Box_t ph,
ppl_dimension_type ds[], size_t n)` [`related`]
- 10.34.2.77 `int ppl_Int16_Box_upper_bound_assign (ppl_Int16_Box_t x, ppl_const_Int16_Box_t
y)` [`related`]
- 10.34.2.78 `int ppl_Int16_Box_upper_bound_assign_if_exact (ppl_Int16_Box_t x,
ppl_const_Int16_Box_t y)` [`related`]
- 10.34.2.79 `int ppl_Int16_Box_widening_assign (ppl_Int16_Box_t x, ppl_const_Int16_Box_t y)`
[`related`]
- 10.34.2.80 `int ppl_Int16_Box_widening_assign_with_tokens (ppl_Int16_Box_t x,
ppl_const_Int16_Box_t y, unsigned *tp)` [`related`]
- 10.34.2.81 `int ppl_Int16_Box_wrap_assign (ppl_Int16_Box_t ph, ppl_dimension_type
ds[], size_t n, enum ppl_enum_Bounded_Integer_Type_Width w,
enum ppl_enum_Bounded_Integer_Type_Representation r, enum
ppl_enum_Bounded_Integer_Type_Overflow o, const ppl_const_Constraint_System_t
*pcs, unsigned complexity_threshold, int wrap_individually)` [`related`]
- 10.34.2.82 `int ppl_new_Int16_Box_from_BD_Shape_double (ppl_Int16_Box_t *pph,
ppl_const_BD_Shape_double_t ph)` [`related`]
- 10.34.2.83 `int ppl_new_Int16_Box_from_BD_Shape_double_with_complexity (ppl_Int16_Box_t *
pph, ppl_const_BD_Shape_double_t ph, int complexity)` [`related`]

- 10.34.2.84 `int ppl_new_Int16_Box_from_BD_Shape_float (ppl_Int16_Box_t * pph,
ppl_const_BD_Shape_float_t ph)` [`related`]
- 10.34.2.85 `int ppl_new_Int16_Box_from_BD_Shape_float_with_complexity (ppl_Int16_Box_t *
pph, ppl_const_BD_Shape_float_t ph, int complexity)` [`related`]
- 10.34.2.86 `int ppl_new_Int16_Box_from_BD_Shape_int16_t (ppl_Int16_Box_t * pph,
ppl_const_BD_Shape_int16_t_t ph)` [`related`]
- 10.34.2.87 `int ppl_new_Int16_Box_from_BD_Shape_int16_t_with_complexity (ppl_Int16_Box_t *
pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)` [`related`]
- 10.34.2.88 `int ppl_new_Int16_Box_from_BD_Shape_int32_t (ppl_Int16_Box_t * pph,
ppl_const_BD_Shape_int32_t_t ph)` [`related`]
- 10.34.2.89 `int ppl_new_Int16_Box_from_BD_Shape_int32_t_with_complexity (ppl_Int16_Box_t *
pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)` [`related`]
- 10.34.2.90 `int ppl_new_Int16_Box_from_BD_Shape_int64_t (ppl_Int16_Box_t * pph,
ppl_const_BD_Shape_int64_t_t ph)` [`related`]
- 10.34.2.91 `int ppl_new_Int16_Box_from_BD_Shape_int64_t_with_complexity (ppl_Int16_Box_t *
pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)` [`related`]
- 10.34.2.92 `int ppl_new_Int16_Box_from_BD_Shape_int8_t (ppl_Int16_Box_t * pph,
ppl_const_BD_Shape_int8_t_t ph)` [`related`]

- 10.34.2.93 `int ppl_new_Int16_Box_from_BD_Shape_int8_t_with_complexity (ppl_Int16_Box_t * pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)` [related]
- 10.34.2.94 `int ppl_new_Int16_Box_from_BD_Shape_long_double (ppl_Int16_Box_t * pph, ppl_const_BD_Shape_long_double_t ph)` [related]
- 10.34.2.95 `int ppl_new_Int16_Box_from_BD_Shape_long_double_with_complexity (ppl_Int16_Box_t * pph, ppl_const_BD_Shape_long_double_t ph, int complexity)` [related]
- 10.34.2.96 `int ppl_new_Int16_Box_from_BD_Shape_mpq_class (ppl_Int16_Box_t * pph, ppl_const_BD_Shape_mpq_class_t ph)` [related]
- 10.34.2.97 `int ppl_new_Int16_Box_from_BD_Shape_mpq_class_with_complexity (ppl_Int16_Box_t * pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)` [related]
- 10.34.2.98 `int ppl_new_Int16_Box_from_BD_Shape_mpz_class (ppl_Int16_Box_t * pph, ppl_const_BD_Shape_mpz_class_t ph)` [related]
- 10.34.2.99 `int ppl_new_Int16_Box_from_BD_Shape_mpz_class_with_complexity (ppl_Int16_Box_t * pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)` [related]
- 10.34.2.100 `int ppl_new_Int16_Box_from_C_Polyhedron (ppl_Int16_Box_t * pph, ppl_const_Polyhedron_t ph)` [related]
- 10.34.2.101 `int ppl_new_Int16_Box_from_C_Polyhedron_with_complexity (ppl_Int16_Box_t * pph, ppl_const_Polyhedron_t ph, int complexity)` [related]

- 10.34.2.102 `int ppl_new_Int16_Box_from_Congruence_System (ppl_Int16_Box_t * pph,
ppl_const_Congruence_System_t cs)` [`related`]
- 10.34.2.103 `int ppl_new_Int16_Box_from_Constraint_System (ppl_Int16_Box_t * pph,
ppl_const_Constraint_System_t cs)` [`related`]
- 10.34.2.104 `int ppl_new_Int16_Box_from_Double_Box (ppl_Int16_Box_t * pph,
ppl_const_Double_Box_t ph)` [`related`]
- 10.34.2.105 `int ppl_new_Int16_Box_from_Double_Box_with_complexity (ppl_Int16_Box_t * pph,
ppl_const_Double_Box_t ph, int complexity)` [`related`]
- 10.34.2.106 `int ppl_new_Int16_Box_from_Float_Box (ppl_Int16_Box_t * pph,
ppl_const_Float_Box_t ph)` [`related`]
- 10.34.2.107 `int ppl_new_Int16_Box_from_Float_Box_with_complexity (ppl_Int16_Box_t * pph,
ppl_const_Float_Box_t ph, int complexity)` [`related`]
- 10.34.2.108 `int ppl_new_Int16_Box_from_Generator_System (ppl_Int16_Box_t * pph,
ppl_const_Generator_System_t cs)` [`related`]
- 10.34.2.109 `int ppl_new_Int16_Box_from_Grid (ppl_Int16_Box_t * pph, ppl_const_Grid_t ph)`
[`related`]
- 10.34.2.110 `int ppl_new_Int16_Box_from_Grid_with_complexity (ppl_Int16_Box_t * pph,
ppl_const_Grid_t ph, int complexity)` [`related`]

- 10.34.2.111 `int ppl_new_Int16_Box_from_Int16_Box (ppl_Int16_Box_t * pph,
ppl_const_Int16_Box_t ph)` [`related`]
- 10.34.2.112 `int ppl_new_Int16_Box_from_Int16_Box_with_complexity (ppl_Int16_Box_t * pph,
ppl_const_Int16_Box_t ph, int complexity)` [`related`]
- 10.34.2.113 `int ppl_new_Int16_Box_from_Int32_Box (ppl_Int16_Box_t * pph,
ppl_const_Int32_Box_t ph)` [`related`]
- 10.34.2.114 `int ppl_new_Int16_Box_from_Int32_Box_with_complexity (ppl_Int16_Box_t * pph,
ppl_const_Int32_Box_t ph, int complexity)` [`related`]
- 10.34.2.115 `int ppl_new_Int16_Box_from_Int64_Box (ppl_Int16_Box_t * pph,
ppl_const_Int64_Box_t ph)` [`related`]
- 10.34.2.116 `int ppl_new_Int16_Box_from_Int64_Box_with_complexity (ppl_Int16_Box_t * pph,
ppl_const_Int64_Box_t ph, int complexity)` [`related`]
- 10.34.2.117 `int ppl_new_Int16_Box_from_Int8_Box (ppl_Int16_Box_t * pph,
ppl_const_Int8_Box_t ph)` [`related`]
- 10.34.2.118 `int ppl_new_Int16_Box_from_Int8_Box_with_complexity (ppl_Int16_Box_t * pph,
ppl_const_Int8_Box_t ph, int complexity)` [`related`]
- 10.34.2.119 `int ppl_new_Int16_Box_from_Long_Double_Box (ppl_Int16_Box_t * pph,
ppl_const_Long_Double_Box_t ph)` [`related`]

- 10.34.2.120 `int ppl_new_Int16_Box_from_Long_Double_Box_with_complexity (ppl_Int16_Box_t * pph, ppl_const_Long_Double_Box_t ph, int complexity)` [`related`]
- 10.34.2.121 `int ppl_new_Int16_Box_from_NNC_Polyhedron (ppl_Int16_Box_t * pph, ppl_const_Polyhedron_t ph)` [`related`]
- 10.34.2.122 `int ppl_new_Int16_Box_from_NNC_Polyhedron_with_complexity (ppl_Int16_Box_t * pph, ppl_const_Polyhedron_t ph, int complexity)` [`related`]
- 10.34.2.123 `int ppl_new_Int16_Box_from_Octagonal_Shape_double (ppl_Int16_Box_t * pph, ppl_const_Octagonal_Shape_double_t ph)` [`related`]
- 10.34.2.124 `int ppl_new_Int16_Box_from_Octagonal_Shape_double_with_complexity (ppl_Int16_Box_t * pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)` [`related`]
- 10.34.2.125 `int ppl_new_Int16_Box_from_Octagonal_Shape_float (ppl_Int16_Box_t * pph, ppl_const_Octagonal_Shape_float_t ph)` [`related`]
- 10.34.2.126 `int ppl_new_Int16_Box_from_Octagonal_Shape_float_with_complexity (ppl_Int16_Box_t * pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)` [`related`]
- 10.34.2.127 `int ppl_new_Int16_Box_from_Octagonal_Shape_int16_t (ppl_Int16_Box_t * pph, ppl_const_Octagonal_Shape_int16_t ph)` [`related`]
- 10.34.2.128 `int ppl_new_Int16_Box_from_Octagonal_Shape_int16_t_with_complexity (ppl_Int16_Box_t * pph, ppl_const_Octagonal_Shape_int16_t ph, int complexity)` [`related`]

- 10.34.2.129 `int ppl_new_Int16_Box_from_Octagonal_Shape_int32_t (ppl_Int16_Box_t * pph,
ppl_const_Octagonal_Shape_int32_t_t ph)` [`related`]
- 10.34.2.130 `int ppl_new_Int16_Box_from_Octagonal_Shape_int32_t_with_complexity
(ppl_Int16_Box_t * pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)`
[`related`]
- 10.34.2.131 `int ppl_new_Int16_Box_from_Octagonal_Shape_int64_t (ppl_Int16_Box_t * pph,
ppl_const_Octagonal_Shape_int64_t_t ph)` [`related`]
- 10.34.2.132 `int ppl_new_Int16_Box_from_Octagonal_Shape_int64_t_with_complexity
(ppl_Int16_Box_t * pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)`
[`related`]
- 10.34.2.133 `int ppl_new_Int16_Box_from_Octagonal_Shape_int8_t (ppl_Int16_Box_t * pph,
ppl_const_Octagonal_Shape_int8_t_t ph)` [`related`]
- 10.34.2.134 `int ppl_new_Int16_Box_from_Octagonal_Shape_int8_t_with_complexity
(ppl_Int16_Box_t * pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)`
[`related`]
- 10.34.2.135 `int ppl_new_Int16_Box_from_Octagonal_Shape_long_double (ppl_Int16_Box_t *
pph, ppl_const_Octagonal_Shape_long_double_t_t ph)` [`related`]
- 10.34.2.136 `int ppl_new_Int16_Box_from_Octagonal_Shape_long_double_with_complexity
(ppl_Int16_Box_t * pph, ppl_const_Octagonal_Shape_long_double_t_t ph, int
complexity)` [`related`]
- 10.34.2.137 `int ppl_new_Int16_Box_from_Octagonal_Shape_mpq_class (ppl_Int16_Box_t * pph,
ppl_const_Octagonal_Shape_mpq_class_t_t ph)` [`related`]

- 10.34.2.138 `int ppl_new_Int16_Box_from_Octagonal_Shape_mpq_class_with_complexity`
(`ppl_Int16_Box_t * pph`, `ppl_const_Octagonal_Shape_mpq_class_t ph`, `int complexity`) [`related`]
- 10.34.2.139 `int ppl_new_Int16_Box_from_Octagonal_Shape_mpz_class` (`ppl_Int16_Box_t * pph`,
`ppl_const_Octagonal_Shape_mpz_class_t ph`) [`related`]
- 10.34.2.140 `int ppl_new_Int16_Box_from_Octagonal_Shape_mpz_class_with_complexity`
(`ppl_Int16_Box_t * pph`, `ppl_const_Octagonal_Shape_mpz_class_t ph`, `int complexity`)
[`related`]
- 10.34.2.141 `int ppl_new_Int16_Box_from_Rational_Box` (`ppl_Int16_Box_t * pph`,
`ppl_const_Rational_Box_t ph`) [`related`]
- 10.34.2.142 `int ppl_new_Int16_Box_from_Rational_Box_with_complexity` (`ppl_Int16_Box_t *`
`pph`, `ppl_const_Rational_Box_t ph`, `int complexity`) [`related`]
- 10.34.2.143 `int ppl_new_Int16_Box_from_space_dimension` (`ppl_Int16_Box_t * pph`,
`ppl_dimension_type d`, `int empty`) [`related`]
- 10.34.2.144 `int ppl_new_Int16_Box_from_Uint16_Box` (`ppl_Int16_Box_t * pph`,
`ppl_const_Uint16_Box_t ph`) [`related`]
- 10.34.2.145 `int ppl_new_Int16_Box_from_Uint16_Box_with_complexity` (`ppl_Int16_Box_t * pph`,
`ppl_const_Uint16_Box_t ph`, `int complexity`) [`related`]
- 10.34.2.146 `int ppl_new_Int16_Box_from_Uint32_Box` (`ppl_Int16_Box_t * pph`,
`ppl_const_Uint32_Box_t ph`) [`related`]

- 10.34.2.147 `int ppl_new_Int16_Box_from_Uint32_Box_with_complexity (ppl_Int16_Box_t * pph,
ppl_const_Uint32_Box_t ph, int complexity)` [`related`]
- 10.34.2.148 `int ppl_new_Int16_Box_from_Uint64_Box (ppl_Int16_Box_t * pph,
ppl_const_Uint64_Box_t ph)` [`related`]
- 10.34.2.149 `int ppl_new_Int16_Box_from_Uint64_Box_with_complexity (ppl_Int16_Box_t * pph,
ppl_const_Uint64_Box_t ph, int complexity)` [`related`]
- 10.34.2.150 `int ppl_new_Int16_Box_from_Uint8_Box (ppl_Int16_Box_t * pph,
ppl_const_Uint8_Box_t ph)` [`related`]
- 10.34.2.151 `int ppl_new_Int16_Box_from_Uint8_Box_with_complexity (ppl_Int16_Box_t * pph,
ppl_const_Uint8_Box_t ph, int complexity)` [`related`]
- 10.34.2.152 `int ppl_new_Int16_Box_from_Z_Box (ppl_Int16_Box_t * pph, ppl_const_Z_Box_t
ph)` [`related`]
- 10.34.2.153 `int ppl_new_Int16_Box_from_Z_Box_with_complexity (ppl_Int16_Box_t * pph,
ppl_const_Z_Box_t ph, int complexity)` [`related`]
- 10.34.2.154 `int ppl_new_Int16_Box_recycle_Congruence_System (ppl_Int16_Box_t * pph,
ppl_Congruence_System_t cs)` [`related`]
- 10.34.2.155 `int ppl_new_Int16_Box_recycle_Constraint_System (ppl_Int16_Box_t * pph,
ppl_Constraint_System_t cs)` [`related`]

- 10.34.2.156 `int ppl_new_Int16_Box_recycle_Generator_System (ppl_Int16_Box_t * pph,
ppl_Generator_System_t cs)` [**related**]

- 10.34.2.157 `int ppl_one_affine_ranking_function_MS_Int16_Box (ppl_const_Int16_Box_t pset,
ppl_Generator_t point)` [**related**]

- 10.34.2.158 `int ppl_one_affine_ranking_function_MS_Int16_Box_2 (ppl_const_Int16_Box_t
pset_before, ppl_const_Int16_Box_t pset_after, ppl_Generator_t point)` [**related**]

- 10.34.2.159 `int ppl_one_affine_ranking_function_PR_Int16_Box (ppl_const_Int16_Box_t pset,
ppl_Generator_t point)` [**related**]

- 10.34.2.160 `int ppl_one_affine_ranking_function_PR_Int16_Box_2 (ppl_const_Int16_Box_t
pset_before, ppl_const_Int16_Box_t pset_after, ppl_Generator_t point)` [**related**]

- 10.34.2.161 `int ppl_termination_test_MS_Int16_Box (ppl_const_Int16_Box_t pset)` [**related**]

- 10.34.2.162 `int ppl_termination_test_MS_Int16_Box_2 (ppl_const_Int16_Box_t pset_before,
ppl_const_Int16_Box_t pset_after)` [**related**]

- 10.34.2.163 `int ppl_termination_test_PR_Int16_Box (ppl_const_Int16_Box_t pset)` [**related**]

- 10.34.2.164 `int ppl_termination_test_PR_Int16_Box_2 (ppl_const_Int16_Box_t pset_before,
ppl_const_Int16_Box_t pset_after)` [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.35 ppl_Int32_Box_tag Interface Reference

Types and functions for [ppl_Int32_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- [int ppl_delete_Int32_Box](#) (ppl_const_Int32_Box_t ph)
- [int ppl_new_Int32_Box_from_space_dimension](#) (ppl_Int32_Box_t *pph, [ppl_dimension_type](#) d, int empty)
- [int ppl_new_Int32_Box_from_Int8_Box](#) (ppl_Int32_Box_t *pph, ppl_const_Int8_Box_t ph)
- [int ppl_new_Int32_Box_from_Int16_Box](#) (ppl_Int32_Box_t *pph, ppl_const_Int16_Box_t ph)
- [int ppl_new_Int32_Box_from_Int32_Box](#) (ppl_Int32_Box_t *pph, ppl_const_Int32_Box_t ph)
- [int ppl_new_Int32_Box_from_Int64_Box](#) (ppl_Int32_Box_t *pph, ppl_const_Int64_Box_t ph)
- [int ppl_new_Int32_Box_from_Uint8_Box](#) (ppl_Int32_Box_t *pph, ppl_const_Uint8_Box_t ph)
- [int ppl_new_Int32_Box_from_Uint16_Box](#) (ppl_Int32_Box_t *pph, ppl_const_Uint16_Box_t ph)
- [int ppl_new_Int32_Box_from_Uint32_Box](#) (ppl_Int32_Box_t *pph, ppl_const_Uint32_Box_t ph)
- [int ppl_new_Int32_Box_from_Uint64_Box](#) (ppl_Int32_Box_t *pph, ppl_const_Uint64_Box_t ph)
- [int ppl_new_Int32_Box_from_Z_Box](#) (ppl_Int32_Box_t *pph, ppl_const_Z_Box_t ph)
- [int ppl_new_Int32_Box_from_Rational_Box](#) (ppl_Int32_Box_t *pph, ppl_const_Rational_Box_t ph)
- [int ppl_new_Int32_Box_from_BD_Shape_int8_t](#) (ppl_Int32_Box_t *pph, ppl_const_BD_Shape_int8_t_t ph)
- [int ppl_new_Int32_Box_from_BD_Shape_int16_t](#) (ppl_Int32_Box_t *pph, ppl_const_BD_Shape_int16_t_t ph)
- [int ppl_new_Int32_Box_from_BD_Shape_int32_t](#) (ppl_Int32_Box_t *pph, ppl_const_BD_Shape_int32_t_t ph)
- [int ppl_new_Int32_Box_from_BD_Shape_int64_t](#) (ppl_Int32_Box_t *pph, ppl_const_BD_Shape_int64_t_t ph)
- [int ppl_new_Int32_Box_from_BD_Shape_mpz_class](#) (ppl_Int32_Box_t *pph, ppl_const_BD_Shape_mpz_class_t ph)
- [int ppl_new_Int32_Box_from_BD_Shape_mpq_class](#) (ppl_Int32_Box_t *pph, ppl_const_BD_Shape_mpq_class_t ph)
- [int ppl_new_Int32_Box_from_Octagonal_Shape_int8_t](#) (ppl_Int32_Box_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph)
- [int ppl_new_Int32_Box_from_Octagonal_Shape_int16_t](#) (ppl_Int32_Box_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph)
- [int ppl_new_Int32_Box_from_Octagonal_Shape_int32_t](#) (ppl_Int32_Box_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph)
- [int ppl_new_Int32_Box_from_Octagonal_Shape_int64_t](#) (ppl_Int32_Box_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph)
- [int ppl_new_Int32_Box_from_Octagonal_Shape_mpz_class](#) (ppl_Int32_Box_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph)
- [int ppl_new_Int32_Box_from_Octagonal_Shape_mpq_class](#) (ppl_Int32_Box_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph)
- [int ppl_new_Int32_Box_from_C_Polyhedron](#) (ppl_Int32_Box_t *pph, ppl_const_Polyhedron_t ph)
- [int ppl_new_Int32_Box_from_NNC_Polyhedron](#) (ppl_Int32_Box_t *pph, ppl_const_Polyhedron_t ph)

- int [ppl_new_Int32_Box_from_Grid](#) (ppl_Int32_Box_t *pph, ppl_const_Grid_t ph)
- int [ppl_new_Int32_Box_from_Float_Box](#) (ppl_Int32_Box_t *pph, ppl_const_Float_Box_t ph)
- int [ppl_new_Int32_Box_from_BD_Shape_float](#) (ppl_Int32_Box_t *pph, ppl_const_BD_Shape_float_t ph)
- int [ppl_new_Int32_Box_from_Octagonal_Shape_float](#) (ppl_Int32_Box_t *pph, ppl_const_Octagonal_Shape_float_t ph)
- int [ppl_new_Int32_Box_from_Double_Box](#) (ppl_Int32_Box_t *pph, ppl_const_Double_Box_t ph)
- int [ppl_new_Int32_Box_from_BD_Shape_double](#) (ppl_Int32_Box_t *pph, ppl_const_BD_Shape_double_t ph)
- int [ppl_new_Int32_Box_from_Octagonal_Shape_double](#) (ppl_Int32_Box_t *pph, ppl_const_Octagonal_Shape_double_t ph)
- int [ppl_new_Int32_Box_from_Long_Double_Box](#) (ppl_Int32_Box_t *pph, ppl_const_Long_Double_Box_t ph)
- int [ppl_new_Int32_Box_from_BD_Shape_long_double](#) (ppl_Int32_Box_t *pph, ppl_const_BD_Shape_long_double_t ph)
- int [ppl_new_Int32_Box_from_Octagonal_Shape_long_double](#) (ppl_Int32_Box_t *pph, ppl_const_Octagonal_Shape_long_double_t ph)
- int [ppl_new_Int32_Box_from_Int8_Box_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_Int8_Box_t ph, int complexity)
- int [ppl_new_Int32_Box_from_Int16_Box_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_Int16_Box_t ph, int complexity)
- int [ppl_new_Int32_Box_from_Int32_Box_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_Int32_Box_t ph, int complexity)
- int [ppl_new_Int32_Box_from_Int64_Box_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_Int64_Box_t ph, int complexity)
- int [ppl_new_Int32_Box_from_Uint8_Box_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_Uint8_Box_t ph, int complexity)
- int [ppl_new_Int32_Box_from_Uint16_Box_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_Uint16_Box_t ph, int complexity)
- int [ppl_new_Int32_Box_from_Uint32_Box_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_Uint32_Box_t ph, int complexity)
- int [ppl_new_Int32_Box_from_Uint64_Box_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_Uint64_Box_t ph, int complexity)
- int [ppl_new_Int32_Box_from_Z_Box_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_Z_Box_t ph, int complexity)
- int [ppl_new_Int32_Box_from_Rational_Box_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_Rational_Box_t ph, int complexity)
- int [ppl_new_Int32_Box_from_BD_Shape_int8_t_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)
- int [ppl_new_Int32_Box_from_BD_Shape_int16_t_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)
- int [ppl_new_Int32_Box_from_BD_Shape_int32_t_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)
- int [ppl_new_Int32_Box_from_BD_Shape_int64_t_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)
- int [ppl_new_Int32_Box_from_BD_Shape_mpz_class_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_Int32_Box_from_BD_Shape_mpq_class_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_Int32_Box_from_Octagonal_Shape_int8_t_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)

- int [ppl_new_Int32_Box_from_Octagonal_Shape_int16_t_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)
- int [ppl_new_Int32_Box_from_Octagonal_Shape_int32_t_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)
- int [ppl_new_Int32_Box_from_Octagonal_Shape_int64_t_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)
- int [ppl_new_Int32_Box_from_Octagonal_Shape_mpz_class_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_Int32_Box_from_Octagonal_Shape_mpq_class_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_Int32_Box_from_C_Polyhedron_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_Int32_Box_from_NNC_Polyhedron_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_Int32_Box_from_Grid_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_Grid_t ph, int complexity)
- int [ppl_new_Int32_Box_from_Float_Box_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_Float_Box_t ph, int complexity)
- int [ppl_new_Int32_Box_from_BD_Shape_float_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_BD_Shape_float_t ph, int complexity)
- int [ppl_new_Int32_Box_from_Octagonal_Shape_float_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)
- int [ppl_new_Int32_Box_from_Double_Box_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_Double_Box_t ph, int complexity)
- int [ppl_new_Int32_Box_from_BD_Shape_double_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_BD_Shape_double_t ph, int complexity)
- int [ppl_new_Int32_Box_from_Octagonal_Shape_double_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)
- int [ppl_new_Int32_Box_from_Long_Double_Box_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- int [ppl_new_Int32_Box_from_BD_Shape_long_double_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity)
- int [ppl_new_Int32_Box_from_Octagonal_Shape_long_double_with_complexity](#) (ppl_Int32_Box_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)
- int [ppl_new_Int32_Box_from_Constraint_System](#) (ppl_Int32_Box_t *pph, ppl_const_Constraint_System_t cs)
- int [ppl_new_Int32_Box_from_Congruence_System](#) (ppl_Int32_Box_t *pph, ppl_const_Congruence_System_t cs)
- int [ppl_new_Int32_Box_from_Generator_System](#) (ppl_Int32_Box_t *pph, ppl_const_Generator_System_t cs)
- int [ppl_Int32_Box_space_dimension](#) (ppl_const_Int32_Box_t ph, [ppl_dimension_type](#) *m)
- int [ppl_Int32_Box_affine_dimension](#) (ppl_const_Int32_Box_t ph, [ppl_dimension_type](#) *m)
- int [ppl_Int32_Box_relation_with_Constraint](#) (ppl_const_Int32_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Int32_Box_relation_with_Generator](#) (ppl_const_Int32_Box_t ph, ppl_const_Generator_t c)
- int [ppl_Int32_Box_relation_with_Congruence](#) (ppl_const_Int32_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Int32_Box_get_constraints](#) (ppl_const_Int32_Box_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_Int32_Box_get_congruences](#) (ppl_const_Int32_Box_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_Int32_Box_get_minimized_constraints](#) (ppl_const_Int32_Box_t ph, ppl_const_Constraint_System_t *pcs)

- int [ppl_Int32_Box_get_minimized_congruences](#) (ppl_const_Int32_Box_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_Int32_Box_is_empty](#) (ppl_const_Int32_Box_t ph)
- int [ppl_Int32_Box_is_universe](#) (ppl_const_Int32_Box_t ph)
- int [ppl_Int32_Box_is_bounded](#) (ppl_const_Int32_Box_t ph)
- int [ppl_Int32_Box_contains_integer_point](#) (ppl_const_Int32_Box_t ph)
- int [ppl_Int32_Box_is_topologically_closed](#) (ppl_const_Int32_Box_t ph)
- int [ppl_Int32_Box_is_discrete](#) (ppl_const_Int32_Box_t ph)
- int [ppl_Int32_Box_topological_closure_assign](#) (ppl_Int32_Box_t ph)
- int [ppl_Int32_Box_bounds_from_above](#) (ppl_const_Int32_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Int32_Box_bounds_from_below](#) (ppl_const_Int32_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Int32_Box_maximize](#) (ppl_const_Int32_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Int32_Box_minimize](#) (ppl_const_Int32_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Int32_Box_maximize_with_point](#) (ppl_const_Int32_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Int32_Box_minimize_with_point](#) (ppl_const_Int32_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Int32_Box_frequency](#) (ppl_const_Int32_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)
- int [ppl_Int32_Box_contains_Int32_Box](#) (ppl_const_Int32_Box_t x, ppl_const_Int32_Box_t y)
- int [ppl_Int32_Box_strictly_contains_Int32_Box](#) (ppl_const_Int32_Box_t x, ppl_const_Int32_Box_t y)
- int [ppl_Int32_Box_is_disjoint_from_Int32_Box](#) (ppl_const_Int32_Box_t x, ppl_const_Int32_Box_t y)
- int [ppl_Int32_Box_equals_Int32_Box](#) (ppl_const_Int32_Box_t x, ppl_const_Int32_Box_t y)
- int [ppl_Int32_Box_OK](#) (ppl_const_Int32_Box_t ph)
- int [ppl_Int32_Box_add_constraint](#) (ppl_Int32_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Int32_Box_add_congruence](#) (ppl_Int32_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Int32_Box_add_constraints](#) (ppl_Int32_Box_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Int32_Box_add_congruences](#) (ppl_Int32_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Int32_Box_refine_with_constraint](#) (ppl_Int32_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Int32_Box_refine_with_congruence](#) (ppl_Int32_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Int32_Box_refine_with_constraints](#) (ppl_Int32_Box_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Int32_Box_refine_with_congruences](#) (ppl_Int32_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Int32_Box_intersection_assign](#) (ppl_Int32_Box_t x, ppl_const_Int32_Box_t y)
- int [ppl_Int32_Box_upper_bound_assign](#) (ppl_Int32_Box_t x, ppl_const_Int32_Box_t y)
- int [ppl_Int32_Box_difference_assign](#) (ppl_Int32_Box_t x, ppl_const_Int32_Box_t y)
- int [ppl_Int32_Box_concatenate_assign](#) (ppl_Int32_Box_t x, ppl_const_Int32_Box_t y)
- int [ppl_Int32_Box_time_elapse_assign](#) (ppl_Int32_Box_t x, ppl_const_Int32_Box_t y)
- int [ppl_Int32_Box_upper_bound_assign_if_exact](#) (ppl_Int32_Box_t x, ppl_const_Int32_Box_t y)
- int [ppl_Int32_Box_simplify_using_context_assign](#) (ppl_Int32_Box_t x, ppl_const_Int32_Box_t y)
- int [ppl_Int32_Box_constrains](#) (ppl_Int32_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Int32_Box_unconstrain_space_dimension](#) (ppl_Int32_Box_t ph, [ppl_dimension_type](#) var)

- int [ppl_Int32_Box_unconstrain_space_dimensions](#) (ppl_Int32_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Int32_Box_affine_image](#) (ppl_Int32_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Int32_Box_affine_preimage](#) (ppl_Int32_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Int32_Box_bounded_affine_image](#) (ppl_Int32_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Int32_Box_bounded_affine_preimage](#) (ppl_Int32_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Int32_Box_generalized_affine_image](#) (ppl_Int32_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Int32_Box_generalized_affine_preimage](#) (ppl_Int32_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Int32_Box_generalized_affine_image_lhs_rhs](#) (ppl_Int32_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Int32_Box_generalized_affine_preimage_lhs_rhs](#) (ppl_Int32_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Int32_Box_add_space_dimensions_and_embed](#) (ppl_Int32_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Int32_Box_add_space_dimensions_and_project](#) (ppl_Int32_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Int32_Box_remove_space_dimensions](#) (ppl_Int32_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Int32_Box_remove_higher_space_dimensions](#) (ppl_Int32_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Int32_Box_expand_space_dimension](#) (ppl_Int32_Box_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Int32_Box_fold_space_dimensions](#) (ppl_Int32_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_Int32_Box_map_space_dimensions](#) (ppl_Int32_Box_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_Int32_Box_drop_some_non_integer_points](#) (ppl_Int32_Box_t ph, int complexity)
- int [ppl_Int32_Box_drop_some_non_integer_points_2](#) (ppl_Int32_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_Int32_Box_external_memory_in_bytes](#) (ppl_const_Int32_Box_t ps, size_t *sz)
- int [ppl_Int32_Box_total_memory_in_bytes](#) (ppl_const_Int32_Box_t ps, size_t *sz)
- int [ppl_Int32_Box_CC76_widening_assign_with_tokens](#) (ppl_Int32_Box_t x, ppl_const_Int32_Box_t y, unsigned *tp)
- int [ppl_Int32_Box_CC76_widening_assign](#) (ppl_Int32_Box_t x, ppl_const_Int32_Box_t y)
- int [ppl_Int32_Box_widening_assign_with_tokens](#) (ppl_Int32_Box_t x, ppl_const_Int32_Box_t y, unsigned *tp)
- int [ppl_Int32_Box_widening_assign](#) (ppl_Int32_Box_t x, ppl_const_Int32_Box_t y)
- int [ppl_Int32_Box_limited_CC76_extrapolation_assign_with_tokens](#) (ppl_Int32_Box_t x, ppl_const_Int32_Box_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- int [ppl_Int32_Box_limited_CC76_extrapolation_assign](#) (ppl_Int32_Box_t x, ppl_const_Int32_Box_t y, ppl_const_Constraint_System_t cs)
- int [ppl_Int32_Box_linear_partition](#) (ppl_const_Int32_Box_t x, ppl_const_Int32_Box_t y, ppl_Int32_Box_t *p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest)
- int [ppl_Int32_Box_wrap_assign](#) (ppl_Int32_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, enum [ppl_enum_Bounded_Integer_Type_Width](#) w, enum [ppl_enum_Bounded_Integer_Type_Representation](#) r, enum [ppl_enum_Bounded_Integer_Type_Overflow](#) o, const ppl_const_Constraint_System_t *pcs, unsigned complexity_threshold, int wrap_individually)

- int [ppl_new_Int32_Box_recycle_Constraint_System](#) (ppl_Int32_Box_t *pph, ppl_Constraint_System_t cs)
- int [ppl_new_Int32_Box_recycle_Congruence_System](#) (ppl_Int32_Box_t *pph, ppl_Congruence_System_t cs)
- int [ppl_new_Int32_Box_recycle_Generator_System](#) (ppl_Int32_Box_t *pph, ppl_Generator_System_t cs)
- int [ppl_assign_Int32_Box_from_Int32_Box](#) (ppl_Int32_Box_t dst, ppl_const_Int32_Box_t src)
- int [ppl_Int32_Box_add_recycled_constraints](#) (ppl_Int32_Box_t ph, ppl_Constraint_System_t cs)
- int [ppl_Int32_Box_add_recycled_congruences](#) (ppl_Int32_Box_t ph, ppl_Congruence_System_t cs)
- int [ppl_termination_test_MS_Int32_Box](#) (ppl_const_Int32_Box_t pset)
- int [ppl_termination_test_PR_Int32_Box](#) (ppl_const_Int32_Box_t pset)
- int [ppl_one_affine_ranking_function_MS_Int32_Box](#) (ppl_const_Int32_Box_t pset, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_Int32_Box](#) (ppl_const_Int32_Box_t pset, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_Int32_Box](#) (ppl_const_Int32_Box_t pset, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_Int32_Box](#) (ppl_const_Int32_Box_t pset, ppl_Polyhedron_t ph)
- int [ppl_termination_test_MS_Int32_Box_2](#) (ppl_const_Int32_Box_t pset_before, ppl_const_Int32_Box_t pset_after)
- int [ppl_termination_test_PR_Int32_Box_2](#) (ppl_const_Int32_Box_t pset_before, ppl_const_Int32_Box_t pset_after)
- int [ppl_one_affine_ranking_function_MS_Int32_Box_2](#) (ppl_const_Int32_Box_t pset_before, ppl_const_Int32_Box_t pset_after, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_Int32_Box_2](#) (ppl_const_Int32_Box_t pset_before, ppl_const_Int32_Box_t pset_after, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_Int32_Box_2](#) (ppl_const_Int32_Box_t pset_before, ppl_const_Int32_Box_t pset_after, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_Int32_Box_2](#) (ppl_const_Int32_Box_t pset_before, ppl_const_Int32_Box_t pset_after, ppl_Polyhedron_t ph)

10.35.1 Detailed Description

Types and functions for [ppl_Int32_Box_tag](#).

10.35.2 Friends And Related Function Documentation

10.35.2.1 int [ppl_all_affine_ranking_functions_MS_Int32_Box](#) (ppl_const_Int32_Box_t *pset*, ppl_Polyhedron_t *ph*) [[related](#)]

10.35.2.2 int [ppl_all_affine_ranking_functions_MS_Int32_Box_2](#) (ppl_const_Int32_Box_t *pset_before*, ppl_const_Int32_Box_t *pset_after*, ppl_Polyhedron_t *ph*) [[related](#)]

- 10.35.2.3 `int ppl_all_affine_ranking_functions_PR_Int32_Box (ppl_const_Int32_Box_t pset,
ppl_Polyhedron_t ph)` [`related`]
- 10.35.2.4 `int ppl_all_affine_ranking_functions_PR_Int32_Box_2 (ppl_const_Int32_Box_t
pset_before, ppl_const_Int32_Box_t pset_after, ppl_Polyhedron_t ph)` [`related`]
- 10.35.2.5 `int ppl_assign_Int32_Box_from_Int32_Box (ppl_Int32_Box_t dst,
ppl_const_Int32_Box_t src)` [`related`]
- 10.35.2.6 `int ppl_delete_Int32_Box (ppl_const_Int32_Box_t ph)` [`related`]
- 10.35.2.7 `int ppl_Int32_Box_add_congruence (ppl_Int32_Box_t ph, ppl_const_Congruence_t c)`
[`related`]
- 10.35.2.8 `int ppl_Int32_Box_add_congruences (ppl_Int32_Box_t ph,
ppl_const_Congruence_System_t cs)` [`related`]
- 10.35.2.9 `int ppl_Int32_Box_add_constraint (ppl_Int32_Box_t ph, ppl_const_Constraint_t c)`
[`related`]
- 10.35.2.10 `int ppl_Int32_Box_add_constraints (ppl_Int32_Box_t ph,
ppl_const_Constraint_System_t cs)` [`related`]
- 10.35.2.11 `int ppl_Int32_Box_add_recycled_congruences (ppl_Int32_Box_t ph,
ppl_Congruence_System_t cs)` [`related`]
- 10.35.2.12 `int ppl_Int32_Box_add_recycled_constraints (ppl_Int32_Box_t ph,
ppl_Constraint_System_t cs)` [`related`]

- 10.35.2.13 `int ppl_Int32_Box_add_space_dimensions_and_embed (ppl_Int32_Box_t ph,
ppl_dimension_type d)` [`related`]

- 10.35.2.14 `int ppl_Int32_Box_add_space_dimensions_and_project (ppl_Int32_Box_t ph,
ppl_dimension_type d)` [`related`]

- 10.35.2.15 `int ppl_Int32_Box_affine_dimension (ppl_const_Int32_Box_t ph, ppl_dimension_type
* m)` [`related`]

- 10.35.2.16 `int ppl_Int32_Box_affine_image (ppl_Int32_Box_t ph, ppl_dimension_type var,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]

- 10.35.2.17 `int ppl_Int32_Box_affine_preimage (ppl_Int32_Box_t ph, ppl_dimension_type var,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]

- 10.35.2.18 `int ppl_Int32_Box_bounded_affine_image (ppl_Int32_Box_t ph, ppl_dimension_type
var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub,
ppl_const_Coefficient_t d)` [`related`]

- 10.35.2.19 `int ppl_Int32_Box_bounded_affine_preimage (ppl_Int32_Box_t ph, ppl_dimension_
type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub,
ppl_const_Coefficient_t d)` [`related`]

- 10.35.2.20 `int ppl_Int32_Box_bounds_from_above (ppl_const_Int32_Box_t ph,
ppl_const_Linear_Expression_t le)` [`related`]

- 10.35.2.21 `int ppl_Int32_Box_bounds_from_below (ppl_const_Int32_Box_t ph,
ppl_const_Linear_Expression_t le)` [`related`]

- 10.35.2.22 `int ppl_Int32_Box_CC76_widening_assign (ppl_Int32_Box_t x, ppl_const_Int32_Box_t y)` [related]
- 10.35.2.23 `int ppl_Int32_Box_CC76_widening_assign_with_tokens (ppl_Int32_Box_t x, ppl_const_Int32_Box_t y, unsigned *tp)` [related]
- 10.35.2.24 `int ppl_Int32_Box_concatenate_assign (ppl_Int32_Box_t x, ppl_const_Int32_Box_t y)` [related]
- 10.35.2.25 `int ppl_Int32_Box_constrains (ppl_Int32_Box_t ph, ppl_dimension_type var)` [related]
- 10.35.2.26 `int ppl_Int32_Box_contains_Int32_Box (ppl_const_Int32_Box_t x, ppl_const_Int32_Box_t y)` [related]
- 10.35.2.27 `int ppl_Int32_Box_contains_integer_point (ppl_const_Int32_Box_t ph)` [related]
- 10.35.2.28 `int ppl_Int32_Box_difference_assign (ppl_Int32_Box_t x, ppl_const_Int32_Box_t y)` [related]
- 10.35.2.29 `int ppl_Int32_Box_drop_some_non_integer_points (ppl_Int32_Box_t ph, int complexity)` [related]
- 10.35.2.30 `int ppl_Int32_Box_drop_some_non_integer_points_2 (ppl_Int32_Box_t ph, ppl_dimension_type ds[], size_t n, int complexity)` [related]
- 10.35.2.31 `int ppl_Int32_Box_equals_Int32_Box (ppl_const_Int32_Box_t x, ppl_const_Int32_Box_t y)` [related]

- 10.35.2.32 `int ppl_Int32_Box_expand_space_dimension (ppl_Int32_Box_t ph,
ppl_dimension_type d, ppl_dimension_type m)` [related]
- 10.35.2.33 `int ppl_Int32_Box_external_memory_in_bytes (ppl_const_Int32_Box_t ps, size_t * sz)`
[related]
- 10.35.2.34 `int ppl_Int32_Box_fold_space_dimensions (ppl_Int32_Box_t ph, ppl_dimension_type
ds[], size_t n, ppl_dimension_type d)` [related]
- 10.35.2.35 `int ppl_Int32_Box_frequency (ppl_const_Int32_Box_t ph, ppl_const_Linear_Expression_t le,
ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn,
ppl_Coefficient_t ext_vd)` [related]
- 10.35.2.36 `int ppl_Int32_Box_generalized_affine_image (ppl_Int32_Box_t ph,
ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [related]
- 10.35.2.37 `int ppl_Int32_Box_generalized_affine_image_lhs_rhs (ppl_Int32_Box_t ph,
ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym,
ppl_const_Linear_Expression_t rhs)` [related]
- 10.35.2.38 `int ppl_Int32_Box_generalized_affine_preimage (ppl_Int32_Box_t ph,
ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [related]
- 10.35.2.39 `int ppl_Int32_Box_generalized_affine_preimage_lhs_rhs (ppl_Int32_Box_t ph,
ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym,
ppl_const_Linear_Expression_t rhs)` [related]

- 10.35.2.40 `int ppl_Int32_Box_get_congruences (ppl_const_Int32_Box_t ph,
ppl_const_Congruence_System_t * pcs)` [`related`]
- 10.35.2.41 `int ppl_Int32_Box_get_constraints (ppl_const_Int32_Box_t ph,
ppl_const_Constraint_System_t * pcs)` [`related`]
- 10.35.2.42 `int ppl_Int32_Box_get_minimized_congruences (ppl_const_Int32_Box_t ph,
ppl_const_Congruence_System_t * pcs)` [`related`]
- 10.35.2.43 `int ppl_Int32_Box_get_minimized_constraints (ppl_const_Int32_Box_t ph,
ppl_const_Constraint_System_t * pcs)` [`related`]
- 10.35.2.44 `int ppl_Int32_Box_intersection_assign (ppl_Int32_Box_t x, ppl_const_Int32_Box_t y)`
[`related`]
- 10.35.2.45 `int ppl_Int32_Box_is_bounded (ppl_const_Int32_Box_t ph)` [`related`]
- 10.35.2.46 `int ppl_Int32_Box_is_discrete (ppl_const_Int32_Box_t ph)` [`related`]
- 10.35.2.47 `int ppl_Int32_Box_is_disjoint_from_Int32_Box (ppl_const_Int32_Box_t x,
ppl_const_Int32_Box_t y)` [`related`]
- 10.35.2.48 `int ppl_Int32_Box_is_empty (ppl_const_Int32_Box_t ph)` [`related`]
- 10.35.2.49 `int ppl_Int32_Box_is_topologically_closed (ppl_const_Int32_Box_t ph)` [`related`]

- 10.35.2.50 `int ppl_Int32_Box_is_universe (ppl_const_Int32_Box_t ph)` [`related`]
- 10.35.2.51 `int ppl_Int32_Box_limited_CC76_extrapolation_assign (ppl_Int32_Box_t x,
ppl_const_Int32_Box_t y, ppl_const_Constraint_System_t cs)` [`related`]
- 10.35.2.52 `int ppl_Int32_Box_limited_CC76_extrapolation_assign_with_tokens (ppl_Int32_Box_t
x, ppl_const_Int32_Box_t y, ppl_const_Constraint_System_t cs, unsigned * tp)`
[`related`]
- 10.35.2.53 `int ppl_Int32_Box_linear_partition (ppl_const_Int32_Box_t x, ppl_const_Int32_Box_t
y, ppl_Int32_Box_t * p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t * p_rest)`
[`related`]
- 10.35.2.54 `int ppl_Int32_Box_map_space_dimensions (ppl_Int32_Box_t ph, ppl_dimension_type
maps[], size_t n)` [`related`]
- 10.35.2.55 `int ppl_Int32_Box_maximize (ppl_const_Int32_Box_t ph, ppl_const_Linear_
Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)`
[`related`]
- 10.35.2.56 `int ppl_Int32_Box_maximize_with_point (ppl_const_Int32_Box_t ph,
ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d,
int * poptimum, ppl_Generator_t point)` [`related`]
- 10.35.2.57 `int ppl_Int32_Box_minimize (ppl_const_Int32_Box_t ph, ppl_const_Linear_
Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)`
[`related`]

- 10.35.2.58 `int ppl_Int32_Box_minimize_with_point (ppl_const_Int32_Box_t ph,
ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d,
int * poptimum, ppl_Generator_t point)` [`related`]
- 10.35.2.59 `int ppl_Int32_Box_OK (ppl_const_Int32_Box_t ph)` [`related`]
- 10.35.2.60 `int ppl_Int32_Box_refine_with_congruence (ppl_Int32_Box_t ph,
ppl_const_Congruence_t c)` [`related`]
- 10.35.2.61 `int ppl_Int32_Box_refine_with_congruences (ppl_Int32_Box_t ph,
ppl_const_Congruence_System_t cs)` [`related`]
- 10.35.2.62 `int ppl_Int32_Box_refine_with_constraint (ppl_Int32_Box_t ph,
ppl_const_Constraint_t c)` [`related`]
- 10.35.2.63 `int ppl_Int32_Box_refine_with_constraints (ppl_Int32_Box_t ph,
ppl_const_Constraint_System_t cs)` [`related`]
- 10.35.2.64 `int ppl_Int32_Box_relation_with_Congruence (ppl_const_Int32_Box_t ph,
ppl_const_Congruence_t c)` [`related`]
- 10.35.2.65 `int ppl_Int32_Box_relation_with_Constraint (ppl_const_Int32_Box_t ph,
ppl_const_Constraint_t c)` [`related`]
- 10.35.2.66 `int ppl_Int32_Box_relation_with_Generator (ppl_const_Int32_Box_t ph,
ppl_const_Generator_t c)` [`related`]

- 10.35.2.67 `int ppl_Int32_Box_remove_higher_space_dimensions (ppl_Int32_Box_t ph,
ppl_dimension_type d)` [`related`]
- 10.35.2.68 `int ppl_Int32_Box_remove_space_dimensions (ppl_Int32_Box_t ph,
ppl_dimension_type ds[], size_t n)` [`related`]
- 10.35.2.69 `int ppl_Int32_Box_simplify_using_context_assign (ppl_Int32_Box_t x,
ppl_const_Int32_Box_t y)` [`related`]
- 10.35.2.70 `int ppl_Int32_Box_space_dimension (ppl_const_Int32_Box_t ph, ppl_dimension_type
* m)` [`related`]
- 10.35.2.71 `int ppl_Int32_Box_strictly_contains_Int32_Box (ppl_const_Int32_Box_t x,
ppl_const_Int32_Box_t y)` [`related`]
- 10.35.2.72 `int ppl_Int32_Box_time_elapse_assign (ppl_Int32_Box_t x, ppl_const_Int32_Box_t y)`
[`related`]
- 10.35.2.73 `int ppl_Int32_Box_topological_closure_assign (ppl_Int32_Box_t ph)` [`related`]
- 10.35.2.74 `int ppl_Int32_Box_total_memory_in_bytes (ppl_const_Int32_Box_t ps, size_t * sz)`
[`related`]
- 10.35.2.75 `int ppl_Int32_Box_unconstrain_space_dimension (ppl_Int32_Box_t ph,
ppl_dimension_type var)` [`related`]
- 10.35.2.76 `int ppl_Int32_Box_unconstrain_space_dimensions (ppl_Int32_Box_t ph,
ppl_dimension_type ds[], size_t n)` [`related`]

10.35.2.77 `int ppl_Int32_Box_upper_bound_assign (ppl_Int32_Box_t x, ppl_const_Int32_Box_t y) [related]`

10.35.2.78 `int ppl_Int32_Box_upper_bound_assign_if_exact (ppl_Int32_Box_t x, ppl_const_Int32_Box_t y) [related]`

10.35.2.79 `int ppl_Int32_Box_widening_assign (ppl_Int32_Box_t x, ppl_const_Int32_Box_t y) [related]`

10.35.2.80 `int ppl_Int32_Box_widening_assign_with_tokens (ppl_Int32_Box_t x, ppl_const_Int32_Box_t y, unsigned *tp) [related]`

10.35.2.81 `int ppl_Int32_Box_wrap_assign (ppl_Int32_Box_t ph, ppl_dimension_type ds[], size_t n, enum ppl_enum_Bounded_Integer_Type_Width w, enum ppl_enum_Bounded_Integer_Type_Representation r, enum ppl_enum_Bounded_Integer_Type_Overflow o, const ppl_const_Constraint_System_t *pcs, unsigned complexity_threshold, int wrap_individually) [related]`

10.35.2.82 `int ppl_new_Int32_Box_from_BD_Shape_double (ppl_Int32_Box_t *pph, ppl_const_BD_Shape_double_t ph) [related]`

10.35.2.83 `int ppl_new_Int32_Box_from_BD_Shape_double_with_complexity (ppl_Int32_Box_t *pph, ppl_const_BD_Shape_double_t ph, int complexity) [related]`

10.35.2.84 `int ppl_new_Int32_Box_from_BD_Shape_float (ppl_Int32_Box_t *pph, ppl_const_BD_Shape_float_t ph) [related]`

10.35.2.85 `int ppl_new_Int32_Box_from_BD_Shape_float_with_complexity (ppl_Int32_Box_t *pph, ppl_const_BD_Shape_float_t ph, int complexity) [related]`

- 10.35.2.86 `int ppl_new_Int32_Box_from_BD_Shape_int16_t (ppl_Int32_Box_t * pph,
ppl_const_BD_Shape_int16_t_t ph)` [`related`]
- 10.35.2.87 `int ppl_new_Int32_Box_from_BD_Shape_int16_t_with_complexity (ppl_Int32_Box_t *
pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)` [`related`]
- 10.35.2.88 `int ppl_new_Int32_Box_from_BD_Shape_int32_t (ppl_Int32_Box_t * pph,
ppl_const_BD_Shape_int32_t_t ph)` [`related`]
- 10.35.2.89 `int ppl_new_Int32_Box_from_BD_Shape_int32_t_with_complexity (ppl_Int32_Box_t *
pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)` [`related`]
- 10.35.2.90 `int ppl_new_Int32_Box_from_BD_Shape_int64_t (ppl_Int32_Box_t * pph,
ppl_const_BD_Shape_int64_t_t ph)` [`related`]
- 10.35.2.91 `int ppl_new_Int32_Box_from_BD_Shape_int64_t_with_complexity (ppl_Int32_Box_t *
pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)` [`related`]
- 10.35.2.92 `int ppl_new_Int32_Box_from_BD_Shape_int8_t (ppl_Int32_Box_t * pph,
ppl_const_BD_Shape_int8_t_t ph)` [`related`]
- 10.35.2.93 `int ppl_new_Int32_Box_from_BD_Shape_int8_t_with_complexity (ppl_Int32_Box_t *
pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)` [`related`]
- 10.35.2.94 `int ppl_new_Int32_Box_from_BD_Shape_long_double (ppl_Int32_Box_t * pph,
ppl_const_BD_Shape_long_double_t ph)` [`related`]

- 10.35.2.95** `int ppl_new_Int32_Box_from_BD_Shape_long_double_with_complexity`
(`ppl_Int32_Box_t * pph`, `ppl_const_BD_Shape_long_double_t ph`, `int complexity`)
[related]
- 10.35.2.96** `int ppl_new_Int32_Box_from_BD_Shape_mpq_class` (`ppl_Int32_Box_t * pph`,
`ppl_const_BD_Shape_mpq_class_t ph`) [related]
- 10.35.2.97** `int ppl_new_Int32_Box_from_BD_Shape_mpq_class_with_complexity`
(`ppl_Int32_Box_t * pph`, `ppl_const_BD_Shape_mpq_class_t ph`, `int complexity`)
[related]
- 10.35.2.98** `int ppl_new_Int32_Box_from_BD_Shape_mpz_class` (`ppl_Int32_Box_t * pph`,
`ppl_const_BD_Shape_mpz_class_t ph`) [related]
- 10.35.2.99** `int ppl_new_Int32_Box_from_BD_Shape_mpz_class_with_complexity`
(`ppl_Int32_Box_t * pph`, `ppl_const_BD_Shape_mpz_class_t ph`, `int complexity`)
[related]
- 10.35.2.100** `int ppl_new_Int32_Box_from_C_Polyhedron` (`ppl_Int32_Box_t * pph`,
`ppl_const_Polyhedron_t ph`) [related]
- 10.35.2.101** `int ppl_new_Int32_Box_from_C_Polyhedron_with_complexity` (`ppl_Int32_Box_t *`
`pph`, `ppl_const_Polyhedron_t ph`, `int complexity`) [related]
- 10.35.2.102** `int ppl_new_Int32_Box_from_Congruence_System` (`ppl_Int32_Box_t * pph`,
`ppl_const_Congruence_System_t cs`) [related]
- 10.35.2.103** `int ppl_new_Int32_Box_from_Constraint_System` (`ppl_Int32_Box_t * pph`,
`ppl_const_Constraint_System_t cs`) [related]

- 10.35.2.104 `int ppl_new_Int32_Box_from_Double_Box (ppl_Int32_Box_t * pph,
ppl_const_Double_Box_t ph)` [`related`]
- 10.35.2.105 `int ppl_new_Int32_Box_from_Double_Box_with_complexity (ppl_Int32_Box_t * pph,
ppl_const_Double_Box_t ph, int complexity)` [`related`]
- 10.35.2.106 `int ppl_new_Int32_Box_from_Float_Box (ppl_Int32_Box_t * pph,
ppl_const_Float_Box_t ph)` [`related`]
- 10.35.2.107 `int ppl_new_Int32_Box_from_Float_Box_with_complexity (ppl_Int32_Box_t * pph,
ppl_const_Float_Box_t ph, int complexity)` [`related`]
- 10.35.2.108 `int ppl_new_Int32_Box_from_Generator_System (ppl_Int32_Box_t * pph,
ppl_const_Generator_System_t cs)` [`related`]
- 10.35.2.109 `int ppl_new_Int32_Box_from_Grid (ppl_Int32_Box_t * pph, ppl_const_Grid_t ph)`
[`related`]
- 10.35.2.110 `int ppl_new_Int32_Box_from_Grid_with_complexity (ppl_Int32_Box_t * pph,
ppl_const_Grid_t ph, int complexity)` [`related`]
- 10.35.2.111 `int ppl_new_Int32_Box_from_Int16_Box (ppl_Int32_Box_t * pph,
ppl_const_Int16_Box_t ph)` [`related`]
- 10.35.2.112 `int ppl_new_Int32_Box_from_Int16_Box_with_complexity (ppl_Int32_Box_t * pph,
ppl_const_Int16_Box_t ph, int complexity)` [`related`]

- 10.35.2.113 `int ppl_new_Int32_Box_from_Int32_Box (ppl_Int32_Box_t * pph,
ppl_const_Int32_Box_t ph)` [related]
- 10.35.2.114 `int ppl_new_Int32_Box_from_Int32_Box_with_complexity (ppl_Int32_Box_t * pph,
ppl_const_Int32_Box_t ph, int complexity)` [related]
- 10.35.2.115 `int ppl_new_Int32_Box_from_Int64_Box (ppl_Int32_Box_t * pph,
ppl_const_Int64_Box_t ph)` [related]
- 10.35.2.116 `int ppl_new_Int32_Box_from_Int64_Box_with_complexity (ppl_Int32_Box_t * pph,
ppl_const_Int64_Box_t ph, int complexity)` [related]
- 10.35.2.117 `int ppl_new_Int32_Box_from_Int8_Box (ppl_Int32_Box_t * pph,
ppl_const_Int8_Box_t ph)` [related]
- 10.35.2.118 `int ppl_new_Int32_Box_from_Int8_Box_with_complexity (ppl_Int32_Box_t * pph,
ppl_const_Int8_Box_t ph, int complexity)` [related]
- 10.35.2.119 `int ppl_new_Int32_Box_from_Long_Double_Box (ppl_Int32_Box_t * pph,
ppl_const_Long_Double_Box_t ph)` [related]
- 10.35.2.120 `int ppl_new_Int32_Box_from_Long_Double_Box_with_complexity (ppl_Int32_Box_t
* pph, ppl_const_Long_Double_Box_t ph, int complexity)` [related]
- 10.35.2.121 `int ppl_new_Int32_Box_from_NNC_Polyhedron (ppl_Int32_Box_t * pph,
ppl_const_Polyhedron_t ph)` [related]

- 10.35.2.122 `int ppl_new_Int32_Box_from_NNC_Polyhedron_with_complexity (ppl_Int32_Box_t * pph, ppl_const_Polyhedron_t ph, int complexity)` [`related`]
- 10.35.2.123 `int ppl_new_Int32_Box_from_Octagonal_Shape_double (ppl_Int32_Box_t * pph, ppl_const_Octagonal_Shape_double_t ph)` [`related`]
- 10.35.2.124 `int ppl_new_Int32_Box_from_Octagonal_Shape_double_with_complexity (ppl_Int32_Box_t * pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)` [`related`]
- 10.35.2.125 `int ppl_new_Int32_Box_from_Octagonal_Shape_float (ppl_Int32_Box_t * pph, ppl_const_Octagonal_Shape_float_t ph)` [`related`]
- 10.35.2.126 `int ppl_new_Int32_Box_from_Octagonal_Shape_float_with_complexity (ppl_Int32_Box_t * pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)` [`related`]
- 10.35.2.127 `int ppl_new_Int32_Box_from_Octagonal_Shape_int16_t (ppl_Int32_Box_t * pph, ppl_const_Octagonal_Shape_int16_t ph)` [`related`]
- 10.35.2.128 `int ppl_new_Int32_Box_from_Octagonal_Shape_int16_t_with_complexity (ppl_Int32_Box_t * pph, ppl_const_Octagonal_Shape_int16_t ph, int complexity)` [`related`]
- 10.35.2.129 `int ppl_new_Int32_Box_from_Octagonal_Shape_int32_t (ppl_Int32_Box_t * pph, ppl_const_Octagonal_Shape_int32_t ph)` [`related`]
- 10.35.2.130 `int ppl_new_Int32_Box_from_Octagonal_Shape_int32_t_with_complexity (ppl_Int32_Box_t * pph, ppl_const_Octagonal_Shape_int32_t ph, int complexity)` [`related`]

- 10.35.2.131 `int ppl_new_Int32_Box_from_Octagonal_Shape_int64_t (ppl_Int32_Box_t * pph,
ppl_const_Octagonal_Shape_int64_t ph)` [`related`]
- 10.35.2.132 `int ppl_new_Int32_Box_from_Octagonal_Shape_int64_t_with_complexity
(ppl_Int32_Box_t * pph, ppl_const_Octagonal_Shape_int64_t ph, int complexity)`
[`related`]
- 10.35.2.133 `int ppl_new_Int32_Box_from_Octagonal_Shape_int8_t (ppl_Int32_Box_t * pph,
ppl_const_Octagonal_Shape_int8_t ph)` [`related`]
- 10.35.2.134 `int ppl_new_Int32_Box_from_Octagonal_Shape_int8_t_with_complexity
(ppl_Int32_Box_t * pph, ppl_const_Octagonal_Shape_int8_t ph, int complexity)`
[`related`]
- 10.35.2.135 `int ppl_new_Int32_Box_from_Octagonal_Shape_long_double (ppl_Int32_Box_t *
pph, ppl_const_Octagonal_Shape_long_double_t ph)` [`related`]
- 10.35.2.136 `int ppl_new_Int32_Box_from_Octagonal_Shape_long_double_with_complexity
(ppl_Int32_Box_t * pph, ppl_const_Octagonal_Shape_long_double_t ph, int
complexity)` [`related`]
- 10.35.2.137 `int ppl_new_Int32_Box_from_Octagonal_Shape_mpq_class (ppl_Int32_Box_t * pph,
ppl_const_Octagonal_Shape_mpq_class_t ph)` [`related`]
- 10.35.2.138 `int ppl_new_Int32_Box_from_Octagonal_Shape_mpq_class_with_complexity
(ppl_Int32_Box_t * pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int
complexity)` [`related`]
- 10.35.2.139 `int ppl_new_Int32_Box_from_Octagonal_Shape_mpz_class (ppl_Int32_Box_t * pph,
ppl_const_Octagonal_Shape_mpz_class_t ph)` [`related`]

- 10.35.2.140 `int ppl_new_Int32_Box_from_Octagonal_Shape_mpz_class_with_complexity`
`(ppl_Int32_Box_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)`
`[related]`
- 10.35.2.141 `int ppl_new_Int32_Box_from_Rational_Box` `(ppl_Int32_Box_t * pph,`
`ppl_const_Rational_Box_t ph) [related]`
- 10.35.2.142 `int ppl_new_Int32_Box_from_Rational_Box_with_complexity` `(ppl_Int32_Box_t *`
`pph, ppl_const_Rational_Box_t ph, int complexity) [related]`
- 10.35.2.143 `int ppl_new_Int32_Box_from_space_dimension` `(ppl_Int32_Box_t * pph,`
`ppl_dimension_type d, int empty) [related]`
- 10.35.2.144 `int ppl_new_Int32_Box_from_Uint16_Box` `(ppl_Int32_Box_t * pph,`
`ppl_const_Uint16_Box_t ph) [related]`
- 10.35.2.145 `int ppl_new_Int32_Box_from_Uint16_Box_with_complexity` `(ppl_Int32_Box_t * pph,`
`ppl_const_Uint16_Box_t ph, int complexity) [related]`
- 10.35.2.146 `int ppl_new_Int32_Box_from_Uint32_Box` `(ppl_Int32_Box_t * pph,`
`ppl_const_Uint32_Box_t ph) [related]`
- 10.35.2.147 `int ppl_new_Int32_Box_from_Uint32_Box_with_complexity` `(ppl_Int32_Box_t * pph,`
`ppl_const_Uint32_Box_t ph, int complexity) [related]`
- 10.35.2.148 `int ppl_new_Int32_Box_from_Uint64_Box` `(ppl_Int32_Box_t * pph,`
`ppl_const_Uint64_Box_t ph) [related]`

- 10.35.2.149 `int ppl_new_Int32_Box_from_Uint64_Box_with_complexity (ppl_Int32_Box_t * pph,
ppl_const_Uint64_Box_t ph, int complexity)` [`related`]
- 10.35.2.150 `int ppl_new_Int32_Box_from_Uint8_Box (ppl_Int32_Box_t * pph,
ppl_const_Uint8_Box_t ph)` [`related`]
- 10.35.2.151 `int ppl_new_Int32_Box_from_Uint8_Box_with_complexity (ppl_Int32_Box_t * pph,
ppl_const_Uint8_Box_t ph, int complexity)` [`related`]
- 10.35.2.152 `int ppl_new_Int32_Box_from_Z_Box (ppl_Int32_Box_t * pph, ppl_const_Z_Box_t
ph)` [`related`]
- 10.35.2.153 `int ppl_new_Int32_Box_from_Z_Box_with_complexity (ppl_Int32_Box_t * pph,
ppl_const_Z_Box_t ph, int complexity)` [`related`]
- 10.35.2.154 `int ppl_new_Int32_Box_recycle_Congruence_System (ppl_Int32_Box_t * pph,
ppl_Congruence_System_t cs)` [`related`]
- 10.35.2.155 `int ppl_new_Int32_Box_recycle_Constraint_System (ppl_Int32_Box_t * pph,
ppl_Constraint_System_t cs)` [`related`]
- 10.35.2.156 `int ppl_new_Int32_Box_recycle_Generator_System (ppl_Int32_Box_t * pph,
ppl_Generator_System_t cs)` [`related`]
- 10.35.2.157 `int ppl_one_affine_ranking_function_MS_Int32_Box (ppl_const_Int32_Box_t pset,
ppl_Generator_t point)` [`related`]

10.35.2.158 `int ppl_one_affine_ranking_function_MS_Int32_Box_2 (ppl_const_Int32_Box_t pset_before, ppl_const_Int32_Box_t pset_after, ppl_Generator_t point)` [**related**]

10.35.2.159 `int ppl_one_affine_ranking_function_PR_Int32_Box (ppl_const_Int32_Box_t pset, ppl_Generator_t point)` [**related**]

10.35.2.160 `int ppl_one_affine_ranking_function_PR_Int32_Box_2 (ppl_const_Int32_Box_t pset_before, ppl_const_Int32_Box_t pset_after, ppl_Generator_t point)` [**related**]

10.35.2.161 `int ppl_termination_test_MS_Int32_Box (ppl_const_Int32_Box_t pset)` [**related**]

10.35.2.162 `int ppl_termination_test_MS_Int32_Box_2 (ppl_const_Int32_Box_t pset_before, ppl_const_Int32_Box_t pset_after)` [**related**]

10.35.2.163 `int ppl_termination_test_PR_Int32_Box (ppl_const_Int32_Box_t pset)` [**related**]

10.35.2.164 `int ppl_termination_test_PR_Int32_Box_2 (ppl_const_Int32_Box_t pset_before, ppl_const_Int32_Box_t pset_after)` [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.36 ppl_Int64_Box_tag Interface Reference

Types and functions for [ppl_Int64_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl\_delete\_Int64\_Box (ppl_const_Int64_Box_t ph)`

- int `ppl_new_Int64_Box_from_space_dimension` (ppl_Int64_Box_t *pph, ppl_dimension_type d, int empty)
- int `ppl_new_Int64_Box_from_Int8_Box` (ppl_Int64_Box_t *pph, ppl_const_Int8_Box_t ph)
- int `ppl_new_Int64_Box_from_Int16_Box` (ppl_Int64_Box_t *pph, ppl_const_Int16_Box_t ph)
- int `ppl_new_Int64_Box_from_Int32_Box` (ppl_Int64_Box_t *pph, ppl_const_Int32_Box_t ph)
- int `ppl_new_Int64_Box_from_Int64_Box` (ppl_Int64_Box_t *pph, ppl_const_Int64_Box_t ph)
- int `ppl_new_Int64_Box_from_Uint8_Box` (ppl_Int64_Box_t *pph, ppl_const_Uint8_Box_t ph)
- int `ppl_new_Int64_Box_from_Uint16_Box` (ppl_Int64_Box_t *pph, ppl_const_Uint16_Box_t ph)
- int `ppl_new_Int64_Box_from_Uint32_Box` (ppl_Int64_Box_t *pph, ppl_const_Uint32_Box_t ph)
- int `ppl_new_Int64_Box_from_Uint64_Box` (ppl_Int64_Box_t *pph, ppl_const_Uint64_Box_t ph)
- int `ppl_new_Int64_Box_from_Z_Box` (ppl_Int64_Box_t *pph, ppl_const_Z_Box_t ph)
- int `ppl_new_Int64_Box_from_Rational_Box` (ppl_Int64_Box_t *pph, ppl_const_Rational_Box_t ph)
- int `ppl_new_Int64_Box_from_BD_Shape_int8_t` (ppl_Int64_Box_t *pph, ppl_const_BD_Shape_int8_t_t ph)
- int `ppl_new_Int64_Box_from_BD_Shape_int16_t` (ppl_Int64_Box_t *pph, ppl_const_BD_Shape_int16_t_t ph)
- int `ppl_new_Int64_Box_from_BD_Shape_int32_t` (ppl_Int64_Box_t *pph, ppl_const_BD_Shape_int32_t_t ph)
- int `ppl_new_Int64_Box_from_BD_Shape_int64_t` (ppl_Int64_Box_t *pph, ppl_const_BD_Shape_int64_t_t ph)
- int `ppl_new_Int64_Box_from_BD_Shape_mpz_class` (ppl_Int64_Box_t *pph, ppl_const_BD_Shape_mpz_class_t ph)
- int `ppl_new_Int64_Box_from_BD_Shape_mpq_class` (ppl_Int64_Box_t *pph, ppl_const_BD_Shape_mpq_class_t ph)
- int `ppl_new_Int64_Box_from_Octagonal_Shape_int8_t` (ppl_Int64_Box_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph)
- int `ppl_new_Int64_Box_from_Octagonal_Shape_int16_t` (ppl_Int64_Box_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph)
- int `ppl_new_Int64_Box_from_Octagonal_Shape_int32_t` (ppl_Int64_Box_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph)
- int `ppl_new_Int64_Box_from_Octagonal_Shape_int64_t` (ppl_Int64_Box_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph)
- int `ppl_new_Int64_Box_from_Octagonal_Shape_mpz_class` (ppl_Int64_Box_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph)
- int `ppl_new_Int64_Box_from_Octagonal_Shape_mpq_class` (ppl_Int64_Box_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph)
- int `ppl_new_Int64_Box_from_C_Polyhedron` (ppl_Int64_Box_t *pph, ppl_const_Polyhedron_t ph)
- int `ppl_new_Int64_Box_from_NNC_Polyhedron` (ppl_Int64_Box_t *pph, ppl_const_Polyhedron_t ph)
- int `ppl_new_Int64_Box_from_Grid` (ppl_Int64_Box_t *pph, ppl_const_Grid_t ph)
- int `ppl_new_Int64_Box_from_Float_Box` (ppl_Int64_Box_t *pph, ppl_const_Float_Box_t ph)
- int `ppl_new_Int64_Box_from_BD_Shape_float` (ppl_Int64_Box_t *pph, ppl_const_BD_Shape_float_t_t ph)
- int `ppl_new_Int64_Box_from_Octagonal_Shape_float` (ppl_Int64_Box_t *pph, ppl_const_Octagonal_Shape_float_t_t ph)
- int `ppl_new_Int64_Box_from_Double_Box` (ppl_Int64_Box_t *pph, ppl_const_Double_Box_t ph)
- int `ppl_new_Int64_Box_from_BD_Shape_double` (ppl_Int64_Box_t *pph, ppl_const_BD_Shape_double_t_t ph)
- int `ppl_new_Int64_Box_from_Octagonal_Shape_double` (ppl_Int64_Box_t *pph, ppl_const_Octagonal_Shape_double_t_t ph)

- `int ppl_new_Int64_Box_from_Long_Double_Box` (`ppl_Int64_Box_t *pph`, `ppl_const_Long_Double_Box_t ph`)
- `int ppl_new_Int64_Box_from_BD_Shape_long_double` (`ppl_Int64_Box_t *pph`, `ppl_const_BD_Shape_long_double_t ph`)
- `int ppl_new_Int64_Box_from_Octagonal_Shape_long_double` (`ppl_Int64_Box_t *pph`, `ppl_const_Octagonal_Shape_long_double_t ph`)
- `int ppl_new_Int64_Box_from_Int8_Box_with_complexity` (`ppl_Int64_Box_t *pph`, `ppl_const_Int8_Box_t ph`, `int complexity`)
- `int ppl_new_Int64_Box_from_Int16_Box_with_complexity` (`ppl_Int64_Box_t *pph`, `ppl_const_Int16_Box_t ph`, `int complexity`)
- `int ppl_new_Int64_Box_from_Int32_Box_with_complexity` (`ppl_Int64_Box_t *pph`, `ppl_const_Int32_Box_t ph`, `int complexity`)
- `int ppl_new_Int64_Box_from_Int64_Box_with_complexity` (`ppl_Int64_Box_t *pph`, `ppl_const_Int64_Box_t ph`, `int complexity`)
- `int ppl_new_Int64_Box_from_Uint8_Box_with_complexity` (`ppl_Int64_Box_t *pph`, `ppl_const_Uint8_Box_t ph`, `int complexity`)
- `int ppl_new_Int64_Box_from_Uint16_Box_with_complexity` (`ppl_Int64_Box_t *pph`, `ppl_const_Uint16_Box_t ph`, `int complexity`)
- `int ppl_new_Int64_Box_from_Uint32_Box_with_complexity` (`ppl_Int64_Box_t *pph`, `ppl_const_Uint32_Box_t ph`, `int complexity`)
- `int ppl_new_Int64_Box_from_Uint64_Box_with_complexity` (`ppl_Int64_Box_t *pph`, `ppl_const_Uint64_Box_t ph`, `int complexity`)
- `int ppl_new_Int64_Box_from_Z_Box_with_complexity` (`ppl_Int64_Box_t *pph`, `ppl_const_Z_Box_t ph`, `int complexity`)
- `int ppl_new_Int64_Box_from_Rational_Box_with_complexity` (`ppl_Int64_Box_t *pph`, `ppl_const_Rational_Box_t ph`, `int complexity`)
- `int ppl_new_Int64_Box_from_BD_Shape_int8_t_with_complexity` (`ppl_Int64_Box_t *pph`, `ppl_const_BD_Shape_int8_t_t ph`, `int complexity`)
- `int ppl_new_Int64_Box_from_BD_Shape_int16_t_with_complexity` (`ppl_Int64_Box_t *pph`, `ppl_const_BD_Shape_int16_t_t ph`, `int complexity`)
- `int ppl_new_Int64_Box_from_BD_Shape_int32_t_with_complexity` (`ppl_Int64_Box_t *pph`, `ppl_const_BD_Shape_int32_t_t ph`, `int complexity`)
- `int ppl_new_Int64_Box_from_BD_Shape_int64_t_with_complexity` (`ppl_Int64_Box_t *pph`, `ppl_const_BD_Shape_int64_t_t ph`, `int complexity`)
- `int ppl_new_Int64_Box_from_BD_Shape_mpz_class_with_complexity` (`ppl_Int64_Box_t *pph`, `ppl_const_BD_Shape_mpz_class_t ph`, `int complexity`)
- `int ppl_new_Int64_Box_from_BD_Shape_mpq_class_with_complexity` (`ppl_Int64_Box_t *pph`, `ppl_const_BD_Shape_mpq_class_t ph`, `int complexity`)
- `int ppl_new_Int64_Box_from_Octagonal_Shape_int8_t_with_complexity` (`ppl_Int64_Box_t *pph`, `ppl_const_Octagonal_Shape_int8_t_t ph`, `int complexity`)
- `int ppl_new_Int64_Box_from_Octagonal_Shape_int16_t_with_complexity` (`ppl_Int64_Box_t *pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`, `int complexity`)
- `int ppl_new_Int64_Box_from_Octagonal_Shape_int32_t_with_complexity` (`ppl_Int64_Box_t *pph`, `ppl_const_Octagonal_Shape_int32_t_t ph`, `int complexity`)
- `int ppl_new_Int64_Box_from_Octagonal_Shape_int64_t_with_complexity` (`ppl_Int64_Box_t *pph`, `ppl_const_Octagonal_Shape_int64_t_t ph`, `int complexity`)
- `int ppl_new_Int64_Box_from_Octagonal_Shape_mpz_class_with_complexity` (`ppl_Int64_Box_t *pph`, `ppl_const_Octagonal_Shape_mpz_class_t ph`, `int complexity`)
- `int ppl_new_Int64_Box_from_Octagonal_Shape_mpq_class_with_complexity` (`ppl_Int64_Box_t *pph`, `ppl_const_Octagonal_Shape_mpq_class_t ph`, `int complexity`)
- `int ppl_new_Int64_Box_from_C_Polyhedron_with_complexity` (`ppl_Int64_Box_t *pph`, `ppl_const_Polyhedron_t ph`, `int complexity`)

- int [ppl_new_Int64_Box_from_NNC_Polyhedron_with_complexity](#) (ppl_Int64_Box_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_Int64_Box_from_Grid_with_complexity](#) (ppl_Int64_Box_t *pph, ppl_const_Grid_t ph, int complexity)
- int [ppl_new_Int64_Box_from_Float_Box_with_complexity](#) (ppl_Int64_Box_t *pph, ppl_const_Float_Box_t ph, int complexity)
- int [ppl_new_Int64_Box_from_BD_Shape_float_with_complexity](#) (ppl_Int64_Box_t *pph, ppl_const_BD_Shape_float_t ph, int complexity)
- int [ppl_new_Int64_Box_from_Octagonal_Shape_float_with_complexity](#) (ppl_Int64_Box_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)
- int [ppl_new_Int64_Box_from_Double_Box_with_complexity](#) (ppl_Int64_Box_t *pph, ppl_const_Double_Box_t ph, int complexity)
- int [ppl_new_Int64_Box_from_BD_Shape_double_with_complexity](#) (ppl_Int64_Box_t *pph, ppl_const_BD_Shape_double_t ph, int complexity)
- int [ppl_new_Int64_Box_from_Octagonal_Shape_double_with_complexity](#) (ppl_Int64_Box_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)
- int [ppl_new_Int64_Box_from_Long_Double_Box_with_complexity](#) (ppl_Int64_Box_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- int [ppl_new_Int64_Box_from_BD_Shape_long_double_with_complexity](#) (ppl_Int64_Box_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity)
- int [ppl_new_Int64_Box_from_Octagonal_Shape_long_double_with_complexity](#) (ppl_Int64_Box_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)
- int [ppl_new_Int64_Box_from_Constraint_System](#) (ppl_Int64_Box_t *pph, ppl_const_Constraint_System_t cs)
- int [ppl_new_Int64_Box_from_Congruence_System](#) (ppl_Int64_Box_t *pph, ppl_const_Congruence_System_t cs)
- int [ppl_new_Int64_Box_from_Generator_System](#) (ppl_Int64_Box_t *pph, ppl_const_Generator_System_t cs)
- int [ppl_Int64_Box_space_dimension](#) (ppl_const_Int64_Box_t ph, [ppl_dimension_type](#) *m)
- int [ppl_Int64_Box_affine_dimension](#) (ppl_const_Int64_Box_t ph, [ppl_dimension_type](#) *m)
- int [ppl_Int64_Box_relation_with_Constraint](#) (ppl_const_Int64_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Int64_Box_relation_with_Generator](#) (ppl_const_Int64_Box_t ph, ppl_const_Generator_t c)
- int [ppl_Int64_Box_relation_with_Congruence](#) (ppl_const_Int64_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Int64_Box_get_constraints](#) (ppl_const_Int64_Box_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_Int64_Box_get_congruences](#) (ppl_const_Int64_Box_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_Int64_Box_get_minimized_constraints](#) (ppl_const_Int64_Box_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_Int64_Box_get_minimized_congruences](#) (ppl_const_Int64_Box_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_Int64_Box_is_empty](#) (ppl_const_Int64_Box_t ph)
- int [ppl_Int64_Box_is_universe](#) (ppl_const_Int64_Box_t ph)
- int [ppl_Int64_Box_is_bounded](#) (ppl_const_Int64_Box_t ph)
- int [ppl_Int64_Box_contains_integer_point](#) (ppl_const_Int64_Box_t ph)
- int [ppl_Int64_Box_is_topologically_closed](#) (ppl_const_Int64_Box_t ph)
- int [ppl_Int64_Box_is_discrete](#) (ppl_const_Int64_Box_t ph)
- int [ppl_Int64_Box_topological_closure_assign](#) (ppl_Int64_Box_t ph)
- int [ppl_Int64_Box_bounds_from_above](#) (ppl_const_Int64_Box_t ph, ppl_const_Linear_Expression_t le)

- `int ppl_Int64_Box_bounds_from_below` (`ppl_const_Int64_Box_t` ph, `ppl_const_Linear_Expression_t` le)
- `int ppl_Int64_Box_maximize` (`ppl_const_Int64_Box_t` ph, `ppl_const_Linear_Expression_t` le, `ppl_Coefficient_t` ext_n, `ppl_Coefficient_t` ext_d, `int` *poptimum)
- `int ppl_Int64_Box_minimize` (`ppl_const_Int64_Box_t` ph, `ppl_const_Linear_Expression_t` le, `ppl_Coefficient_t` ext_n, `ppl_Coefficient_t` ext_d, `int` *poptimum)
- `int ppl_Int64_Box_maximize_with_point` (`ppl_const_Int64_Box_t` ph, `ppl_const_Linear_Expression_t` le, `ppl_Coefficient_t` ext_n, `ppl_Coefficient_t` ext_d, `int` *poptimum, `ppl_Generator_t` point)
- `int ppl_Int64_Box_minimize_with_point` (`ppl_const_Int64_Box_t` ph, `ppl_const_Linear_Expression_t` le, `ppl_Coefficient_t` ext_n, `ppl_Coefficient_t` ext_d, `int` *poptimum, `ppl_Generator_t` point)
- `int ppl_Int64_Box_frequency` (`ppl_const_Int64_Box_t` ph, `ppl_const_Linear_Expression_t` le, `ppl_Coefficient_t` ext_fn, `ppl_Coefficient_t` ext_fd, `ppl_Coefficient_t` ext_vn, `ppl_Coefficient_t` ext_vd)
- `int ppl_Int64_Box_contains_Int64_Box` (`ppl_const_Int64_Box_t` x, `ppl_const_Int64_Box_t` y)
- `int ppl_Int64_Box_strictly_contains_Int64_Box` (`ppl_const_Int64_Box_t` x, `ppl_const_Int64_Box_t` y)
- `int ppl_Int64_Box_is_disjoint_from_Int64_Box` (`ppl_const_Int64_Box_t` x, `ppl_const_Int64_Box_t` y)
- `int ppl_Int64_Box_equals_Int64_Box` (`ppl_const_Int64_Box_t` x, `ppl_const_Int64_Box_t` y)
- `int ppl_Int64_Box_OK` (`ppl_const_Int64_Box_t` ph)
- `int ppl_Int64_Box_add_constraint` (`ppl_Int64_Box_t` ph, `ppl_const_Constraint_t` c)
- `int ppl_Int64_Box_add_congruence` (`ppl_Int64_Box_t` ph, `ppl_const_Congruence_t` c)
- `int ppl_Int64_Box_add_constraints` (`ppl_Int64_Box_t` ph, `ppl_const_Constraint_System_t` cs)
- `int ppl_Int64_Box_add_congruences` (`ppl_Int64_Box_t` ph, `ppl_const_Congruence_System_t` cs)
- `int ppl_Int64_Box_refine_with_constraint` (`ppl_Int64_Box_t` ph, `ppl_const_Constraint_t` c)
- `int ppl_Int64_Box_refine_with_congruence` (`ppl_Int64_Box_t` ph, `ppl_const_Congruence_t` c)
- `int ppl_Int64_Box_refine_with_constraints` (`ppl_Int64_Box_t` ph, `ppl_const_Constraint_System_t` cs)
- `int ppl_Int64_Box_refine_with_congruences` (`ppl_Int64_Box_t` ph, `ppl_const_Congruence_System_t` cs)
- `int ppl_Int64_Box_intersection_assign` (`ppl_Int64_Box_t` x, `ppl_const_Int64_Box_t` y)
- `int ppl_Int64_Box_upper_bound_assign` (`ppl_Int64_Box_t` x, `ppl_const_Int64_Box_t` y)
- `int ppl_Int64_Box_difference_assign` (`ppl_Int64_Box_t` x, `ppl_const_Int64_Box_t` y)
- `int ppl_Int64_Box_concatenate_assign` (`ppl_Int64_Box_t` x, `ppl_const_Int64_Box_t` y)
- `int ppl_Int64_Box_time_elapse_assign` (`ppl_Int64_Box_t` x, `ppl_const_Int64_Box_t` y)
- `int ppl_Int64_Box_upper_bound_assign_if_exact` (`ppl_Int64_Box_t` x, `ppl_const_Int64_Box_t` y)
- `int ppl_Int64_Box_simplify_using_context_assign` (`ppl_Int64_Box_t` x, `ppl_const_Int64_Box_t` y)
- `int ppl_Int64_Box_constrains` (`ppl_Int64_Box_t` ph, `ppl_dimension_type` var)
- `int ppl_Int64_Box_unconstrain_space_dimension` (`ppl_Int64_Box_t` ph, `ppl_dimension_type` var)
- `int ppl_Int64_Box_unconstrain_space_dimensions` (`ppl_Int64_Box_t` ph, `ppl_dimension_type` ds[], `size_t` n)
- `int ppl_Int64_Box_affine_image` (`ppl_Int64_Box_t` ph, `ppl_dimension_type` var, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- `int ppl_Int64_Box_affine_preimage` (`ppl_Int64_Box_t` ph, `ppl_dimension_type` var, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- `int ppl_Int64_Box_bounded_affine_image` (`ppl_Int64_Box_t` ph, `ppl_dimension_type` var, `ppl_const_Linear_Expression_t` lb, `ppl_const_Linear_Expression_t` ub, `ppl_const_Coefficient_t` d)
- `int ppl_Int64_Box_bounded_affine_preimage` (`ppl_Int64_Box_t` ph, `ppl_dimension_type` var, `ppl_const_Linear_Expression_t` lb, `ppl_const_Linear_Expression_t` ub, `ppl_const_Coefficient_t` d)
- `int ppl_Int64_Box_generalized_affine_image` (`ppl_Int64_Box_t` ph, `ppl_dimension_type` var, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)

- int [ppl_Int64_Box_generalized_affine_preimage](#) (ppl_Int64_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Int64_Box_generalized_affine_image_lhs_rhs](#) (ppl_Int64_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Int64_Box_generalized_affine_preimage_lhs_rhs](#) (ppl_Int64_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Int64_Box_add_space_dimensions_and_embed](#) (ppl_Int64_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Int64_Box_add_space_dimensions_and_project](#) (ppl_Int64_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Int64_Box_remove_space_dimensions](#) (ppl_Int64_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Int64_Box_remove_higher_space_dimensions](#) (ppl_Int64_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Int64_Box_expand_space_dimension](#) (ppl_Int64_Box_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Int64_Box_fold_space_dimensions](#) (ppl_Int64_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_Int64_Box_map_space_dimensions](#) (ppl_Int64_Box_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_Int64_Box_drop_some_non_integer_points](#) (ppl_Int64_Box_t ph, int complexity)
- int [ppl_Int64_Box_drop_some_non_integer_points_2](#) (ppl_Int64_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_Int64_Box_external_memory_in_bytes](#) (ppl_const_Int64_Box_t ps, size_t *sz)
- int [ppl_Int64_Box_total_memory_in_bytes](#) (ppl_const_Int64_Box_t ps, size_t *sz)
- int [ppl_Int64_Box_CC76_widening_assign_with_tokens](#) (ppl_Int64_Box_t x, ppl_const_Int64_Box_t y, unsigned *tp)
- int [ppl_Int64_Box_CC76_widening_assign](#) (ppl_Int64_Box_t x, ppl_const_Int64_Box_t y)
- int [ppl_Int64_Box_widening_assign_with_tokens](#) (ppl_Int64_Box_t x, ppl_const_Int64_Box_t y, unsigned *tp)
- int [ppl_Int64_Box_widening_assign](#) (ppl_Int64_Box_t x, ppl_const_Int64_Box_t y)
- int [ppl_Int64_Box_limited_CC76_extrapolation_assign_with_tokens](#) (ppl_Int64_Box_t x, ppl_const_Int64_Box_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- int [ppl_Int64_Box_limited_CC76_extrapolation_assign](#) (ppl_Int64_Box_t x, ppl_const_Int64_Box_t y, ppl_const_Constraint_System_t cs)
- int [ppl_Int64_Box_linear_partition](#) (ppl_const_Int64_Box_t x, ppl_const_Int64_Box_t y, ppl_Int64_Box_t *p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest)
- int [ppl_Int64_Box_wrap_assign](#) (ppl_Int64_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, enum [ppl_enum_Bounded_Integer_Type_Width](#) w, enum [ppl_enum_Bounded_Integer_Type_Representation](#) r, enum [ppl_enum_Bounded_Integer_Type_Overflow](#) o, const ppl_const_Constraint_System_t *pcs, unsigned complexity_threshold, int wrap_individually)
- int [ppl_new_Int64_Box_recycle_Constraint_System](#) (ppl_Int64_Box_t *pph, ppl_Constraint_System_t cs)
- int [ppl_new_Int64_Box_recycle_Congruence_System](#) (ppl_Int64_Box_t *pph, ppl_Congruence_System_t cs)
- int [ppl_new_Int64_Box_recycle_Generator_System](#) (ppl_Int64_Box_t *pph, ppl_Generator_System_t cs)
- int [ppl_assign_Int64_Box_from_Int64_Box](#) (ppl_Int64_Box_t dst, ppl_const_Int64_Box_t src)
- int [ppl_Int64_Box_add_recycled_constraints](#) (ppl_Int64_Box_t ph, ppl_Constraint_System_t cs)
- int [ppl_Int64_Box_add_recycled_congruences](#) (ppl_Int64_Box_t ph, ppl_Congruence_System_t cs)
- int [ppl_termination_test_MS_Int64_Box](#) (ppl_const_Int64_Box_t pset)

- int [ppl_termination_test_PR_Int64_Box](#) (ppl_const_Int64_Box_t pset)
- int [ppl_one_affine_ranking_function_MS_Int64_Box](#) (ppl_const_Int64_Box_t pset, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_Int64_Box](#) (ppl_const_Int64_Box_t pset, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_Int64_Box](#) (ppl_const_Int64_Box_t pset, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_Int64_Box](#) (ppl_const_Int64_Box_t pset, ppl_Polyhedron_t ph)
- int [ppl_termination_test_MS_Int64_Box_2](#) (ppl_const_Int64_Box_t pset_before, ppl_const_Int64_Box_t pset_after)
- int [ppl_termination_test_PR_Int64_Box_2](#) (ppl_const_Int64_Box_t pset_before, ppl_const_Int64_Box_t pset_after)
- int [ppl_one_affine_ranking_function_MS_Int64_Box_2](#) (ppl_const_Int64_Box_t pset_before, ppl_const_Int64_Box_t pset_after, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_Int64_Box_2](#) (ppl_const_Int64_Box_t pset_before, ppl_const_Int64_Box_t pset_after, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_Int64_Box_2](#) (ppl_const_Int64_Box_t pset_before, ppl_const_Int64_Box_t pset_after, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_Int64_Box_2](#) (ppl_const_Int64_Box_t pset_before, ppl_const_Int64_Box_t pset_after, ppl_Polyhedron_t ph)

10.36.1 Detailed Description

Types and functions for [ppl_Int64_Box_tag](#).

10.36.2 Friends And Related Function Documentation

10.36.2.1 int [ppl_all_affine_ranking_functions_MS_Int64_Box](#) (ppl_const_Int64_Box_t *pset*, ppl_Polyhedron_t *ph*) [**related**]

10.36.2.2 int [ppl_all_affine_ranking_functions_MS_Int64_Box_2](#) (ppl_const_Int64_Box_t *pset_before*, ppl_const_Int64_Box_t *pset_after*, ppl_Polyhedron_t *ph*) [**related**]

10.36.2.3 int [ppl_all_affine_ranking_functions_PR_Int64_Box](#) (ppl_const_Int64_Box_t *pset*, ppl_Polyhedron_t *ph*) [**related**]

10.36.2.4 int [ppl_all_affine_ranking_functions_PR_Int64_Box_2](#) (ppl_const_Int64_Box_t *pset_before*, ppl_const_Int64_Box_t *pset_after*, ppl_Polyhedron_t *ph*) [**related**]

- 10.36.2.5 `int ppl_assign_Int64_Box_from_Int64_Box (ppl_Int64_Box_t dst,
ppl_const_Int64_Box_t src)` [`related`]
- 10.36.2.6 `int ppl_delete_Int64_Box (ppl_const_Int64_Box_t ph)` [`related`]
- 10.36.2.7 `int ppl_Int64_Box_add_congruence (ppl_Int64_Box_t ph, ppl_const_Congruence_t c)`
[`related`]
- 10.36.2.8 `int ppl_Int64_Box_add_congruences (ppl_Int64_Box_t ph,
ppl_const_Congruence_System_t cs)` [`related`]
- 10.36.2.9 `int ppl_Int64_Box_add_constraint (ppl_Int64_Box_t ph, ppl_const_Constraint_t c)`
[`related`]
- 10.36.2.10 `int ppl_Int64_Box_add_constraints (ppl_Int64_Box_t ph,
ppl_const_Constraint_System_t cs)` [`related`]
- 10.36.2.11 `int ppl_Int64_Box_add_recycled_congruences (ppl_Int64_Box_t ph,
ppl_Congruence_System_t cs)` [`related`]
- 10.36.2.12 `int ppl_Int64_Box_add_recycled_constraints (ppl_Int64_Box_t ph,
ppl_Constraint_System_t cs)` [`related`]
- 10.36.2.13 `int ppl_Int64_Box_add_space_dimensions_and_embed (ppl_Int64_Box_t ph,
ppl_dimension_type d)` [`related`]
- 10.36.2.14 `int ppl_Int64_Box_add_space_dimensions_and_project (ppl_Int64_Box_t ph,
ppl_dimension_type d)` [`related`]

- 10.36.2.15 `int ppl_Int64_Box_affine_dimension (ppl_const_Int64_Box_t ph, ppl_dimension_type * m)` [`related`]
- 10.36.2.16 `int ppl_Int64_Box_affine_image (ppl_Int64_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.36.2.17 `int ppl_Int64_Box_affine_preimage (ppl_Int64_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.36.2.18 `int ppl_Int64_Box_bounded_affine_image (ppl_Int64_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [`related`]
- 10.36.2.19 `int ppl_Int64_Box_bounded_affine_preimage (ppl_Int64_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [`related`]
- 10.36.2.20 `int ppl_Int64_Box_bounds_from_above (ppl_const_Int64_Box_t ph, ppl_const_Linear_Expression_t le)` [`related`]
- 10.36.2.21 `int ppl_Int64_Box_bounds_from_below (ppl_const_Int64_Box_t ph, ppl_const_Linear_Expression_t le)` [`related`]
- 10.36.2.22 `int ppl_Int64_Box_CC76_widening_assign (ppl_Int64_Box_t x, ppl_const_Int64_Box_t y)` [`related`]
- 10.36.2.23 `int ppl_Int64_Box_CC76_widening_assign_with_tokens (ppl_Int64_Box_t x, ppl_const_Int64_Box_t y, unsigned * tp)` [`related`]

10.36.2.24 `int ppl_Int64_Box_concatenate_assign (ppl_Int64_Box_t x, ppl_const_Int64_Box_t y)`
[related]

10.36.2.25 `int ppl_Int64_Box_constrains (ppl_Int64_Box_t ph, ppl_dimension_type var)`
[related]

10.36.2.26 `int ppl_Int64_Box_contains_Int64_Box (ppl_const_Int64_Box_t x, ppl_const_Int64_Box_t y)` [related]

10.36.2.27 `int ppl_Int64_Box_contains_integer_point (ppl_const_Int64_Box_t ph)` [related]

10.36.2.28 `int ppl_Int64_Box_difference_assign (ppl_Int64_Box_t x, ppl_const_Int64_Box_t y)`
[related]

10.36.2.29 `int ppl_Int64_Box_drop_some_non_integer_points (ppl_Int64_Box_t ph, int complexity)` [related]

10.36.2.30 `int ppl_Int64_Box_drop_some_non_integer_points_2 (ppl_Int64_Box_t ph, ppl_dimension_type ds[], size_t n, int complexity)` [related]

10.36.2.31 `int ppl_Int64_Box_equals_Int64_Box (ppl_const_Int64_Box_t x, ppl_const_Int64_Box_t y)` [related]

10.36.2.32 `int ppl_Int64_Box_expand_space_dimension (ppl_Int64_Box_t ph, ppl_dimension_type d, ppl_dimension_type m)` [related]

10.36.2.33 `int ppl_Int64_Box_external_memory_in_bytes (ppl_const_Int64_Box_t ps, size_t * sz)`
[related]

- 10.36.2.34 `int ppl_Int64_Box_fold_space_dimensions (ppl_Int64_Box_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [`related`]
- 10.36.2.35 `int ppl_Int64_Box_frequency (ppl_const_Int64_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)` [`related`]
- 10.36.2.36 `int ppl_Int64_Box_generalized_affine_image (ppl_Int64_Box_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.36.2.37 `int ppl_Int64_Box_generalized_affine_image_lhs_rhs (ppl_Int64_Box_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t rhs)` [`related`]
- 10.36.2.38 `int ppl_Int64_Box_generalized_affine_preimage (ppl_Int64_Box_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.36.2.39 `int ppl_Int64_Box_generalized_affine_preimage_lhs_rhs (ppl_Int64_Box_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t rhs)` [`related`]
- 10.36.2.40 `int ppl_Int64_Box_get_congruences (ppl_const_Int64_Box_t ph, ppl_const_Congruence_System_t * pcs)` [`related`]
- 10.36.2.41 `int ppl_Int64_Box_get_constraints (ppl_const_Int64_Box_t ph, ppl_const_Constraint_System_t * pcs)` [`related`]

- 10.36.2.42 `int ppl_Int64_Box_get_minimized_congruences (ppl_const_Int64_Box_t ph,
ppl_const_Congruence_System_t * pcs)` [related]
- 10.36.2.43 `int ppl_Int64_Box_get_minimized_constraints (ppl_const_Int64_Box_t ph,
ppl_const_Constraint_System_t * pcs)` [related]
- 10.36.2.44 `int ppl_Int64_Box_intersection_assign (ppl_Int64_Box_t x, ppl_const_Int64_Box_t y)`
[related]
- 10.36.2.45 `int ppl_Int64_Box_is_bounded (ppl_const_Int64_Box_t ph)` [related]
- 10.36.2.46 `int ppl_Int64_Box_is_discrete (ppl_const_Int64_Box_t ph)` [related]
- 10.36.2.47 `int ppl_Int64_Box_is_disjoint_from_Int64_Box (ppl_const_Int64_Box_t x,
ppl_const_Int64_Box_t y)` [related]
- 10.36.2.48 `int ppl_Int64_Box_is_empty (ppl_const_Int64_Box_t ph)` [related]
- 10.36.2.49 `int ppl_Int64_Box_is_topologically_closed (ppl_const_Int64_Box_t ph)` [related]
- 10.36.2.50 `int ppl_Int64_Box_is_universe (ppl_const_Int64_Box_t ph)` [related]
- 10.36.2.51 `int ppl_Int64_Box_limited_CC76_extrapolation_assign (ppl_Int64_Box_t x,
ppl_const_Int64_Box_t y, ppl_const_Constraint_System_t cs)` [related]

- 10.36.2.52 `int ppl_Int64_Box_limited_CC76_extrapolation_assign_with_tokens (ppl_Int64_Box_t x, ppl_const_Int64_Box_t y, ppl_const_Constraint_System_t cs, unsigned * tp)` [related]
- 10.36.2.53 `int ppl_Int64_Box_linear_partition (ppl_const_Int64_Box_t x, ppl_const_Int64_Box_t y, ppl_Int64_Box_t * p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t * p_rest)` [related]
- 10.36.2.54 `int ppl_Int64_Box_map_space_dimensions (ppl_Int64_Box_t ph, ppl_dimension_type maps[], size_t n)` [related]
- 10.36.2.55 `int ppl_Int64_Box_maximize (ppl_const_Int64_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * optimum)` [related]
- 10.36.2.56 `int ppl_Int64_Box_maximize_with_point (ppl_const_Int64_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * optimum, ppl_Generator_t point)` [related]
- 10.36.2.57 `int ppl_Int64_Box_minimize (ppl_const_Int64_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * optimum)` [related]
- 10.36.2.58 `int ppl_Int64_Box_minimize_with_point (ppl_const_Int64_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * optimum, ppl_Generator_t point)` [related]
- 10.36.2.59 `int ppl_Int64_Box_OK (ppl_const_Int64_Box_t ph)` [related]

- 10.36.2.60 `int ppl_Int64_Box_refine_with_congruence (ppl_Int64_Box_t ph,
ppl_const_Congruence_t c)` [`related`]
- 10.36.2.61 `int ppl_Int64_Box_refine_with_congruences (ppl_Int64_Box_t ph,
ppl_const_Congruence_System_t cs)` [`related`]
- 10.36.2.62 `int ppl_Int64_Box_refine_with_constraint (ppl_Int64_Box_t ph,
ppl_const_Constraint_t c)` [`related`]
- 10.36.2.63 `int ppl_Int64_Box_refine_with_constraints (ppl_Int64_Box_t ph,
ppl_const_Constraint_System_t cs)` [`related`]
- 10.36.2.64 `int ppl_Int64_Box_relation_with_Congruence (ppl_const_Int64_Box_t ph,
ppl_const_Congruence_t c)` [`related`]
- 10.36.2.65 `int ppl_Int64_Box_relation_with_Constraint (ppl_const_Int64_Box_t ph,
ppl_const_Constraint_t c)` [`related`]
- 10.36.2.66 `int ppl_Int64_Box_relation_with_Generator (ppl_const_Int64_Box_t ph,
ppl_const_Generator_t c)` [`related`]
- 10.36.2.67 `int ppl_Int64_Box_remove_higher_space_dimensions (ppl_Int64_Box_t ph,
ppl_dimension_type d)` [`related`]
- 10.36.2.68 `int ppl_Int64_Box_remove_space_dimensions (ppl_Int64_Box_t ph,
ppl_dimension_type ds[], size_t n)` [`related`]

- 10.36.2.69 `int ppl_Int64_Box_simplify_using_context_assign (ppl_Int64_Box_t x, ppl_const_Int64_Box_t y)` [`related`]
- 10.36.2.70 `int ppl_Int64_Box_space_dimension (ppl_const_Int64_Box_t ph, ppl_dimension_type * m)` [`related`]
- 10.36.2.71 `int ppl_Int64_Box_strictly_contains_Int64_Box (ppl_const_Int64_Box_t x, ppl_const_Int64_Box_t y)` [`related`]
- 10.36.2.72 `int ppl_Int64_Box_time_elapse_assign (ppl_Int64_Box_t x, ppl_const_Int64_Box_t y)` [`related`]
- 10.36.2.73 `int ppl_Int64_Box_topological_closure_assign (ppl_Int64_Box_t ph)` [`related`]
- 10.36.2.74 `int ppl_Int64_Box_total_memory_in_bytes (ppl_const_Int64_Box_t ps, size_t * sz)` [`related`]
- 10.36.2.75 `int ppl_Int64_Box_unconstrain_space_dimension (ppl_Int64_Box_t ph, ppl_dimension_type var)` [`related`]
- 10.36.2.76 `int ppl_Int64_Box_unconstrain_space_dimensions (ppl_Int64_Box_t ph, ppl_dimension_type ds[], size_t n)` [`related`]
- 10.36.2.77 `int ppl_Int64_Box_upper_bound_assign (ppl_Int64_Box_t x, ppl_const_Int64_Box_t y)` [`related`]
- 10.36.2.78 `int ppl_Int64_Box_upper_bound_assign_if_exact (ppl_Int64_Box_t x, ppl_const_Int64_Box_t y)` [`related`]

- 10.36.2.79** `int ppl_Int64_Box_widening_assign (ppl_Int64_Box_t x, ppl_const_Int64_Box_t y)`
[related]
- 10.36.2.80** `int ppl_Int64_Box_widening_assign_with_tokens (ppl_Int64_Box_t x, ppl_const_Int64_Box_t y, unsigned *tp)` [related]
- 10.36.2.81** `int ppl_Int64_Box_wrap_assign (ppl_Int64_Box_t ph, ppl_dimension_type ds[], size_t n, enum ppl_enum_Bounded_Integer_Type_Width w, enum ppl_enum_Bounded_Integer_Type_Representation r, enum ppl_enum_Bounded_Integer_Type_Overflow o, const ppl_const_Constraint_System_t *pcs, unsigned complexity_threshold, int wrap_individually)` [related]
- 10.36.2.82** `int ppl_new_Int64_Box_from_BD_Shape_double (ppl_Int64_Box_t *pph, ppl_const_BD_Shape_double_t ph)` [related]
- 10.36.2.83** `int ppl_new_Int64_Box_from_BD_Shape_double_with_complexity (ppl_Int64_Box_t *pph, ppl_const_BD_Shape_double_t ph, int complexity)` [related]
- 10.36.2.84** `int ppl_new_Int64_Box_from_BD_Shape_float (ppl_Int64_Box_t *pph, ppl_const_BD_Shape_float_t ph)` [related]
- 10.36.2.85** `int ppl_new_Int64_Box_from_BD_Shape_float_with_complexity (ppl_Int64_Box_t *pph, ppl_const_BD_Shape_float_t ph, int complexity)` [related]
- 10.36.2.86** `int ppl_new_Int64_Box_from_BD_Shape_int16_t (ppl_Int64_Box_t *pph, ppl_const_BD_Shape_int16_t_t ph)` [related]
- 10.36.2.87** `int ppl_new_Int64_Box_from_BD_Shape_int16_t_with_complexity (ppl_Int64_Box_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)` [related]

- 10.36.2.88 `int ppl_new_Int64_Box_from_BD_Shape_int32_t (ppl_Int64_Box_t * pph,
ppl_const_BD_Shape_int32_t_t ph)` [`related`]
- 10.36.2.89 `int ppl_new_Int64_Box_from_BD_Shape_int32_t_with_complexity (ppl_Int64_Box_t *
pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)` [`related`]
- 10.36.2.90 `int ppl_new_Int64_Box_from_BD_Shape_int64_t (ppl_Int64_Box_t * pph,
ppl_const_BD_Shape_int64_t_t ph)` [`related`]
- 10.36.2.91 `int ppl_new_Int64_Box_from_BD_Shape_int64_t_with_complexity (ppl_Int64_Box_t *
pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)` [`related`]
- 10.36.2.92 `int ppl_new_Int64_Box_from_BD_Shape_int8_t (ppl_Int64_Box_t * pph,
ppl_const_BD_Shape_int8_t_t ph)` [`related`]
- 10.36.2.93 `int ppl_new_Int64_Box_from_BD_Shape_int8_t_with_complexity (ppl_Int64_Box_t *
pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)` [`related`]
- 10.36.2.94 `int ppl_new_Int64_Box_from_BD_Shape_long_double (ppl_Int64_Box_t * pph,
ppl_const_BD_Shape_long_double_t ph)` [`related`]
- 10.36.2.95 `int ppl_new_Int64_Box_from_BD_Shape_long_double_with_complexity
(ppl_Int64_Box_t * pph, ppl_const_BD_Shape_long_double_t ph, int complexity)`
[`related`]
- 10.36.2.96 `int ppl_new_Int64_Box_from_BD_Shape_mpq_class (ppl_Int64_Box_t * pph,
ppl_const_BD_Shape_mpq_class_t ph)` [`related`]

- 10.36.2.97 `int ppl_new_Int64_Box_from_BD_Shape_mpq_class_with_complexity`
(`ppl_Int64_Box_t * pph`, `ppl_const_BD_Shape_mpq_class_t ph`, `int complexity`)
[related]
- 10.36.2.98 `int ppl_new_Int64_Box_from_BD_Shape_mpz_class` (`ppl_Int64_Box_t * pph`,
`ppl_const_BD_Shape_mpz_class_t ph`) [related]
- 10.36.2.99 `int ppl_new_Int64_Box_from_BD_Shape_mpz_class_with_complexity`
(`ppl_Int64_Box_t * pph`, `ppl_const_BD_Shape_mpz_class_t ph`, `int complexity`)
[related]
- 10.36.2.100 `int ppl_new_Int64_Box_from_C_Polyhedron` (`ppl_Int64_Box_t * pph`,
`ppl_const_Polyhedron_t ph`) [related]
- 10.36.2.101 `int ppl_new_Int64_Box_from_C_Polyhedron_with_complexity` (`ppl_Int64_Box_t *`
`pph`, `ppl_const_Polyhedron_t ph`, `int complexity`) [related]
- 10.36.2.102 `int ppl_new_Int64_Box_from_Congruence_System` (`ppl_Int64_Box_t * pph`,
`ppl_const_Congruence_System_t cs`) [related]
- 10.36.2.103 `int ppl_new_Int64_Box_from_Constraint_System` (`ppl_Int64_Box_t * pph`,
`ppl_const_Constraint_System_t cs`) [related]
- 10.36.2.104 `int ppl_new_Int64_Box_from_Double_Box` (`ppl_Int64_Box_t * pph`,
`ppl_const_Double_Box_t ph`) [related]
- 10.36.2.105 `int ppl_new_Int64_Box_from_Double_Box_with_complexity` (`ppl_Int64_Box_t * pph`,
`ppl_const_Double_Box_t ph`, `int complexity`) [related]

- 10.36.2.106 `int ppl_new_Int64_Box_from_Float_Box (ppl_Int64_Box_t * pph,
ppl_const_Float_Box_t ph)` `[related]`
- 10.36.2.107 `int ppl_new_Int64_Box_from_Float_Box_with_complexity (ppl_Int64_Box_t * pph,
ppl_const_Float_Box_t ph, int complexity)` `[related]`
- 10.36.2.108 `int ppl_new_Int64_Box_from_Generator_System (ppl_Int64_Box_t * pph,
ppl_const_Generator_System_t cs)` `[related]`
- 10.36.2.109 `int ppl_new_Int64_Box_from_Grid (ppl_Int64_Box_t * pph, ppl_const_Grid_t ph)`
`[related]`
- 10.36.2.110 `int ppl_new_Int64_Box_from_Grid_with_complexity (ppl_Int64_Box_t * pph,
ppl_const_Grid_t ph, int complexity)` `[related]`
- 10.36.2.111 `int ppl_new_Int64_Box_from_Int16_Box (ppl_Int64_Box_t * pph,
ppl_const_Int16_Box_t ph)` `[related]`
- 10.36.2.112 `int ppl_new_Int64_Box_from_Int16_Box_with_complexity (ppl_Int64_Box_t * pph,
ppl_const_Int16_Box_t ph, int complexity)` `[related]`
- 10.36.2.113 `int ppl_new_Int64_Box_from_Int32_Box (ppl_Int64_Box_t * pph,
ppl_const_Int32_Box_t ph)` `[related]`
- 10.36.2.114 `int ppl_new_Int64_Box_from_Int32_Box_with_complexity (ppl_Int64_Box_t * pph,
ppl_const_Int32_Box_t ph, int complexity)` `[related]`

- 10.36.2.115 `int ppl_new_Int64_Box_from_Int64_Box (ppl_Int64_Box_t * pph,
ppl_const_Int64_Box_t ph)` [related]
- 10.36.2.116 `int ppl_new_Int64_Box_from_Int64_Box_with_complexity (ppl_Int64_Box_t * pph,
ppl_const_Int64_Box_t ph, int complexity)` [related]
- 10.36.2.117 `int ppl_new_Int64_Box_from_Int8_Box (ppl_Int64_Box_t * pph,
ppl_const_Int8_Box_t ph)` [related]
- 10.36.2.118 `int ppl_new_Int64_Box_from_Int8_Box_with_complexity (ppl_Int64_Box_t * pph,
ppl_const_Int8_Box_t ph, int complexity)` [related]
- 10.36.2.119 `int ppl_new_Int64_Box_from_Long_Double_Box (ppl_Int64_Box_t * pph,
ppl_const_Long_Double_Box_t ph)` [related]
- 10.36.2.120 `int ppl_new_Int64_Box_from_Long_Double_Box_with_complexity (ppl_Int64_Box_t
* pph, ppl_const_Long_Double_Box_t ph, int complexity)` [related]
- 10.36.2.121 `int ppl_new_Int64_Box_from_NNC_Polyhedron (ppl_Int64_Box_t * pph,
ppl_const_Polyhedron_t ph)` [related]
- 10.36.2.122 `int ppl_new_Int64_Box_from_NNC_Polyhedron_with_complexity (ppl_Int64_Box_t *
pph, ppl_const_Polyhedron_t ph, int complexity)` [related]
- 10.36.2.123 `int ppl_new_Int64_Box_from_Octagonal_Shape_double (ppl_Int64_Box_t * pph,
ppl_const_Octagonal_Shape_double_t ph)` [related]

- 10.36.2.124 `int ppl_new_Int64_Box_from_Octagonal_Shape_double_with_complexity`
(`ppl_Int64_Box_t * pph`, `ppl_const_Octagonal_Shape_double_t ph`, `int complexity`)
[related]
- 10.36.2.125 `int ppl_new_Int64_Box_from_Octagonal_Shape_float` (`ppl_Int64_Box_t * pph`,
`ppl_const_Octagonal_Shape_float_t ph`) [related]
- 10.36.2.126 `int ppl_new_Int64_Box_from_Octagonal_Shape_float_with_complexity`
(`ppl_Int64_Box_t * pph`, `ppl_const_Octagonal_Shape_float_t ph`, `int complexity`)
[related]
- 10.36.2.127 `int ppl_new_Int64_Box_from_Octagonal_Shape_int16_t` (`ppl_Int64_Box_t * pph`,
`ppl_const_Octagonal_Shape_int16_t_t ph`) [related]
- 10.36.2.128 `int ppl_new_Int64_Box_from_Octagonal_Shape_int16_t_with_complexity`
(`ppl_Int64_Box_t * pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`, `int complexity`)
[related]
- 10.36.2.129 `int ppl_new_Int64_Box_from_Octagonal_Shape_int32_t` (`ppl_Int64_Box_t * pph`,
`ppl_const_Octagonal_Shape_int32_t_t ph`) [related]
- 10.36.2.130 `int ppl_new_Int64_Box_from_Octagonal_Shape_int32_t_with_complexity`
(`ppl_Int64_Box_t * pph`, `ppl_const_Octagonal_Shape_int32_t_t ph`, `int complexity`)
[related]
- 10.36.2.131 `int ppl_new_Int64_Box_from_Octagonal_Shape_int64_t` (`ppl_Int64_Box_t * pph`,
`ppl_const_Octagonal_Shape_int64_t_t ph`) [related]

- 10.36.2.132 `int ppl_new_Int64_Box_from_Octagonal_Shape_int64_t_with_complexity`
(`ppl_Int64_Box_t * pph`, `ppl_const_Octagonal_Shape_int64_t_t ph`, `int complexity`)
[related]
- 10.36.2.133 `int ppl_new_Int64_Box_from_Octagonal_Shape_int8_t` (`ppl_Int64_Box_t * pph`,
`ppl_const_Octagonal_Shape_int8_t_t ph`) [related]
- 10.36.2.134 `int ppl_new_Int64_Box_from_Octagonal_Shape_int8_t_with_complexity`
(`ppl_Int64_Box_t * pph`, `ppl_const_Octagonal_Shape_int8_t_t ph`, `int complexity`)
[related]
- 10.36.2.135 `int ppl_new_Int64_Box_from_Octagonal_Shape_long_double` (`ppl_Int64_Box_t *`
`pph`, `ppl_const_Octagonal_Shape_long_double_t ph`) [related]
- 10.36.2.136 `int ppl_new_Int64_Box_from_Octagonal_Shape_long_double_with_complexity`
(`ppl_Int64_Box_t * pph`, `ppl_const_Octagonal_Shape_long_double_t ph`, `int`
`complexity`) [related]
- 10.36.2.137 `int ppl_new_Int64_Box_from_Octagonal_Shape_mpq_class` (`ppl_Int64_Box_t * pph`,
`ppl_const_Octagonal_Shape_mpq_class_t ph`) [related]
- 10.36.2.138 `int ppl_new_Int64_Box_from_Octagonal_Shape_mpq_class_with_complexity`
(`ppl_Int64_Box_t * pph`, `ppl_const_Octagonal_Shape_mpq_class_t ph`, `int`
`complexity`) [related]
- 10.36.2.139 `int ppl_new_Int64_Box_from_Octagonal_Shape_mpz_class` (`ppl_Int64_Box_t * pph`,
`ppl_const_Octagonal_Shape_mpz_class_t ph`) [related]

- 10.36.2.140 `int ppl_new_Int64_Box_from_Octagonal_Shape_mpz_class_with_complexity`
`(ppl_Int64_Box_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)`
`[related]`
- 10.36.2.141 `int ppl_new_Int64_Box_from_Rational_Box` `(ppl_Int64_Box_t * pph,`
`ppl_const_Rational_Box_t ph) [related]`
- 10.36.2.142 `int ppl_new_Int64_Box_from_Rational_Box_with_complexity` `(ppl_Int64_Box_t *`
`pph, ppl_const_Rational_Box_t ph, int complexity) [related]`
- 10.36.2.143 `int ppl_new_Int64_Box_from_space_dimension` `(ppl_Int64_Box_t * pph,`
`ppl_dimension_type d, int empty) [related]`
- 10.36.2.144 `int ppl_new_Int64_Box_from_Uint16_Box` `(ppl_Int64_Box_t * pph,`
`ppl_const_Uint16_Box_t ph) [related]`
- 10.36.2.145 `int ppl_new_Int64_Box_from_Uint16_Box_with_complexity` `(ppl_Int64_Box_t * pph,`
`ppl_const_Uint16_Box_t ph, int complexity) [related]`
- 10.36.2.146 `int ppl_new_Int64_Box_from_Uint32_Box` `(ppl_Int64_Box_t * pph,`
`ppl_const_Uint32_Box_t ph) [related]`
- 10.36.2.147 `int ppl_new_Int64_Box_from_Uint32_Box_with_complexity` `(ppl_Int64_Box_t * pph,`
`ppl_const_Uint32_Box_t ph, int complexity) [related]`
- 10.36.2.148 `int ppl_new_Int64_Box_from_Uint64_Box` `(ppl_Int64_Box_t * pph,`
`ppl_const_Uint64_Box_t ph) [related]`

- 10.36.2.149 `int ppl_new_Int64_Box_from_Uint64_Box_with_complexity (ppl_Int64_Box_t * pph,
ppl_const_Uint64_Box_t ph, int complexity)` [`related`]
- 10.36.2.150 `int ppl_new_Int64_Box_from_Uint8_Box (ppl_Int64_Box_t * pph,
ppl_const_Uint8_Box_t ph)` [`related`]
- 10.36.2.151 `int ppl_new_Int64_Box_from_Uint8_Box_with_complexity (ppl_Int64_Box_t * pph,
ppl_const_Uint8_Box_t ph, int complexity)` [`related`]
- 10.36.2.152 `int ppl_new_Int64_Box_from_Z_Box (ppl_Int64_Box_t * pph, ppl_const_Z_Box_t
ph)` [`related`]
- 10.36.2.153 `int ppl_new_Int64_Box_from_Z_Box_with_complexity (ppl_Int64_Box_t * pph,
ppl_const_Z_Box_t ph, int complexity)` [`related`]
- 10.36.2.154 `int ppl_new_Int64_Box_recycle_Congruence_System (ppl_Int64_Box_t * pph,
ppl_Congruence_System_t cs)` [`related`]
- 10.36.2.155 `int ppl_new_Int64_Box_recycle_Constraint_System (ppl_Int64_Box_t * pph,
ppl_Constraint_System_t cs)` [`related`]
- 10.36.2.156 `int ppl_new_Int64_Box_recycle_Generator_System (ppl_Int64_Box_t * pph,
ppl_Generator_System_t cs)` [`related`]
- 10.36.2.157 `int ppl_one_affine_ranking_function_MS_Int64_Box (ppl_const_Int64_Box_t pset,
ppl_Generator_t point)` [`related`]

10.36.2.158 `int ppl_one_affine_ranking_function_MS_Int64_Box_2 (ppl_const_Int64_Box_t pset_before, ppl_const_Int64_Box_t pset_after, ppl_Generator_t point)` [**related**]

10.36.2.159 `int ppl_one_affine_ranking_function_PR_Int64_Box (ppl_const_Int64_Box_t pset, ppl_Generator_t point)` [**related**]

10.36.2.160 `int ppl_one_affine_ranking_function_PR_Int64_Box_2 (ppl_const_Int64_Box_t pset_before, ppl_const_Int64_Box_t pset_after, ppl_Generator_t point)` [**related**]

10.36.2.161 `int ppl_termination_test_MS_Int64_Box (ppl_const_Int64_Box_t pset)` [**related**]

10.36.2.162 `int ppl_termination_test_MS_Int64_Box_2 (ppl_const_Int64_Box_t pset_before, ppl_const_Int64_Box_t pset_after)` [**related**]

10.36.2.163 `int ppl_termination_test_PR_Int64_Box (ppl_const_Int64_Box_t pset)` [**related**]

10.36.2.164 `int ppl_termination_test_PR_Int64_Box_2 (ppl_const_Int64_Box_t pset_before, ppl_const_Int64_Box_t pset_after)` [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.37 ppl_Int8_Box_tag Interface Reference

Types and functions for [ppl_Int8_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl\_delete\_Int8\_Box (ppl_const_Int8_Box_t ph)`

- int [ppl_new_Int8_Box_from_space_dimension](#) (ppl_Int8_Box_t *pph, [ppl_dimension_type](#) d, int empty)
- int [ppl_new_Int8_Box_from_Int8_Box](#) (ppl_Int8_Box_t *pph, ppl_const_Int8_Box_t ph)
- int [ppl_new_Int8_Box_from_Int16_Box](#) (ppl_Int8_Box_t *pph, ppl_const_Int16_Box_t ph)
- int [ppl_new_Int8_Box_from_Int32_Box](#) (ppl_Int8_Box_t *pph, ppl_const_Int32_Box_t ph)
- int [ppl_new_Int8_Box_from_Int64_Box](#) (ppl_Int8_Box_t *pph, ppl_const_Int64_Box_t ph)
- int [ppl_new_Int8_Box_from_Uint8_Box](#) (ppl_Int8_Box_t *pph, ppl_const_Uint8_Box_t ph)
- int [ppl_new_Int8_Box_from_Uint16_Box](#) (ppl_Int8_Box_t *pph, ppl_const_Uint16_Box_t ph)
- int [ppl_new_Int8_Box_from_Uint32_Box](#) (ppl_Int8_Box_t *pph, ppl_const_Uint32_Box_t ph)
- int [ppl_new_Int8_Box_from_Uint64_Box](#) (ppl_Int8_Box_t *pph, ppl_const_Uint64_Box_t ph)
- int [ppl_new_Int8_Box_from_Z_Box](#) (ppl_Int8_Box_t *pph, ppl_const_Z_Box_t ph)
- int [ppl_new_Int8_Box_from_Rational_Box](#) (ppl_Int8_Box_t *pph, ppl_const_Rational_Box_t ph)
- int [ppl_new_Int8_Box_from_BD_Shape_int8_t](#) (ppl_Int8_Box_t *pph, ppl_const_BD_Shape_int8_t_t ph)
- int [ppl_new_Int8_Box_from_BD_Shape_int16_t](#) (ppl_Int8_Box_t *pph, ppl_const_BD_Shape_int16_t_t ph)
- int [ppl_new_Int8_Box_from_BD_Shape_int32_t](#) (ppl_Int8_Box_t *pph, ppl_const_BD_Shape_int32_t_t ph)
- int [ppl_new_Int8_Box_from_BD_Shape_int64_t](#) (ppl_Int8_Box_t *pph, ppl_const_BD_Shape_int64_t_t ph)
- int [ppl_new_Int8_Box_from_BD_Shape_mpz_class](#) (ppl_Int8_Box_t *pph, ppl_const_BD_Shape_mpz_class_t ph)
- int [ppl_new_Int8_Box_from_BD_Shape_mpq_class](#) (ppl_Int8_Box_t *pph, ppl_const_BD_Shape_mpq_class_t ph)
- int [ppl_new_Int8_Box_from_Octagonal_Shape_int8_t](#) (ppl_Int8_Box_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph)
- int [ppl_new_Int8_Box_from_Octagonal_Shape_int16_t](#) (ppl_Int8_Box_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph)
- int [ppl_new_Int8_Box_from_Octagonal_Shape_int32_t](#) (ppl_Int8_Box_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph)
- int [ppl_new_Int8_Box_from_Octagonal_Shape_int64_t](#) (ppl_Int8_Box_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph)
- int [ppl_new_Int8_Box_from_Octagonal_Shape_mpz_class](#) (ppl_Int8_Box_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph)
- int [ppl_new_Int8_Box_from_Octagonal_Shape_mpq_class](#) (ppl_Int8_Box_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph)
- int [ppl_new_Int8_Box_from_C_Polyhedron](#) (ppl_Int8_Box_t *pph, ppl_const_Polyhedron_t ph)
- int [ppl_new_Int8_Box_from_NNC_Polyhedron](#) (ppl_Int8_Box_t *pph, ppl_const_Polyhedron_t ph)
- int [ppl_new_Int8_Box_from_Grid](#) (ppl_Int8_Box_t *pph, ppl_const_Grid_t ph)
- int [ppl_new_Int8_Box_from_Float_Box](#) (ppl_Int8_Box_t *pph, ppl_const_Float_Box_t ph)
- int [ppl_new_Int8_Box_from_BD_Shape_float](#) (ppl_Int8_Box_t *pph, ppl_const_BD_Shape_float_t ph)
- int [ppl_new_Int8_Box_from_Octagonal_Shape_float](#) (ppl_Int8_Box_t *pph, ppl_const_Octagonal_Shape_float_t ph)
- int [ppl_new_Int8_Box_from_Double_Box](#) (ppl_Int8_Box_t *pph, ppl_const_Double_Box_t ph)
- int [ppl_new_Int8_Box_from_BD_Shape_double](#) (ppl_Int8_Box_t *pph, ppl_const_BD_Shape_double_t ph)
- int [ppl_new_Int8_Box_from_Octagonal_Shape_double](#) (ppl_Int8_Box_t *pph, ppl_const_Octagonal_Shape_double_t ph)
- int [ppl_new_Int8_Box_from_Long_Double_Box](#) (ppl_Int8_Box_t *pph, ppl_const_Long_Double_Box_t ph)

- int [ppl_new_Int8_Box_from_BD_Shape_long_double](#) (ppl_Int8_Box_t *pph, ppl_const_BD_Shape_long_double_t ph)
- int [ppl_new_Int8_Box_from_Octagonal_Shape_long_double](#) (ppl_Int8_Box_t *pph, ppl_const_Octagonal_Shape_long_double_t ph)
- int [ppl_new_Int8_Box_from_Int8_Box_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_Int8_Box_t ph, int complexity)
- int [ppl_new_Int8_Box_from_Int16_Box_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_Int16_Box_t ph, int complexity)
- int [ppl_new_Int8_Box_from_Int32_Box_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_Int32_Box_t ph, int complexity)
- int [ppl_new_Int8_Box_from_Int64_Box_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_Int64_Box_t ph, int complexity)
- int [ppl_new_Int8_Box_from_Uint8_Box_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_Uint8_Box_t ph, int complexity)
- int [ppl_new_Int8_Box_from_Uint16_Box_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_Uint16_Box_t ph, int complexity)
- int [ppl_new_Int8_Box_from_Uint32_Box_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_Uint32_Box_t ph, int complexity)
- int [ppl_new_Int8_Box_from_Uint64_Box_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_Uint64_Box_t ph, int complexity)
- int [ppl_new_Int8_Box_from_Z_Box_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_Z_Box_t ph, int complexity)
- int [ppl_new_Int8_Box_from_Rational_Box_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_Rational_Box_t ph, int complexity)
- int [ppl_new_Int8_Box_from_BD_Shape_int8_t_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)
- int [ppl_new_Int8_Box_from_BD_Shape_int16_t_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)
- int [ppl_new_Int8_Box_from_BD_Shape_int32_t_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)
- int [ppl_new_Int8_Box_from_BD_Shape_int64_t_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)
- int [ppl_new_Int8_Box_from_BD_Shape_mpz_class_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_Int8_Box_from_BD_Shape_mpq_class_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_Int8_Box_from_Octagonal_Shape_int8_t_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)
- int [ppl_new_Int8_Box_from_Octagonal_Shape_int16_t_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)
- int [ppl_new_Int8_Box_from_Octagonal_Shape_int32_t_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)
- int [ppl_new_Int8_Box_from_Octagonal_Shape_int64_t_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)
- int [ppl_new_Int8_Box_from_Octagonal_Shape_mpz_class_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_Int8_Box_from_Octagonal_Shape_mpq_class_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_Int8_Box_from_C_Polyhedron_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_Int8_Box_from_NNC_Polyhedron_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_Polyhedron_t ph, int complexity)

- int [ppl_new_Int8_Box_from_Grid_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_Grid_t ph, int complexity)
- int [ppl_new_Int8_Box_from_Float_Box_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_Float_Box_t ph, int complexity)
- int [ppl_new_Int8_Box_from_BD_Shape_float_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_BD_Shape_float_t ph, int complexity)
- int [ppl_new_Int8_Box_from_Octagonal_Shape_float_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)
- int [ppl_new_Int8_Box_from_Double_Box_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_Double_Box_t ph, int complexity)
- int [ppl_new_Int8_Box_from_BD_Shape_double_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_BD_Shape_double_t ph, int complexity)
- int [ppl_new_Int8_Box_from_Octagonal_Shape_double_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)
- int [ppl_new_Int8_Box_from_Long_Double_Box_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- int [ppl_new_Int8_Box_from_BD_Shape_long_double_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity)
- int [ppl_new_Int8_Box_from_Octagonal_Shape_long_double_with_complexity](#) (ppl_Int8_Box_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)
- int [ppl_new_Int8_Box_from_Constraint_System](#) (ppl_Int8_Box_t *pph, ppl_const_Constraint_System_t cs)
- int [ppl_new_Int8_Box_from_Congruence_System](#) (ppl_Int8_Box_t *pph, ppl_const_Congruence_System_t cs)
- int [ppl_new_Int8_Box_from_Generator_System](#) (ppl_Int8_Box_t *pph, ppl_const_Generator_System_t cs)
- int [ppl_Int8_Box_space_dimension](#) (ppl_const_Int8_Box_t ph, [ppl_dimension_type](#) *m)
- int [ppl_Int8_Box_affine_dimension](#) (ppl_const_Int8_Box_t ph, [ppl_dimension_type](#) *m)
- int [ppl_Int8_Box_relation_with_Constraint](#) (ppl_const_Int8_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Int8_Box_relation_with_Generator](#) (ppl_const_Int8_Box_t ph, ppl_const_Generator_t c)
- int [ppl_Int8_Box_relation_with_Congruence](#) (ppl_const_Int8_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Int8_Box_get_constraints](#) (ppl_const_Int8_Box_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_Int8_Box_get_congruences](#) (ppl_const_Int8_Box_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_Int8_Box_get_minimized_constraints](#) (ppl_const_Int8_Box_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_Int8_Box_get_minimized_congruences](#) (ppl_const_Int8_Box_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_Int8_Box_is_empty](#) (ppl_const_Int8_Box_t ph)
- int [ppl_Int8_Box_is_universe](#) (ppl_const_Int8_Box_t ph)
- int [ppl_Int8_Box_is_bounded](#) (ppl_const_Int8_Box_t ph)
- int [ppl_Int8_Box_contains_integer_point](#) (ppl_const_Int8_Box_t ph)
- int [ppl_Int8_Box_is_topologically_closed](#) (ppl_const_Int8_Box_t ph)
- int [ppl_Int8_Box_is_discrete](#) (ppl_const_Int8_Box_t ph)
- int [ppl_Int8_Box_topological_closure_assign](#) (ppl_Int8_Box_t ph)
- int [ppl_Int8_Box_bounds_from_above](#) (ppl_const_Int8_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Int8_Box_bounds_from_below](#) (ppl_const_Int8_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Int8_Box_maximize](#) (ppl_const_Int8_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)

- `int ppl_Int8_Box_minimize` (`ppl_const_Int8_Box_t` ph, `ppl_const_Linear_Expression_t` le, `ppl_Coefficient_t` ext_n, `ppl_Coefficient_t` ext_d, `int` *poptimum)
- `int ppl_Int8_Box_maximize_with_point` (`ppl_const_Int8_Box_t` ph, `ppl_const_Linear_Expression_t` le, `ppl_Coefficient_t` ext_n, `ppl_Coefficient_t` ext_d, `int` *poptimum, `ppl_Generator_t` point)
- `int ppl_Int8_Box_minimize_with_point` (`ppl_const_Int8_Box_t` ph, `ppl_const_Linear_Expression_t` le, `ppl_Coefficient_t` ext_n, `ppl_Coefficient_t` ext_d, `int` *poptimum, `ppl_Generator_t` point)
- `int ppl_Int8_Box_frequency` (`ppl_const_Int8_Box_t` ph, `ppl_const_Linear_Expression_t` le, `ppl_Coefficient_t` ext_fn, `ppl_Coefficient_t` ext_fd, `ppl_Coefficient_t` ext_vn, `ppl_Coefficient_t` ext_vd)
- `int ppl_Int8_Box_contains_Int8_Box` (`ppl_const_Int8_Box_t` x, `ppl_const_Int8_Box_t` y)
- `int ppl_Int8_Box_strictly_contains_Int8_Box` (`ppl_const_Int8_Box_t` x, `ppl_const_Int8_Box_t` y)
- `int ppl_Int8_Box_is_disjoint_from_Int8_Box` (`ppl_const_Int8_Box_t` x, `ppl_const_Int8_Box_t` y)
- `int ppl_Int8_Box_equals_Int8_Box` (`ppl_const_Int8_Box_t` x, `ppl_const_Int8_Box_t` y)
- `int ppl_Int8_Box_OK` (`ppl_const_Int8_Box_t` ph)
- `int ppl_Int8_Box_add_constraint` (`ppl_Int8_Box_t` ph, `ppl_const_Constraint_t` c)
- `int ppl_Int8_Box_add_congruence` (`ppl_Int8_Box_t` ph, `ppl_const_Congruence_t` c)
- `int ppl_Int8_Box_add_constraints` (`ppl_Int8_Box_t` ph, `ppl_const_Constraint_System_t` cs)
- `int ppl_Int8_Box_add_congruences` (`ppl_Int8_Box_t` ph, `ppl_const_Congruence_System_t` cs)
- `int ppl_Int8_Box_refine_with_constraint` (`ppl_Int8_Box_t` ph, `ppl_const_Constraint_t` c)
- `int ppl_Int8_Box_refine_with_congruence` (`ppl_Int8_Box_t` ph, `ppl_const_Congruence_t` c)
- `int ppl_Int8_Box_refine_with_constraints` (`ppl_Int8_Box_t` ph, `ppl_const_Constraint_System_t` cs)
- `int ppl_Int8_Box_refine_with_congruences` (`ppl_Int8_Box_t` ph, `ppl_const_Congruence_System_t` cs)
- `int ppl_Int8_Box_intersection_assign` (`ppl_Int8_Box_t` x, `ppl_const_Int8_Box_t` y)
- `int ppl_Int8_Box_upper_bound_assign` (`ppl_Int8_Box_t` x, `ppl_const_Int8_Box_t` y)
- `int ppl_Int8_Box_difference_assign` (`ppl_Int8_Box_t` x, `ppl_const_Int8_Box_t` y)
- `int ppl_Int8_Box_concatenate_assign` (`ppl_Int8_Box_t` x, `ppl_const_Int8_Box_t` y)
- `int ppl_Int8_Box_time_elapse_assign` (`ppl_Int8_Box_t` x, `ppl_const_Int8_Box_t` y)
- `int ppl_Int8_Box_upper_bound_assign_if_exact` (`ppl_Int8_Box_t` x, `ppl_const_Int8_Box_t` y)
- `int ppl_Int8_Box_simplify_using_context_assign` (`ppl_Int8_Box_t` x, `ppl_const_Int8_Box_t` y)
- `int ppl_Int8_Box_constrains` (`ppl_Int8_Box_t` ph, `ppl_dimension_type` var)
- `int ppl_Int8_Box_unconstrain_space_dimension` (`ppl_Int8_Box_t` ph, `ppl_dimension_type` var)
- `int ppl_Int8_Box_unconstrain_space_dimensions` (`ppl_Int8_Box_t` ph, `ppl_dimension_type` ds[], `size_t` n)
- `int ppl_Int8_Box_affine_image` (`ppl_Int8_Box_t` ph, `ppl_dimension_type` var, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- `int ppl_Int8_Box_affine_preimage` (`ppl_Int8_Box_t` ph, `ppl_dimension_type` var, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- `int ppl_Int8_Box_bounded_affine_image` (`ppl_Int8_Box_t` ph, `ppl_dimension_type` var, `ppl_const_Linear_Expression_t` lb, `ppl_const_Linear_Expression_t` ub, `ppl_const_Coefficient_t` d)
- `int ppl_Int8_Box_bounded_affine_preimage` (`ppl_Int8_Box_t` ph, `ppl_dimension_type` var, `ppl_const_Linear_Expression_t` lb, `ppl_const_Linear_Expression_t` ub, `ppl_const_Coefficient_t` d)
- `int ppl_Int8_Box_generalized_affine_image` (`ppl_Int8_Box_t` ph, `ppl_dimension_type` var, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- `int ppl_Int8_Box_generalized_affine_preimage` (`ppl_Int8_Box_t` ph, `ppl_dimension_type` var, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- `int ppl_Int8_Box_generalized_affine_image_lhs_rhs` (`ppl_Int8_Box_t` ph, `ppl_const_Linear_Expression_t` lhs, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` rhs)
- `int ppl_Int8_Box_generalized_affine_preimage_lhs_rhs` (`ppl_Int8_Box_t` ph, `ppl_const_Linear_Expression_t` lhs, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` rhs)
- `int ppl_Int8_Box_add_space_dimensions_and_embed` (`ppl_Int8_Box_t` ph, `ppl_dimension_type` d)

- int `ppl_Int8_Box_add_space_dimensions_and_project` (ppl_Int8_Box_t ph, ppl_dimension_type d)
- int `ppl_Int8_Box_remove_space_dimensions` (ppl_Int8_Box_t ph, ppl_dimension_type ds[], size_t n)
- int `ppl_Int8_Box_remove_higher_space_dimensions` (ppl_Int8_Box_t ph, ppl_dimension_type d)
- int `ppl_Int8_Box_expand_space_dimension` (ppl_Int8_Box_t ph, ppl_dimension_type d, ppl_dimension_type m)
- int `ppl_Int8_Box_fold_space_dimensions` (ppl_Int8_Box_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)
- int `ppl_Int8_Box_map_space_dimensions` (ppl_Int8_Box_t ph, ppl_dimension_type maps[], size_t n)
- int `ppl_Int8_Box_drop_some_non_integer_points` (ppl_Int8_Box_t ph, int complexity)
- int `ppl_Int8_Box_drop_some_non_integer_points_2` (ppl_Int8_Box_t ph, ppl_dimension_type ds[], size_t n, int complexity)
- int `ppl_Int8_Box_external_memory_in_bytes` (ppl_const_Int8_Box_t ps, size_t *sz)
- int `ppl_Int8_Box_total_memory_in_bytes` (ppl_const_Int8_Box_t ps, size_t *sz)
- int `ppl_Int8_Box_CC76_widening_assign_with_tokens` (ppl_Int8_Box_t x, ppl_const_Int8_Box_t y, unsigned *tp)
- int `ppl_Int8_Box_CC76_widening_assign` (ppl_Int8_Box_t x, ppl_const_Int8_Box_t y)
- int `ppl_Int8_Box_widening_assign_with_tokens` (ppl_Int8_Box_t x, ppl_const_Int8_Box_t y, unsigned *tp)
- int `ppl_Int8_Box_widening_assign` (ppl_Int8_Box_t x, ppl_const_Int8_Box_t y)
- int `ppl_Int8_Box_limited_CC76_extrapolation_assign_with_tokens` (ppl_Int8_Box_t x, ppl_const_Int8_Box_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- int `ppl_Int8_Box_limited_CC76_extrapolation_assign` (ppl_Int8_Box_t x, ppl_const_Int8_Box_t y, ppl_const_Constraint_System_t cs)
- int `ppl_Int8_Box_linear_partition` (ppl_const_Int8_Box_t x, ppl_const_Int8_Box_t y, ppl_Int8_Box_t *p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest)
- int `ppl_Int8_Box_wrap_assign` (ppl_Int8_Box_t ph, ppl_dimension_type ds[], size_t n, enum ppl_enum_Bounded_Integer_Type_Width w, enum ppl_enum_Bounded_Integer_Type_Representation r, enum ppl_enum_Bounded_Integer_Type_Overflow o, const ppl_const_Constraint_System_t *pcs, unsigned complexity_threshold, int wrap_individually)
- int `ppl_new_Int8_Box_recycle_Constraint_System` (ppl_Int8_Box_t *pph, ppl_Constraint_System_t cs)
- int `ppl_new_Int8_Box_recycle_Congruence_System` (ppl_Int8_Box_t *pph, ppl_Congruence_System_t cs)
- int `ppl_new_Int8_Box_recycle_Generator_System` (ppl_Int8_Box_t *pph, ppl_Generator_System_t cs)
- int `ppl_assign_Int8_Box_from_Int8_Box` (ppl_Int8_Box_t dst, ppl_const_Int8_Box_t src)
- int `ppl_Int8_Box_add_recycled_constraints` (ppl_Int8_Box_t ph, ppl_Constraint_System_t cs)
- int `ppl_Int8_Box_add_recycled_congruences` (ppl_Int8_Box_t ph, ppl_Congruence_System_t cs)
- int `ppl_termination_test_MS_Int8_Box` (ppl_const_Int8_Box_t pset)
- int `ppl_termination_test_PR_Int8_Box` (ppl_const_Int8_Box_t pset)
- int `ppl_one_affine_ranking_function_MS_Int8_Box` (ppl_const_Int8_Box_t pset, ppl_Generator_t point)
- int `ppl_one_affine_ranking_function_PR_Int8_Box` (ppl_const_Int8_Box_t pset, ppl_Generator_t point)
- int `ppl_all_affine_ranking_functions_MS_Int8_Box` (ppl_const_Int8_Box_t pset, ppl_Polyhedron_t ph)
- int `ppl_all_affine_ranking_functions_PR_Int8_Box` (ppl_const_Int8_Box_t pset, ppl_Polyhedron_t ph)
- int `ppl_termination_test_MS_Int8_Box_2` (ppl_const_Int8_Box_t pset_before, ppl_const_Int8_Box_t pset_after)

- int [ppl_termination_test_PR_Int8_Box_2](#) (ppl_const_Int8_Box_t pset_before, ppl_const_Int8_Box_t pset_after)
- int [ppl_one_affine_ranking_function_MS_Int8_Box_2](#) (ppl_const_Int8_Box_t pset_before, ppl_const_Int8_Box_t pset_after, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_Int8_Box_2](#) (ppl_const_Int8_Box_t pset_before, ppl_const_Int8_Box_t pset_after, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_Int8_Box_2](#) (ppl_const_Int8_Box_t pset_before, ppl_const_Int8_Box_t pset_after, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_Int8_Box_2](#) (ppl_const_Int8_Box_t pset_before, ppl_const_Int8_Box_t pset_after, ppl_Polyhedron_t ph)

10.37.1 Detailed Description

Types and functions for [ppl_Int8_Box_tag](#).

10.37.2 Friends And Related Function Documentation

10.37.2.1 int [ppl_all_affine_ranking_functions_MS_Int8_Box](#) (ppl_const_Int8_Box_t *pset*, ppl_Polyhedron_t *ph*) [[related](#)]

10.37.2.2 int [ppl_all_affine_ranking_functions_MS_Int8_Box_2](#) (ppl_const_Int8_Box_t *pset_before*, ppl_const_Int8_Box_t *pset_after*, ppl_Polyhedron_t *ph*) [[related](#)]

10.37.2.3 int [ppl_all_affine_ranking_functions_PR_Int8_Box](#) (ppl_const_Int8_Box_t *pset*, ppl_Polyhedron_t *ph*) [[related](#)]

10.37.2.4 int [ppl_all_affine_ranking_functions_PR_Int8_Box_2](#) (ppl_const_Int8_Box_t *pset_before*, ppl_const_Int8_Box_t *pset_after*, ppl_Polyhedron_t *ph*) [[related](#)]

10.37.2.5 int [ppl_assign_Int8_Box_from_Int8_Box](#) (ppl_Int8_Box_t *dst*, ppl_const_Int8_Box_t *src*) [[related](#)]

10.37.2.6 int [ppl_delete_Int8_Box](#) (ppl_const_Int8_Box_t *ph*) [[related](#)]

- 10.37.2.7 `int ppl_Int8_Box_add_congruence (ppl_Int8_Box_t ph, ppl_const_Congruence_t c)`
[related]
- 10.37.2.8 `int ppl_Int8_Box_add_congruences (ppl_Int8_Box_t ph, ppl_const_Congruence_System_t cs)` [related]
- 10.37.2.9 `int ppl_Int8_Box_add_constraint (ppl_Int8_Box_t ph, ppl_const_Constraint_t c)`
[related]
- 10.37.2.10 `int ppl_Int8_Box_add_constraints (ppl_Int8_Box_t ph, ppl_const_Constraint_System_t cs)` [related]
- 10.37.2.11 `int ppl_Int8_Box_add_recycled_congruences (ppl_Int8_Box_t ph, ppl_Congruence_System_t cs)` [related]
- 10.37.2.12 `int ppl_Int8_Box_add_recycled_constraints (ppl_Int8_Box_t ph, ppl_Constraint_System_t cs)` [related]
- 10.37.2.13 `int ppl_Int8_Box_add_space_dimensions_and_embed (ppl_Int8_Box_t ph, ppl_dimension_type d)` [related]
- 10.37.2.14 `int ppl_Int8_Box_add_space_dimensions_and_project (ppl_Int8_Box_t ph, ppl_dimension_type d)` [related]
- 10.37.2.15 `int ppl_Int8_Box_affine_dimension (ppl_const_Int8_Box_t ph, ppl_dimension_type *m)` [related]

- 10.37.2.16 `int ppl_Int8_Box_affine_image (ppl_Int8_Box_t ph, ppl_dimension_type var,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.37.2.17 `int ppl_Int8_Box_affine_preimage (ppl_Int8_Box_t ph, ppl_dimension_type var,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.37.2.18 `int ppl_Int8_Box_bounded_affine_image (ppl_Int8_Box_t ph, ppl_dimension_type
var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub,
ppl_const_Coefficient_t d)` [`related`]
- 10.37.2.19 `int ppl_Int8_Box_bounded_affine_preimage (ppl_Int8_Box_t ph, ppl_dimension_type
var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub,
ppl_const_Coefficient_t d)` [`related`]
- 10.37.2.20 `int ppl_Int8_Box_bounds_from_above (ppl_const_Int8_Box_t ph,
ppl_const_Linear_Expression_t le)` [`related`]
- 10.37.2.21 `int ppl_Int8_Box_bounds_from_below (ppl_const_Int8_Box_t ph,
ppl_const_Linear_Expression_t le)` [`related`]
- 10.37.2.22 `int ppl_Int8_Box_CC76_widening_assign (ppl_Int8_Box_t x, ppl_const_Int8_Box_t y)`
[`related`]
- 10.37.2.23 `int ppl_Int8_Box_CC76_widening_assign_with_tokens (ppl_Int8_Box_t x,
ppl_const_Int8_Box_t y, unsigned * tp)` [`related`]
- 10.37.2.24 `int ppl_Int8_Box_concatenate_assign (ppl_Int8_Box_t x, ppl_const_Int8_Box_t y)`
[`related`]

- 10.37.2.25 `int ppl_Int8_Box_constrains (ppl_Int8_Box_t ph, ppl_dimension_type var)`
[related]
- 10.37.2.26 `int ppl_Int8_Box_contains_Int8_Box (ppl_const_Int8_Box_t x, ppl_const_Int8_Box_t y)` [related]
- 10.37.2.27 `int ppl_Int8_Box_contains_integer_point (ppl_const_Int8_Box_t ph)` [related]
- 10.37.2.28 `int ppl_Int8_Box_difference_assign (ppl_Int8_Box_t x, ppl_const_Int8_Box_t y)`
[related]
- 10.37.2.29 `int ppl_Int8_Box_drop_some_non_integer_points (ppl_Int8_Box_t ph, int complexity)`
[related]
- 10.37.2.30 `int ppl_Int8_Box_drop_some_non_integer_points_2 (ppl_Int8_Box_t ph,
ppl_dimension_type ds[], size_t n, int complexity)` [related]
- 10.37.2.31 `int ppl_Int8_Box_equals_Int8_Box (ppl_const_Int8_Box_t x, ppl_const_Int8_Box_t y)`
[related]
- 10.37.2.32 `int ppl_Int8_Box_expand_space_dimension (ppl_Int8_Box_t ph, ppl_dimension_type
d, ppl_dimension_type m)` [related]
- 10.37.2.33 `int ppl_Int8_Box_external_memory_in_bytes (ppl_const_Int8_Box_t ps, size_t * sz)`
[related]
- 10.37.2.34 `int ppl_Int8_Box_fold_space_dimensions (ppl_Int8_Box_t ph, ppl_dimension_type
ds[], size_t n, ppl_dimension_type d)` [related]

- 10.37.2.35 `int ppl_Int8_Box_frequency (ppl_const_Int8_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)` [**related**]
- 10.37.2.36 `int ppl_Int8_Box_generalized_affine_image (ppl_Int8_Box_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.37.2.37 `int ppl_Int8_Box_generalized_affine_image_lhs_rhs (ppl_Int8_Box_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t rhs)` [**related**]
- 10.37.2.38 `int ppl_Int8_Box_generalized_affine_preimage (ppl_Int8_Box_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.37.2.39 `int ppl_Int8_Box_generalized_affine_preimage_lhs_rhs (ppl_Int8_Box_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t rhs)` [**related**]
- 10.37.2.40 `int ppl_Int8_Box_get_congruences (ppl_const_Int8_Box_t ph, ppl_const_Congruence_System_t * pcs)` [**related**]
- 10.37.2.41 `int ppl_Int8_Box_get_constraints (ppl_const_Int8_Box_t ph, ppl_const_Constraint_System_t * pcs)` [**related**]
- 10.37.2.42 `int ppl_Int8_Box_get_minimized_congruences (ppl_const_Int8_Box_t ph, ppl_const_Congruence_System_t * pcs)` [**related**]

- 10.37.2.43 `int ppl_Int8_Box_get_minimized_constraints (ppl_const_Int8_Box_t ph,
ppl_const_Constraint_System_t *pcs)` [related]
- 10.37.2.44 `int ppl_Int8_Box_intersection_assign (ppl_Int8_Box_t x, ppl_const_Int8_Box_t y)`
[related]
- 10.37.2.45 `int ppl_Int8_Box_is_bounded (ppl_const_Int8_Box_t ph)` [related]
- 10.37.2.46 `int ppl_Int8_Box_is_discrete (ppl_const_Int8_Box_t ph)` [related]
- 10.37.2.47 `int ppl_Int8_Box_is_disjoint_from_Int8_Box (ppl_const_Int8_Box_t x,
ppl_const_Int8_Box_t y)` [related]
- 10.37.2.48 `int ppl_Int8_Box_is_empty (ppl_const_Int8_Box_t ph)` [related]
- 10.37.2.49 `int ppl_Int8_Box_is_topologically_closed (ppl_const_Int8_Box_t ph)` [related]
- 10.37.2.50 `int ppl_Int8_Box_is_universe (ppl_const_Int8_Box_t ph)` [related]
- 10.37.2.51 `int ppl_Int8_Box_limited_CC76_extrapolation_assign (ppl_Int8_Box_t x,
ppl_const_Int8_Box_t y, ppl_const_Constraint_System_t cs)` [related]
- 10.37.2.52 `int ppl_Int8_Box_limited_CC76_extrapolation_assign_with_tokens (ppl_Int8_Box_t
x, ppl_const_Int8_Box_t y, ppl_const_Constraint_System_t cs, unsigned *tp)`
[related]

- 10.37.2.53 `int ppl_Int8_Box_linear_partition (ppl_const_Int8_Box_t x, ppl_const_Int8_Box_t y, ppl_Int8_Box_t * p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t * p_rest)` **[related]**
- 10.37.2.54 `int ppl_Int8_Box_map_space_dimensions (ppl_Int8_Box_t ph, ppl_dimension_type maps[], size_t n)` **[related]**
- 10.37.2.55 `int ppl_Int8_Box_maximize (ppl_const_Int8_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` **[related]**
- 10.37.2.56 `int ppl_Int8_Box_maximize_with_point (ppl_const_Int8_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` **[related]**
- 10.37.2.57 `int ppl_Int8_Box_minimize (ppl_const_Int8_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` **[related]**
- 10.37.2.58 `int ppl_Int8_Box_minimize_with_point (ppl_const_Int8_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` **[related]**
- 10.37.2.59 `int ppl_Int8_Box_OK (ppl_const_Int8_Box_t ph)` **[related]**
- 10.37.2.60 `int ppl_Int8_Box_refine_with_congruence (ppl_Int8_Box_t ph, ppl_const_Congruence_t c)` **[related]**
- 10.37.2.61 `int ppl_Int8_Box_refine_with_congruences (ppl_Int8_Box_t ph, ppl_const_Congruence_System_t cs)` **[related]**

- 10.37.2.62 `int ppl_Int8_Box_refine_with_constraint (ppl_Int8_Box_t ph, ppl_const_Constraint_t c)` [`related`]
- 10.37.2.63 `int ppl_Int8_Box_refine_with_constraints (ppl_Int8_Box_t ph, ppl_const_Constraint_System_t cs)` [`related`]
- 10.37.2.64 `int ppl_Int8_Box_relation_with_Congruence (ppl_const_Int8_Box_t ph, ppl_const_Congruence_t c)` [`related`]
- 10.37.2.65 `int ppl_Int8_Box_relation_with_Constraint (ppl_const_Int8_Box_t ph, ppl_const_Constraint_t c)` [`related`]
- 10.37.2.66 `int ppl_Int8_Box_relation_with_Generator (ppl_const_Int8_Box_t ph, ppl_const_Generator_t c)` [`related`]
- 10.37.2.67 `int ppl_Int8_Box_remove_higher_space_dimensions (ppl_Int8_Box_t ph, ppl_dimension_type d)` [`related`]
- 10.37.2.68 `int ppl_Int8_Box_remove_space_dimensions (ppl_Int8_Box_t ph, ppl_dimension_type ds[], size_t n)` [`related`]
- 10.37.2.69 `int ppl_Int8_Box_simplify_using_context_assign (ppl_Int8_Box_t x, ppl_const_Int8_Box_t y)` [`related`]
- 10.37.2.70 `int ppl_Int8_Box_space_dimension (ppl_const_Int8_Box_t ph, ppl_dimension_type * m)` [`related`]

- 10.37.2.71 `int ppl_Int8_Box_strictly_contains_Int8_Box (ppl_const_Int8_Box_t x, ppl_const_Int8_Box_t y)` [related]
- 10.37.2.72 `int ppl_Int8_Box_time_elapse_assign (ppl_Int8_Box_t x, ppl_const_Int8_Box_t y)` [related]
- 10.37.2.73 `int ppl_Int8_Box_topological_closure_assign (ppl_Int8_Box_t ph)` [related]
- 10.37.2.74 `int ppl_Int8_Box_total_memory_in_bytes (ppl_const_Int8_Box_t ps, size_t * sz)` [related]
- 10.37.2.75 `int ppl_Int8_Box_unconstrain_space_dimension (ppl_Int8_Box_t ph, ppl_dimension_type var)` [related]
- 10.37.2.76 `int ppl_Int8_Box_unconstrain_space_dimensions (ppl_Int8_Box_t ph, ppl_dimension_type ds[], size_t n)` [related]
- 10.37.2.77 `int ppl_Int8_Box_upper_bound_assign (ppl_Int8_Box_t x, ppl_const_Int8_Box_t y)` [related]
- 10.37.2.78 `int ppl_Int8_Box_upper_bound_assign_if_exact (ppl_Int8_Box_t x, ppl_const_Int8_Box_t y)` [related]
- 10.37.2.79 `int ppl_Int8_Box_widening_assign (ppl_Int8_Box_t x, ppl_const_Int8_Box_t y)` [related]
- 10.37.2.80 `int ppl_Int8_Box_widening_assign_with_tokens (ppl_Int8_Box_t x, ppl_const_Int8_Box_t y, unsigned * tp)` [related]

- 10.37.2.81** `int ppl_Int8_Box_wrap_assign (ppl_Int8_Box_t ph, ppl_dimension_type ds[], size_t n, enum ppl_enum_Bounded_Integer_Type_Width w, enum ppl_enum_Bounded_Integer_Type_Representation r, enum ppl_enum_Bounded_Integer_Type_Overflow o, const ppl_const_Constraint_System_t * pcs, unsigned complexity_threshold, int wrap_individually)` [**related**]
- 10.37.2.82** `int ppl_new_Int8_Box_from_BD_Shape_double (ppl_Int8_Box_t * pph, ppl_const_BD_Shape_double_t ph)` [**related**]
- 10.37.2.83** `int ppl_new_Int8_Box_from_BD_Shape_double_with_complexity (ppl_Int8_Box_t * pph, ppl_const_BD_Shape_double_t ph, int complexity)` [**related**]
- 10.37.2.84** `int ppl_new_Int8_Box_from_BD_Shape_float (ppl_Int8_Box_t * pph, ppl_const_BD_Shape_float_t ph)` [**related**]
- 10.37.2.85** `int ppl_new_Int8_Box_from_BD_Shape_float_with_complexity (ppl_Int8_Box_t * pph, ppl_const_BD_Shape_float_t ph, int complexity)` [**related**]
- 10.37.2.86** `int ppl_new_Int8_Box_from_BD_Shape_int16_t (ppl_Int8_Box_t * pph, ppl_const_BD_Shape_int16_t_t ph)` [**related**]
- 10.37.2.87** `int ppl_new_Int8_Box_from_BD_Shape_int16_t_with_complexity (ppl_Int8_Box_t * pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)` [**related**]
- 10.37.2.88** `int ppl_new_Int8_Box_from_BD_Shape_int32_t (ppl_Int8_Box_t * pph, ppl_const_BD_Shape_int32_t_t ph)` [**related**]
- 10.37.2.89** `int ppl_new_Int8_Box_from_BD_Shape_int32_t_with_complexity (ppl_Int8_Box_t * pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)` [**related**]

- 10.37.2.90 `int ppl_new_Int8_Box_from_BD_Shape_int64_t (ppl_Int8_Box_t * pph,
ppl_const_BD_Shape_int64_t_t ph)` [`related`]
- 10.37.2.91 `int ppl_new_Int8_Box_from_BD_Shape_int64_t_with_complexity (ppl_Int8_Box_t *
pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)` [`related`]
- 10.37.2.92 `int ppl_new_Int8_Box_from_BD_Shape_int8_t (ppl_Int8_Box_t * pph,
ppl_const_BD_Shape_int8_t_t ph)` [`related`]
- 10.37.2.93 `int ppl_new_Int8_Box_from_BD_Shape_int8_t_with_complexity (ppl_Int8_Box_t *
pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)` [`related`]
- 10.37.2.94 `int ppl_new_Int8_Box_from_BD_Shape_long_double (ppl_Int8_Box_t * pph,
ppl_const_BD_Shape_long_double_t ph)` [`related`]
- 10.37.2.95 `int ppl_new_Int8_Box_from_BD_Shape_long_double_with_complexity
(ppl_Int8_Box_t * pph, ppl_const_BD_Shape_long_double_t ph, int complexity)`
[`related`]
- 10.37.2.96 `int ppl_new_Int8_Box_from_BD_Shape_mpq_class (ppl_Int8_Box_t * pph,
ppl_const_BD_Shape_mpq_class_t ph)` [`related`]
- 10.37.2.97 `int ppl_new_Int8_Box_from_BD_Shape_mpq_class_with_complexity (ppl_Int8_Box_t
* pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)` [`related`]
- 10.37.2.98 `int ppl_new_Int8_Box_from_BD_Shape_mpz_class (ppl_Int8_Box_t * pph,
ppl_const_BD_Shape_mpz_class_t ph)` [`related`]

- 10.37.2.99 `int ppl_new_Int8_Box_from_BD_Shape_mpz_class_with_complexity (ppl_Int8_Box_t * pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)` [related]
- 10.37.2.100 `int ppl_new_Int8_Box_from_C_Polyhedron (ppl_Int8_Box_t * pph, ppl_const_Polyhedron_t ph)` [related]
- 10.37.2.101 `int ppl_new_Int8_Box_from_C_Polyhedron_with_complexity (ppl_Int8_Box_t * pph, ppl_const_Polyhedron_t ph, int complexity)` [related]
- 10.37.2.102 `int ppl_new_Int8_Box_from_Congruence_System (ppl_Int8_Box_t * pph, ppl_const_Congruence_System_t cs)` [related]
- 10.37.2.103 `int ppl_new_Int8_Box_from_Constraint_System (ppl_Int8_Box_t * pph, ppl_const_Constraint_System_t cs)` [related]
- 10.37.2.104 `int ppl_new_Int8_Box_from_Double_Box (ppl_Int8_Box_t * pph, ppl_const_Double_Box_t ph)` [related]
- 10.37.2.105 `int ppl_new_Int8_Box_from_Double_Box_with_complexity (ppl_Int8_Box_t * pph, ppl_const_Double_Box_t ph, int complexity)` [related]
- 10.37.2.106 `int ppl_new_Int8_Box_from_Float_Box (ppl_Int8_Box_t * pph, ppl_const_Float_Box_t ph)` [related]
- 10.37.2.107 `int ppl_new_Int8_Box_from_Float_Box_with_complexity (ppl_Int8_Box_t * pph, ppl_const_Float_Box_t ph, int complexity)` [related]

- 10.37.2.108 `int ppl_new_Int8_Box_from_Generator_System (ppl_Int8_Box_t * pph,
ppl_const_Generator_System_t cs)` [`related`]
- 10.37.2.109 `int ppl_new_Int8_Box_from_Grid (ppl_Int8_Box_t * pph, ppl_const_Grid_t ph)`
[`related`]
- 10.37.2.110 `int ppl_new_Int8_Box_from_Grid_with_complexity (ppl_Int8_Box_t * pph,
ppl_const_Grid_t ph, int complexity)` [`related`]
- 10.37.2.111 `int ppl_new_Int8_Box_from_Int16_Box (ppl_Int8_Box_t * pph,
ppl_const_Int16_Box_t ph)` [`related`]
- 10.37.2.112 `int ppl_new_Int8_Box_from_Int16_Box_with_complexity (ppl_Int8_Box_t * pph,
ppl_const_Int16_Box_t ph, int complexity)` [`related`]
- 10.37.2.113 `int ppl_new_Int8_Box_from_Int32_Box (ppl_Int8_Box_t * pph,
ppl_const_Int32_Box_t ph)` [`related`]
- 10.37.2.114 `int ppl_new_Int8_Box_from_Int32_Box_with_complexity (ppl_Int8_Box_t * pph,
ppl_const_Int32_Box_t ph, int complexity)` [`related`]
- 10.37.2.115 `int ppl_new_Int8_Box_from_Int64_Box (ppl_Int8_Box_t * pph,
ppl_const_Int64_Box_t ph)` [`related`]
- 10.37.2.116 `int ppl_new_Int8_Box_from_Int64_Box_with_complexity (ppl_Int8_Box_t * pph,
ppl_const_Int64_Box_t ph, int complexity)` [`related`]

- 10.37.2.117 `int ppl_new_Int8_Box_from_Int8_Box (ppl_Int8_Box_t * pph, ppl_const_Int8_Box_t ph)` [`related`]
- 10.37.2.118 `int ppl_new_Int8_Box_from_Int8_Box_with_complexity (ppl_Int8_Box_t * pph, ppl_const_Int8_Box_t ph, int complexity)` [`related`]
- 10.37.2.119 `int ppl_new_Int8_Box_from_Long_Double_Box (ppl_Int8_Box_t * pph, ppl_const_Long_Double_Box_t ph)` [`related`]
- 10.37.2.120 `int ppl_new_Int8_Box_from_Long_Double_Box_with_complexity (ppl_Int8_Box_t * pph, ppl_const_Long_Double_Box_t ph, int complexity)` [`related`]
- 10.37.2.121 `int ppl_new_Int8_Box_from_NNC_Polyhedron (ppl_Int8_Box_t * pph, ppl_const_Polyhedron_t ph)` [`related`]
- 10.37.2.122 `int ppl_new_Int8_Box_from_NNC_Polyhedron_with_complexity (ppl_Int8_Box_t * pph, ppl_const_Polyhedron_t ph, int complexity)` [`related`]
- 10.37.2.123 `int ppl_new_Int8_Box_from_Octagonal_Shape_double (ppl_Int8_Box_t * pph, ppl_const_Octagonal_Shape_double_t ph)` [`related`]
- 10.37.2.124 `int ppl_new_Int8_Box_from_Octagonal_Shape_double_with_complexity (ppl_Int8_Box_t * pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)` [`related`]
- 10.37.2.125 `int ppl_new_Int8_Box_from_Octagonal_Shape_float (ppl_Int8_Box_t * pph, ppl_const_Octagonal_Shape_float_t ph)` [`related`]

- 10.37.2.126 `int ppl_new_Int8_Box_from_Octagonal_Shape_float_with_complexity`
 (`ppl_Int8_Box_t * pph`, `ppl_const_Octagonal_Shape_float_t ph`, `int complexity`)
 [`related`]
- 10.37.2.127 `int ppl_new_Int8_Box_from_Octagonal_Shape_int16_t` (`ppl_Int8_Box_t * pph`,
`ppl_const_Octagonal_Shape_int16_t_t ph`) [`related`]
- 10.37.2.128 `int ppl_new_Int8_Box_from_Octagonal_Shape_int16_t_with_complexity`
 (`ppl_Int8_Box_t * pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`, `int complexity`)
 [`related`]
- 10.37.2.129 `int ppl_new_Int8_Box_from_Octagonal_Shape_int32_t` (`ppl_Int8_Box_t * pph`,
`ppl_const_Octagonal_Shape_int32_t_t ph`) [`related`]
- 10.37.2.130 `int ppl_new_Int8_Box_from_Octagonal_Shape_int32_t_with_complexity`
 (`ppl_Int8_Box_t * pph`, `ppl_const_Octagonal_Shape_int32_t_t ph`, `int complexity`)
 [`related`]
- 10.37.2.131 `int ppl_new_Int8_Box_from_Octagonal_Shape_int64_t` (`ppl_Int8_Box_t * pph`,
`ppl_const_Octagonal_Shape_int64_t_t ph`) [`related`]
- 10.37.2.132 `int ppl_new_Int8_Box_from_Octagonal_Shape_int64_t_with_complexity`
 (`ppl_Int8_Box_t * pph`, `ppl_const_Octagonal_Shape_int64_t_t ph`, `int complexity`)
 [`related`]
- 10.37.2.133 `int ppl_new_Int8_Box_from_Octagonal_Shape_int8_t` (`ppl_Int8_Box_t * pph`,
`ppl_const_Octagonal_Shape_int8_t_t ph`) [`related`]

- 10.37.2.134 `int ppl_new_Int8_Box_from_Octagonal_Shape_int8_t_with_complexity`
(`ppl_Int8_Box_t * pph`, `ppl_const_Octagonal_Shape_int8_t_t ph`, `int complexity`)
[related]
- 10.37.2.135 `int ppl_new_Int8_Box_from_Octagonal_Shape_long_double` (`ppl_Int8_Box_t * pph`,
`ppl_const_Octagonal_Shape_long_double_t ph`) [related]
- 10.37.2.136 `int ppl_new_Int8_Box_from_Octagonal_Shape_long_double_with_complexity`
(`ppl_Int8_Box_t * pph`, `ppl_const_Octagonal_Shape_long_double_t ph`, `int`
`complexity`) [related]
- 10.37.2.137 `int ppl_new_Int8_Box_from_Octagonal_Shape_mpq_class` (`ppl_Int8_Box_t * pph`,
`ppl_const_Octagonal_Shape_mpq_class_t ph`) [related]
- 10.37.2.138 `int ppl_new_Int8_Box_from_Octagonal_Shape_mpq_class_with_complexity`
(`ppl_Int8_Box_t * pph`, `ppl_const_Octagonal_Shape_mpq_class_t ph`, `int complexity`)
[related]
- 10.37.2.139 `int ppl_new_Int8_Box_from_Octagonal_Shape_mpz_class` (`ppl_Int8_Box_t * pph`,
`ppl_const_Octagonal_Shape_mpz_class_t ph`) [related]
- 10.37.2.140 `int ppl_new_Int8_Box_from_Octagonal_Shape_mpz_class_with_complexity`
(`ppl_Int8_Box_t * pph`, `ppl_const_Octagonal_Shape_mpz_class_t ph`, `int complexity`)
[related]
- 10.37.2.141 `int ppl_new_Int8_Box_from_Rational_Box` (`ppl_Int8_Box_t * pph`,
`ppl_const_Rational_Box_t ph`) [related]
- 10.37.2.142 `int ppl_new_Int8_Box_from_Rational_Box_with_complexity` (`ppl_Int8_Box_t * pph`,
`ppl_const_Rational_Box_t ph`, `int complexity`) [related]

- 10.37.2.143 `int ppl_new_Int8_Box_from_space_dimension (ppl_Int8_Box_t * pph,
ppl_dimension_type d, int empty)` [`related`]
- 10.37.2.144 `int ppl_new_Int8_Box_from_Uint16_Box (ppl_Int8_Box_t * pph,
ppl_const_Uint16_Box_t ph)` [`related`]
- 10.37.2.145 `int ppl_new_Int8_Box_from_Uint16_Box_with_complexity (ppl_Int8_Box_t * pph,
ppl_const_Uint16_Box_t ph, int complexity)` [`related`]
- 10.37.2.146 `int ppl_new_Int8_Box_from_Uint32_Box (ppl_Int8_Box_t * pph,
ppl_const_Uint32_Box_t ph)` [`related`]
- 10.37.2.147 `int ppl_new_Int8_Box_from_Uint32_Box_with_complexity (ppl_Int8_Box_t * pph,
ppl_const_Uint32_Box_t ph, int complexity)` [`related`]
- 10.37.2.148 `int ppl_new_Int8_Box_from_Uint64_Box (ppl_Int8_Box_t * pph,
ppl_const_Uint64_Box_t ph)` [`related`]
- 10.37.2.149 `int ppl_new_Int8_Box_from_Uint64_Box_with_complexity (ppl_Int8_Box_t * pph,
ppl_const_Uint64_Box_t ph, int complexity)` [`related`]
- 10.37.2.150 `int ppl_new_Int8_Box_from_Uint8_Box (ppl_Int8_Box_t * pph,
ppl_const_Uint8_Box_t ph)` [`related`]
- 10.37.2.151 `int ppl_new_Int8_Box_from_Uint8_Box_with_complexity (ppl_Int8_Box_t * pph,
ppl_const_Uint8_Box_t ph, int complexity)` [`related`]

- 10.37.2.152 `int ppl_new_Int8_Box_from_Z_Box (ppl_Int8_Box_t * pph, ppl_const_Z_Box_t ph)` `[related]`
- 10.37.2.153 `int ppl_new_Int8_Box_from_Z_Box_with_complexity (ppl_Int8_Box_t * pph, ppl_const_Z_Box_t ph, int complexity)` `[related]`
- 10.37.2.154 `int ppl_new_Int8_Box_recycle_Congruence_System (ppl_Int8_Box_t * pph, ppl_Congruence_System_t cs)` `[related]`
- 10.37.2.155 `int ppl_new_Int8_Box_recycle_Constraint_System (ppl_Int8_Box_t * pph, ppl_Constraint_System_t cs)` `[related]`
- 10.37.2.156 `int ppl_new_Int8_Box_recycle_Generator_System (ppl_Int8_Box_t * pph, ppl_Generator_System_t cs)` `[related]`
- 10.37.2.157 `int ppl_one_affine_ranking_function_MS_Int8_Box (ppl_const_Int8_Box_t pset, ppl_Generator_t point)` `[related]`
- 10.37.2.158 `int ppl_one_affine_ranking_function_MS_Int8_Box_2 (ppl_const_Int8_Box_t pset_before, ppl_const_Int8_Box_t pset_after, ppl_Generator_t point)` `[related]`
- 10.37.2.159 `int ppl_one_affine_ranking_function_PR_Int8_Box (ppl_const_Int8_Box_t pset, ppl_Generator_t point)` `[related]`
- 10.37.2.160 `int ppl_one_affine_ranking_function_PR_Int8_Box_2 (ppl_const_Int8_Box_t pset_before, ppl_const_Int8_Box_t pset_after, ppl_Generator_t point)` `[related]`
- 10.37.2.161 `int ppl_termination_test_MS_Int8_Box (ppl_const_Int8_Box_t pset)` `[related]`

10.37.2.162 `int ppl_termination_test_MS_Int8_Box_2 (ppl_const_Int8_Box_t pset_before, ppl_const_Int8_Box_t pset_after)` **[related]**

10.37.2.163 `int ppl_termination_test_PR_Int8_Box (ppl_const_Int8_Box_t pset)` **[related]**

10.37.2.164 `int ppl_termination_test_PR_Int8_Box_2 (ppl_const_Int8_Box_t pset_before, ppl_const_Int8_Box_t pset_after)` **[related]**

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.38 ppl_Linear_Expression_tag Interface Reference

Types and functions for linear expressions.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

Constructors, Assignment and Destructor

- `int ppl_new_Linear_Expression (ppl_Linear_Expression_t *ple)`
Creates a new linear expression corresponding to the constant 0 in a zero-dimensional space; writes a handle for the new linear expression at address ple.
- `int ppl_new_Linear_Expression_with_dimension (ppl_Linear_Expression_t *ple, ppl_dimension_type d)`
Creates a new linear expression corresponding to the constant 0 in a d-dimensional space; writes a handle for the new linear expression at address ple.
- `int ppl_new_Linear_Expression_from_Linear_Expression (ppl_Linear_Expression_t *ple, ppl_const_Linear_Expression_t le)`
Builds a linear expression that is a copy of le; writes a handle for the newly created linear expression at address ple.
- `int ppl_new_Linear_Expression_from_Constraint (ppl_Linear_Expression_t *ple, ppl_const_Constraint_t c)`
Builds a linear expression corresponding to constraint c; writes a handle for the newly created linear expression at address ple.
- `int ppl_new_Linear_Expression_from_Generator (ppl_Linear_Expression_t *ple, ppl_const_Generator_t g)`
Builds a linear expression corresponding to generator g; writes a handle for the newly created linear expression at address ple.

- int [ppl_new_Linear_Expression_from_Congruence](#) (ppl_Linear_Expression_t *ple, ppl_const_Congruence_t c)
Builds a linear expression corresponding to congruence c ; writes a handle for the newly created linear expression at address ple .
- int [ppl_new_Linear_Expression_from_Grid_Generator](#) (ppl_Linear_Expression_t *ple, ppl_const_Grid_Generator_t g)
Builds a linear expression corresponding to grid generator g ; writes a handle for the newly created linear expression at address ple .
- int [ppl_assign_Linear_Expression_from_Linear_Expression](#) (ppl_Linear_Expression_t dst, ppl_const_Linear_Expression_t src)
Assigns a copy of the linear expression src to dst .
- int [ppl_delete_Linear_Expression](#) (ppl_const_Linear_Expression_t le)
Invalidates the handle le : this makes sure the corresponding resources will eventually be released.

Functions that Do Not Modify the Linear Expression

- int [ppl_Linear_Expression_space_dimension](#) (ppl_const_Linear_Expression_t le, [ppl_dimension_type](#) *m)
Writes to m the space dimension of le .
- int [ppl_Linear_Expression_coefficient](#) (ppl_const_Linear_Expression_t le, [ppl_dimension_type](#) var, ppl_Coefficient_t n)
Copies into n the coefficient of variable var in the linear expression le .
- int [ppl_Linear_Expression_inhomogeneous_term](#) (ppl_const_Linear_Expression_t le, [ppl_Coefficient_t](#) n)
Copies into n the inhomogeneous term of linear expression le .
- int [ppl_Linear_Expression_OK](#) (ppl_const_Linear_Expression_t le)
Returns a positive integer if le is well formed, i.e., if it satisfies all its implementation invariants; returns 0 and perhaps makes some noise if le is broken. Useful for debugging purposes.
- int [ppl_Linear_Expression_is_zero](#) (ppl_const_Linear_Expression_t le)
Returns `true` if and only if $*this$ is 0.
- int [ppl_Linear_Expression_all_homogeneous_terms_are_zero](#) (ppl_const_Linear_Expression_t le)
Returns `true` if and only if all the homogeneous terms of $*this$ are 0.

Functions that May Modify the Linear Expression

- int [ppl_Linear_Expression_add_to_coefficient](#) (ppl_Linear_Expression_t le, [ppl_dimension_type](#) var, ppl_const_Coefficient_t n)
Adds n to the coefficient of variable var in the linear expression le . The space dimension is set to be the maximum between $var + 1$ and the old space dimension.
- int [ppl_Linear_Expression_add_to_inhomogeneous](#) (ppl_Linear_Expression_t le, ppl_const_Coefficient_t n)
Adds n to the inhomogeneous term of the linear expression le .

- `int ppl_add_Linear_Expression_to_Linear_Expression` (`ppl_Linear_Expression_t dst`, `ppl_const_Linear_Expression_t src`)
Adds the linear expression `src` to `dst`.
- `int ppl_subtract_Linear_Expression_from_Linear_Expression` (`ppl_Linear_Expression_t dst`, `ppl_const_Linear_Expression_t src`)
Subtracts the linear expression `src` from `dst`.
- `int ppl_multiply_Linear_Expression_by_Coefficient` (`ppl_Linear_Expression_t le`, `ppl_const_Coefficient_t n`)
Multiply the linear expression `dst` by `n`.

10.38.1 Detailed Description

Types and functions for linear expressions. The types and functions for linear expression provide an interface towards *Linear_Expression*.

10.38.2 Friends And Related Function Documentation

10.38.2.1 `int ppl_add_Linear_Expression_to_Linear_Expression` (`ppl_Linear_Expression_t dst`, `ppl_const_Linear_Expression_t src`) [**related**]

Adds the linear expression `src` to `dst`.

Definition at line 557 of file `ppl_c_implementation_common.cc`.

10.38.2.2 `int ppl_assign_Linear_Expression_from_Linear_Expression` (`ppl_Linear_Expression_t dst`, `ppl_const_Linear_Expression_t src`) [**related**]

Assigns a copy of the linear expression `src` to `dst`.

Definition at line 526 of file `ppl_c_implementation_common.cc`.

10.38.2.3 `int ppl_delete_Linear_Expression` (`ppl_const_Linear_Expression_t le`) [**related**]

Invalidates the handle `le`: this makes sure the corresponding resources will eventually be released.

Definition at line 518 of file `ppl_c_implementation_common.cc`.

10.38.2.4 `int ppl_Linear_Expression_add_to_coefficient` (`ppl_Linear_Expression_t le`, `ppl_dimension_type var`, `ppl_const_Coefficient_t n`) [**related**]

Adds `n` to the coefficient of variable `var` in the linear expression `le`. The space dimension is set to be the maximum between `var + 1` and the old space dimension.

Definition at line 535 of file ppl_c_implementation_common.cc.

10.38.2.5 `int ppl_Linear_Expression_add_to_inhomogeneous (ppl_Linear_Expression_t le,
ppl_const_Coefficient_t n)` [**related**]

Adds *n* to the inhomogeneous term of the linear expression *le*.

Definition at line 546 of file ppl_c_implementation_common.cc.

10.38.2.6 `int ppl_Linear_Expression_all_homogeneous_terms_are_zero
(ppl_const_Linear_Expression_t le)` [**related**]

Returns `true` if and only if all the homogeneous terms of **this* are 0.

Definition at line 628 of file ppl_c_implementation_common.cc.

10.38.2.7 `int ppl_Linear_Expression_coefficient (ppl_const_Linear_Expression_t le,
ppl_dimension_type var, ppl_Coefficient_t n)` [**related**]

Copies into *n* the coefficient of variable *var* in the linear expression *le*.

Definition at line 594 of file ppl_c_implementation_common.cc.

10.38.2.8 `int ppl_Linear_Expression_inhomogeneous_term (ppl_const_Linear_Expression_t le,
ppl_Coefficient_t n)` [**related**]

Copies into *n* the inhomogeneous term of linear expression *le*.

Definition at line 605 of file ppl_c_implementation_common.cc.

10.38.2.9 `int ppl_Linear_Expression_is_zero (ppl_const_Linear_Expression_t le)` [**related**]

Returns `true` if and only if **this* is 0.

Definition at line 621 of file ppl_c_implementation_common.cc.

10.38.2.10 `int ppl_Linear_Expression_OK (ppl_const_Linear_Expression_t le)` [**related**]

Returns a positive integer if *le* is well formed, i.e., if it satisfies all its implementation invariants; returns 0 and perhaps makes some noise if *le* is broken. Useful for debugging purposes.

Definition at line 615 of file ppl_c_implementation_common.cc.

10.38.2.11 `int ppl_Linear_Expression_space_dimension (ppl_const_Linear_Expression_t le,
ppl_dimension_type * m)` [**related**]

Writes to *m* the space dimension of *le*.

Definition at line 586 of file `ppl_c_implementation_common.cc`.

10.38.2.12 `int ppl_multiply_Linear_Expression_by_Coefficient (ppl_Linear_Expression_t le,
ppl_const_Coefficient_t n)` [**related**]

Multiply the linear expression *dst* by *n*.

Definition at line 576 of file `ppl_c_implementation_common.cc`.

10.38.2.13 `int ppl_new_Linear_Expression (ppl_Linear_Expression_t * ple)` [**related**]

Creates a new linear expression corresponding to the constant 0 in a zero-dimensional space; writes a handle for the new linear expression at address *ple*.

Definition at line 492 of file `ppl_c_implementation_common.cc`.

10.38.2.14 `int ppl_new_Linear_Expression_from_Congruence (ppl_Linear_Expression_t * ple,
ppl_const_Congruence_t c)` [**related**]

Builds a linear expression corresponding to congruence *c*; writes a handle for the newly created linear expression at address *ple*.

Definition at line 1366 of file `ppl_c_implementation_common.cc`.

10.38.2.15 `int ppl_new_Linear_Expression_from_Constraint (ppl_Linear_Expression_t * ple,
ppl_const_Constraint_t c)` [**related**]

Builds a linear expression corresponding to constraint *c*; writes a handle for the newly created linear expression at address *ple*.

Definition at line 757 of file `ppl_c_implementation_common.cc`.

10.38.2.16 `int ppl_new_Linear_Expression_from_Generator (ppl_Linear_Expression_t * ple,
ppl_const_Generator_t g)` [**related**]

Builds a linear expression corresponding to generator *g*; writes a handle for the newly created linear expression at address *ple*.

Definition at line 1079 of file `ppl_c_implementation_common.cc`.

10.38.2.17 `int ppl_new_Linear_Expression_from_Grid_Generator (ppl_Linear_Expression_t * ple, ppl_const_Grid_Generator_t g)` [**related**]

Builds a linear expression corresponding to grid generator *g*; writes a handle for the newly created linear expression at address *ple*.

10.38.2.18 `int ppl_new_Linear_Expression_from_Linear_Expression (ppl_Linear_Expression_t * ple, ppl_const_Linear_Expression_t le)` [**related**]

Builds a linear expression that is a copy of *le*; writes a handle for the newly created linear expression at address *ple*.

Definition at line 510 of file `ppl_c_implementation_common.cc`.

10.38.2.19 `int ppl_new_Linear_Expression_with_dimension (ppl_Linear_Expression_t * ple, ppl_dimension_type d)` [**related**]

Creates a new linear expression corresponding to the constant 0 in a *d*-dimensional space; writes a handle for the new linear expression at address *ple*.

Definition at line 499 of file `ppl_c_implementation_common.cc`.

10.38.2.20 `int ppl_subtract_Linear_Expression_from_Linear_Expression (ppl_Linear_Expression_t dst, ppl_const_Linear_Expression_t src)` [**related**]

Subtracts the linear expression *src* from *dst*.

Definition at line 567 of file `ppl_c_implementation_common.cc`.

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.39 ppl_Long_Double_Box_tag Interface Reference

Types and functions for [ppl_Long_Double_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl\_delete\_Long\_Double\_Box (ppl_const_Long_Double_Box_t ph)`
- `int ppl\_new\_Long\_Double\_Box\_from\_space\_dimension (ppl_Long_Double_Box_t *pph, ppl\_dimension\_type d, int empty)`

- int [ppl_new_Long_Double_Box_from_Int8_Box](#) (ppl_Long_Double_Box_t *pph, ppl_const_Int8_Box_t ph)
- int [ppl_new_Long_Double_Box_from_Int16_Box](#) (ppl_Long_Double_Box_t *pph, ppl_const_Int16_Box_t ph)
- int [ppl_new_Long_Double_Box_from_Int32_Box](#) (ppl_Long_Double_Box_t *pph, ppl_const_Int32_Box_t ph)
- int [ppl_new_Long_Double_Box_from_Int64_Box](#) (ppl_Long_Double_Box_t *pph, ppl_const_Int64_Box_t ph)
- int [ppl_new_Long_Double_Box_from_UInt8_Box](#) (ppl_Long_Double_Box_t *pph, ppl_const_UInt8_Box_t ph)
- int [ppl_new_Long_Double_Box_from_UInt16_Box](#) (ppl_Long_Double_Box_t *pph, ppl_const_UInt16_Box_t ph)
- int [ppl_new_Long_Double_Box_from_UInt32_Box](#) (ppl_Long_Double_Box_t *pph, ppl_const_UInt32_Box_t ph)
- int [ppl_new_Long_Double_Box_from_UInt64_Box](#) (ppl_Long_Double_Box_t *pph, ppl_const_UInt64_Box_t ph)
- int [ppl_new_Long_Double_Box_from_Z_Box](#) (ppl_Long_Double_Box_t *pph, ppl_const_Z_Box_t ph)
- int [ppl_new_Long_Double_Box_from_Rational_Box](#) (ppl_Long_Double_Box_t *pph, ppl_const_Rational_Box_t ph)
- int [ppl_new_Long_Double_Box_from_BD_Shape_int8_t](#) (ppl_Long_Double_Box_t *pph, ppl_const_BD_Shape_int8_t_t ph)
- int [ppl_new_Long_Double_Box_from_BD_Shape_int16_t](#) (ppl_Long_Double_Box_t *pph, ppl_const_BD_Shape_int16_t_t ph)
- int [ppl_new_Long_Double_Box_from_BD_Shape_int32_t](#) (ppl_Long_Double_Box_t *pph, ppl_const_BD_Shape_int32_t_t ph)
- int [ppl_new_Long_Double_Box_from_BD_Shape_int64_t](#) (ppl_Long_Double_Box_t *pph, ppl_const_BD_Shape_int64_t_t ph)
- int [ppl_new_Long_Double_Box_from_BD_Shape_mpz_class](#) (ppl_Long_Double_Box_t *pph, ppl_const_BD_Shape_mpz_class_t ph)
- int [ppl_new_Long_Double_Box_from_BD_Shape_mpq_class](#) (ppl_Long_Double_Box_t *pph, ppl_const_BD_Shape_mpq_class_t ph)
- int [ppl_new_Long_Double_Box_from_Octagonal_Shape_int8_t](#) (ppl_Long_Double_Box_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph)
- int [ppl_new_Long_Double_Box_from_Octagonal_Shape_int16_t](#) (ppl_Long_Double_Box_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph)
- int [ppl_new_Long_Double_Box_from_Octagonal_Shape_int32_t](#) (ppl_Long_Double_Box_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph)
- int [ppl_new_Long_Double_Box_from_Octagonal_Shape_int64_t](#) (ppl_Long_Double_Box_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph)
- int [ppl_new_Long_Double_Box_from_Octagonal_Shape_mpz_class](#) (ppl_Long_Double_Box_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph)
- int [ppl_new_Long_Double_Box_from_Octagonal_Shape_mpq_class](#) (ppl_Long_Double_Box_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph)
- int [ppl_new_Long_Double_Box_from_C_Polyhedron](#) (ppl_Long_Double_Box_t *pph, ppl_const_Polyhedron_t ph)
- int [ppl_new_Long_Double_Box_from_NNC_Polyhedron](#) (ppl_Long_Double_Box_t *pph, ppl_const_Polyhedron_t ph)
- int [ppl_new_Long_Double_Box_from_Grid](#) (ppl_Long_Double_Box_t *pph, ppl_const_Grid_t ph)
- int [ppl_new_Long_Double_Box_from_Float_Box](#) (ppl_Long_Double_Box_t *pph, ppl_const_Float_Box_t ph)

- int [ppl_new_Long_Double_Box_from_BD_Shape_float](#) (ppl_Long_Double_Box_t *pph, ppl_const_BD_Shape_float_t ph)
- int [ppl_new_Long_Double_Box_from_Octagonal_Shape_float](#) (ppl_Long_Double_Box_t *pph, ppl_const_Octagonal_Shape_float_t ph)
- int [ppl_new_Long_Double_Box_from_Double_Box](#) (ppl_Long_Double_Box_t *pph, ppl_const_Double_Box_t ph)
- int [ppl_new_Long_Double_Box_from_BD_Shape_double](#) (ppl_Long_Double_Box_t *pph, ppl_const_BD_Shape_double_t ph)
- int [ppl_new_Long_Double_Box_from_Octagonal_Shape_double](#) (ppl_Long_Double_Box_t *pph, ppl_const_Octagonal_Shape_double_t ph)
- int [ppl_new_Long_Double_Box_from_Long_Double_Box](#) (ppl_Long_Double_Box_t *pph, ppl_const_Long_Double_Box_t ph)
- int [ppl_new_Long_Double_Box_from_BD_Shape_long_double](#) (ppl_Long_Double_Box_t *pph, ppl_const_BD_Shape_long_double_t ph)
- int [ppl_new_Long_Double_Box_from_Octagonal_Shape_long_double](#) (ppl_Long_Double_Box_t *pph, ppl_const_Octagonal_Shape_long_double_t ph)
- int [ppl_new_Long_Double_Box_from_Int8_Box_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_Int8_Box_t ph, int complexity)
- int [ppl_new_Long_Double_Box_from_Int16_Box_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_Int16_Box_t ph, int complexity)
- int [ppl_new_Long_Double_Box_from_Int32_Box_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_Int32_Box_t ph, int complexity)
- int [ppl_new_Long_Double_Box_from_Int64_Box_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_Int64_Box_t ph, int complexity)
- int [ppl_new_Long_Double_Box_from_UInt8_Box_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_UInt8_Box_t ph, int complexity)
- int [ppl_new_Long_Double_Box_from_UInt16_Box_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_UInt16_Box_t ph, int complexity)
- int [ppl_new_Long_Double_Box_from_UInt32_Box_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_UInt32_Box_t ph, int complexity)
- int [ppl_new_Long_Double_Box_from_UInt64_Box_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_UInt64_Box_t ph, int complexity)
- int [ppl_new_Long_Double_Box_from_Z_Box_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_Z_Box_t ph, int complexity)
- int [ppl_new_Long_Double_Box_from_Rational_Box_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_Rational_Box_t ph, int complexity)
- int [ppl_new_Long_Double_Box_from_BD_Shape_int8_t_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)
- int [ppl_new_Long_Double_Box_from_BD_Shape_int16_t_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)
- int [ppl_new_Long_Double_Box_from_BD_Shape_int32_t_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)
- int [ppl_new_Long_Double_Box_from_BD_Shape_int64_t_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)
- int [ppl_new_Long_Double_Box_from_BD_Shape_mpz_class_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_Long_Double_Box_from_BD_Shape_mpq_class_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_Long_Double_Box_from_Octagonal_Shape_int8_t_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)
- int [ppl_new_Long_Double_Box_from_Octagonal_Shape_int16_t_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)

- [int ppl_new_Long_Double_Box_from_Octagonal_Shape_int32_t_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)
- [int ppl_new_Long_Double_Box_from_Octagonal_Shape_int64_t_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)
- [int ppl_new_Long_Double_Box_from_Octagonal_Shape_mpz_class_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)
- [int ppl_new_Long_Double_Box_from_Octagonal_Shape_mpq_class_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)
- [int ppl_new_Long_Double_Box_from_C_Polyhedron_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- [int ppl_new_Long_Double_Box_from_NNC_Polyhedron_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- [int ppl_new_Long_Double_Box_from_Grid_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_Grid_t ph, int complexity)
- [int ppl_new_Long_Double_Box_from_Float_Box_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_Float_Box_t ph, int complexity)
- [int ppl_new_Long_Double_Box_from_BD_Shape_float_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_BD_Shape_float_t ph, int complexity)
- [int ppl_new_Long_Double_Box_from_Octagonal_Shape_float_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)
- [int ppl_new_Long_Double_Box_from_Double_Box_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_Double_Box_t ph, int complexity)
- [int ppl_new_Long_Double_Box_from_BD_Shape_double_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_BD_Shape_double_t ph, int complexity)
- [int ppl_new_Long_Double_Box_from_Octagonal_Shape_double_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)
- [int ppl_new_Long_Double_Box_from_Long_Double_Box_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- [int ppl_new_Long_Double_Box_from_BD_Shape_long_double_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity)
- [int ppl_new_Long_Double_Box_from_Octagonal_Shape_long_double_with_complexity](#) (ppl_Long_Double_Box_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)
- [int ppl_new_Long_Double_Box_from_Constraint_System](#) (ppl_Long_Double_Box_t *pph, ppl_const_Constraint_System_t cs)
- [int ppl_new_Long_Double_Box_from_Congruence_System](#) (ppl_Long_Double_Box_t *pph, ppl_const_Congruence_System_t cs)
- [int ppl_new_Long_Double_Box_from_Generator_System](#) (ppl_Long_Double_Box_t *pph, ppl_const_Generator_System_t cs)
- [int ppl_Long_Double_Box_space_dimension](#) (ppl_const_Long_Double_Box_t ph, ppl_dimension_type *m)
- [int ppl_Long_Double_Box_affine_dimension](#) (ppl_const_Long_Double_Box_t ph, ppl_dimension_type *m)
- [int ppl_Long_Double_Box_relation_with_Constraint](#) (ppl_const_Long_Double_Box_t ph, ppl_const_Constraint_t c)
- [int ppl_Long_Double_Box_relation_with_Generator](#) (ppl_const_Long_Double_Box_t ph, ppl_const_Generator_t c)
- [int ppl_Long_Double_Box_relation_with_Congruence](#) (ppl_const_Long_Double_Box_t ph, ppl_const_Congruence_t c)
- [int ppl_Long_Double_Box_get_constraints](#) (ppl_const_Long_Double_Box_t ph, ppl_const_Constraint_System_t *pcs)
- [int ppl_Long_Double_Box_get_congruences](#) (ppl_const_Long_Double_Box_t ph, ppl_const_Congruence_System_t *pcs)

- int [ppl_Long_Double_Box_get_minimized_constraints](#) (ppl_const_Long_Double_Box_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_Long_Double_Box_get_minimized_congruences](#) (ppl_const_Long_Double_Box_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_Long_Double_Box_is_empty](#) (ppl_const_Long_Double_Box_t ph)
- int [ppl_Long_Double_Box_is_universe](#) (ppl_const_Long_Double_Box_t ph)
- int [ppl_Long_Double_Box_is_bounded](#) (ppl_const_Long_Double_Box_t ph)
- int [ppl_Long_Double_Box_contains_integer_point](#) (ppl_const_Long_Double_Box_t ph)
- int [ppl_Long_Double_Box_is_topologically_closed](#) (ppl_const_Long_Double_Box_t ph)
- int [ppl_Long_Double_Box_is_discrete](#) (ppl_const_Long_Double_Box_t ph)
- int [ppl_Long_Double_Box_topological_closure_assign](#) (ppl_Long_Double_Box_t ph)
- int [ppl_Long_Double_Box_bounds_from_above](#) (ppl_const_Long_Double_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Long_Double_Box_bounds_from_below](#) (ppl_const_Long_Double_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Long_Double_Box_maximize](#) (ppl_const_Long_Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Long_Double_Box_minimize](#) (ppl_const_Long_Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Long_Double_Box_maximize_with_point](#) (ppl_const_Long_Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Long_Double_Box_minimize_with_point](#) (ppl_const_Long_Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Long_Double_Box_frequency](#) (ppl_const_Long_Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)
- int [ppl_Long_Double_Box_contains_Long_Double_Box](#) (ppl_const_Long_Double_Box_t x, ppl_const_Long_Double_Box_t y)
- int [ppl_Long_Double_Box_strictly_contains_Long_Double_Box](#) (ppl_const_Long_Double_Box_t x, ppl_const_Long_Double_Box_t y)
- int [ppl_Long_Double_Box_is_disjoint_from_Long_Double_Box](#) (ppl_const_Long_Double_Box_t x, ppl_const_Long_Double_Box_t y)
- int [ppl_Long_Double_Box_equals_Long_Double_Box](#) (ppl_const_Long_Double_Box_t x, ppl_const_Long_Double_Box_t y)
- int [ppl_Long_Double_Box_OK](#) (ppl_const_Long_Double_Box_t ph)
- int [ppl_Long_Double_Box_add_constraint](#) (ppl_Long_Double_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Long_Double_Box_add_congruence](#) (ppl_Long_Double_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Long_Double_Box_add_constraints](#) (ppl_Long_Double_Box_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Long_Double_Box_add_congruences](#) (ppl_Long_Double_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Long_Double_Box_refine_with_constraint](#) (ppl_Long_Double_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Long_Double_Box_refine_with_congruence](#) (ppl_Long_Double_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Long_Double_Box_refine_with_constraints](#) (ppl_Long_Double_Box_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Long_Double_Box_refine_with_congruences](#) (ppl_Long_Double_Box_t ph, ppl_const_Congruence_System_t cs)

- int [ppl_Long_Double_Box_intersection_assign](#) (ppl_Long_Double_Box_t x, ppl_const_Long_Double_Box_t y)
- int [ppl_Long_Double_Box_upper_bound_assign](#) (ppl_Long_Double_Box_t x, ppl_const_Long_Double_Box_t y)
- int [ppl_Long_Double_Box_difference_assign](#) (ppl_Long_Double_Box_t x, ppl_const_Long_Double_Box_t y)
- int [ppl_Long_Double_Box_concatenate_assign](#) (ppl_Long_Double_Box_t x, ppl_const_Long_Double_Box_t y)
- int [ppl_Long_Double_Box_time_elapse_assign](#) (ppl_Long_Double_Box_t x, ppl_const_Long_Double_Box_t y)
- int [ppl_Long_Double_Box_upper_bound_assign_if_exact](#) (ppl_Long_Double_Box_t x, ppl_const_Long_Double_Box_t y)
- int [ppl_Long_Double_Box_simplify_using_context_assign](#) (ppl_Long_Double_Box_t x, ppl_const_Long_Double_Box_t y)
- int [ppl_Long_Double_Box_constrains](#) (ppl_Long_Double_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Long_Double_Box_unconstrain_space_dimension](#) (ppl_Long_Double_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Long_Double_Box_unconstrain_space_dimensions](#) (ppl_Long_Double_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Long_Double_Box_affine_image](#) (ppl_Long_Double_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Long_Double_Box_affine_preimage](#) (ppl_Long_Double_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Long_Double_Box_bounded_affine_image](#) (ppl_Long_Double_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Long_Double_Box_bounded_affine_preimage](#) (ppl_Long_Double_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Long_Double_Box_generalized_affine_image](#) (ppl_Long_Double_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Long_Double_Box_generalized_affine_preimage](#) (ppl_Long_Double_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Long_Double_Box_generalized_affine_image_lhs_rhs](#) (ppl_Long_Double_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Long_Double_Box_generalized_affine_preimage_lhs_rhs](#) (ppl_Long_Double_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Long_Double_Box_add_space_dimensions_and_embed](#) (ppl_Long_Double_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Long_Double_Box_add_space_dimensions_and_project](#) (ppl_Long_Double_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Long_Double_Box_remove_space_dimensions](#) (ppl_Long_Double_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Long_Double_Box_remove_higher_space_dimensions](#) (ppl_Long_Double_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Long_Double_Box_expand_space_dimension](#) (ppl_Long_Double_Box_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)

- int `ppl_Long_Double_Box_fold_space_dimensions` (ppl_Long_Double_Box_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)
- int `ppl_Long_Double_Box_map_space_dimensions` (ppl_Long_Double_Box_t ph, ppl_dimension_type maps[], size_t n)
- int `ppl_Long_Double_Box_drop_some_non_integer_points` (ppl_Long_Double_Box_t ph, int complexity)
- int `ppl_Long_Double_Box_drop_some_non_integer_points_2` (ppl_Long_Double_Box_t ph, ppl_dimension_type ds[], size_t n, int complexity)
- int `ppl_Long_Double_Box_external_memory_in_bytes` (ppl_const_Long_Double_Box_t ps, size_t *sz)
- int `ppl_Long_Double_Box_total_memory_in_bytes` (ppl_const_Long_Double_Box_t ps, size_t *sz)
- int `ppl_Long_Double_Box_CC76_widening_assign_with_tokens` (ppl_Long_Double_Box_t x, ppl_const_Long_Double_Box_t y, unsigned *tp)
- int `ppl_Long_Double_Box_CC76_widening_assign` (ppl_Long_Double_Box_t x, ppl_const_Long_Double_Box_t y)
- int `ppl_Long_Double_Box_widening_assign_with_tokens` (ppl_Long_Double_Box_t x, ppl_const_Long_Double_Box_t y, unsigned *tp)
- int `ppl_Long_Double_Box_widening_assign` (ppl_Long_Double_Box_t x, ppl_const_Long_Double_Box_t y)
- int `ppl_Long_Double_Box_limited_CC76_extrapolation_assign_with_tokens` (ppl_Long_Double_Box_t x, ppl_const_Long_Double_Box_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- int `ppl_Long_Double_Box_limited_CC76_extrapolation_assign` (ppl_Long_Double_Box_t x, ppl_const_Long_Double_Box_t y, ppl_const_Constraint_System_t cs)
- int `ppl_Long_Double_Box_linear_partition` (ppl_const_Long_Double_Box_t x, ppl_const_Long_Double_Box_t y, ppl_Long_Double_Box_t *p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest)
- int `ppl_Long_Double_Box_wrap_assign` (ppl_Long_Double_Box_t ph, ppl_dimension_type ds[], size_t n, enum ppl_enum_Bounded_Integer_Type_Width w, enum ppl_enum_Bounded_Integer_Type_Representation r, enum ppl_enum_Bounded_Integer_Type_Overflow o, const ppl_const_Constraint_System_t *pcs, unsigned complexity_threshold, int wrap_individually)
- int `ppl_new_Long_Double_Box_recycle_Constraint_System` (ppl_Long_Double_Box_t *pph, ppl_Constraint_System_t cs)
- int `ppl_new_Long_Double_Box_recycle_Congruence_System` (ppl_Long_Double_Box_t *pph, ppl_Congruence_System_t cs)
- int `ppl_new_Long_Double_Box_recycle_Generator_System` (ppl_Long_Double_Box_t *pph, ppl_Generator_System_t cs)
- int `ppl_assign_Long_Double_Box_from_Long_Double_Box` (ppl_Long_Double_Box_t dst, ppl_const_Long_Double_Box_t src)
- int `ppl_Long_Double_Box_add_recycled_constraints` (ppl_Long_Double_Box_t ph, ppl_Constraint_System_t cs)
- int `ppl_Long_Double_Box_add_recycled_congruences` (ppl_Long_Double_Box_t ph, ppl_Congruence_System_t cs)
- int `ppl_termination_test_MS_Long_Double_Box` (ppl_const_Long_Double_Box_t pset)
- int `ppl_termination_test_PR_Long_Double_Box` (ppl_const_Long_Double_Box_t pset)
- int `ppl_one_affine_ranking_function_MS_Long_Double_Box` (ppl_const_Long_Double_Box_t pset, ppl_Generator_t point)
- int `ppl_one_affine_ranking_function_PR_Long_Double_Box` (ppl_const_Long_Double_Box_t pset, ppl_Generator_t point)
- int `ppl_all_affine_ranking_functions_MS_Long_Double_Box` (ppl_const_Long_Double_Box_t pset, ppl_Polyhedron_t ph)
- int `ppl_all_affine_ranking_functions_PR_Long_Double_Box` (ppl_const_Long_Double_Box_t pset, ppl_Polyhedron_t ph)

- `int ppl_termination_test_MS_Long_Double_Box_2` (`ppl_const_Long_Double_Box_t pset_before`, `ppl_const_Long_Double_Box_t pset_after`)
- `int ppl_termination_test_PR_Long_Double_Box_2` (`ppl_const_Long_Double_Box_t pset_before`, `ppl_const_Long_Double_Box_t pset_after`)
- `int ppl_one_affine_ranking_function_MS_Long_Double_Box_2` (`ppl_const_Long_Double_Box_t pset_before`, `ppl_const_Long_Double_Box_t pset_after`, `ppl_Generator_t point`)
- `int ppl_one_affine_ranking_function_PR_Long_Double_Box_2` (`ppl_const_Long_Double_Box_t pset_before`, `ppl_const_Long_Double_Box_t pset_after`, `ppl_Generator_t point`)
- `int ppl_all_affine_ranking_functions_MS_Long_Double_Box_2` (`ppl_const_Long_Double_Box_t pset_before`, `ppl_const_Long_Double_Box_t pset_after`, `ppl_Polyhedron_t ph`)
- `int ppl_all_affine_ranking_functions_PR_Long_Double_Box_2` (`ppl_const_Long_Double_Box_t pset_before`, `ppl_const_Long_Double_Box_t pset_after`, `ppl_Polyhedron_t ph`)

10.39.1 Detailed Description

Types and functions for `ppl_Long_Double_Box_tag`.

10.39.2 Friends And Related Function Documentation

- 10.39.2.1** `int ppl_all_affine_ranking_functions_MS_Long_Double_Box`
(`ppl_const_Long_Double_Box_t pset`, `ppl_Polyhedron_t ph`) [**related**]
- 10.39.2.2** `int ppl_all_affine_ranking_functions_MS_Long_Double_Box_2`
(`ppl_const_Long_Double_Box_t pset_before`, `ppl_const_Long_Double_Box_t pset_after`, `ppl_Polyhedron_t ph`) [**related**]
- 10.39.2.3** `int ppl_all_affine_ranking_functions_PR_Long_Double_Box`
(`ppl_const_Long_Double_Box_t pset`, `ppl_Polyhedron_t ph`) [**related**]
- 10.39.2.4** `int ppl_all_affine_ranking_functions_PR_Long_Double_Box_2`
(`ppl_const_Long_Double_Box_t pset_before`, `ppl_const_Long_Double_Box_t pset_after`, `ppl_Polyhedron_t ph`) [**related**]
- 10.39.2.5** `int ppl_assign_Long_Double_Box_from_Long_Double_Box` (`ppl_Long_Double_Box_t dst`, `ppl_const_Long_Double_Box_t src`) [**related**]
- 10.39.2.6** `int ppl_delete_Long_Double_Box` (`ppl_const_Long_Double_Box_t ph`) [**related**]

- 10.39.2.7** `int ppl_Long_Double_Box_add_congruence (ppl_Long_Double_Box_t ph,
ppl_const_Congruence_t c)` [**related**]
- 10.39.2.8** `int ppl_Long_Double_Box_add_congruences (ppl_Long_Double_Box_t ph,
ppl_const_Congruence_System_t cs)` [**related**]
- 10.39.2.9** `int ppl_Long_Double_Box_add_constraint (ppl_Long_Double_Box_t ph,
ppl_const_Constraint_t c)` [**related**]
- 10.39.2.10** `int ppl_Long_Double_Box_add_constraints (ppl_Long_Double_Box_t ph,
ppl_const_Constraint_System_t cs)` [**related**]
- 10.39.2.11** `int ppl_Long_Double_Box_add_recycled_congruences (ppl_Long_Double_Box_t ph,
ppl_Congruence_System_t cs)` [**related**]
- 10.39.2.12** `int ppl_Long_Double_Box_add_recycled_constraints (ppl_Long_Double_Box_t ph,
ppl_Constraint_System_t cs)` [**related**]
- 10.39.2.13** `int ppl_Long_Double_Box_add_space_dimensions_and_embed
(ppl_Long_Double_Box_t ph, ppl_dimension_type d)` [**related**]
- 10.39.2.14** `int ppl_Long_Double_Box_add_space_dimensions_and_project
(ppl_Long_Double_Box_t ph, ppl_dimension_type d)` [**related**]
- 10.39.2.15** `int ppl_Long_Double_Box_affine_dimension (ppl_const_Long_Double_Box_t ph,
ppl_dimension_type * m)` [**related**]

- 10.39.2.16 `int ppl_Long_Double_Box_affine_image (ppl_Long_Double_Box_t ph,
ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t
d)` [`related`]
- 10.39.2.17 `int ppl_Long_Double_Box_affine_preimage (ppl_Long_Double_Box_t ph,
ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t
d)` [`related`]
- 10.39.2.18 `int ppl_Long_Double_Box_bounded_affine_image (ppl_Long_Double_Box_t
ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb,
ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [`related`]
- 10.39.2.19 `int ppl_Long_Double_Box_bounded_affine_preimage (ppl_Long_Double_Box_t
ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb,
ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [`related`]
- 10.39.2.20 `int ppl_Long_Double_Box_bounds_from_above (ppl_const_Long_Double_Box_t ph,
ppl_const_Linear_Expression_t le)` [`related`]
- 10.39.2.21 `int ppl_Long_Double_Box_bounds_from_below (ppl_const_Long_Double_Box_t ph,
ppl_const_Linear_Expression_t le)` [`related`]
- 10.39.2.22 `int ppl_Long_Double_Box_CC76_widening_assign (ppl_Long_Double_Box_t x,
ppl_const_Long_Double_Box_t y)` [`related`]
- 10.39.2.23 `int ppl_Long_Double_Box_CC76_widening_assign_with_tokens
(ppl_Long_Double_Box_t x, ppl_const_Long_Double_Box_t y, unsigned * tp)`
[`related`]

- 10.39.2.24 `int ppl_Long_Double_Box_concatenate_assign (ppl_Long_Double_Box_t x, ppl_const_Long_Double_Box_t y)` [`related`]
- 10.39.2.25 `int ppl_Long_Double_Box_constrains (ppl_Long_Double_Box_t ph, ppl_dimension_type var)` [`related`]
- 10.39.2.26 `int ppl_Long_Double_Box_contains_integer_point (ppl_const_Long_Double_Box_t ph)` [`related`]
- 10.39.2.27 `int ppl_Long_Double_Box_contains_Long_Double_Box (ppl_const_Long_Double_Box_t x, ppl_const_Long_Double_Box_t y)` [`related`]
- 10.39.2.28 `int ppl_Long_Double_Box_difference_assign (ppl_Long_Double_Box_t x, ppl_const_Long_Double_Box_t y)` [`related`]
- 10.39.2.29 `int ppl_Long_Double_Box_drop_some_non_integer_points (ppl_Long_Double_Box_t ph, int complexity)` [`related`]
- 10.39.2.30 `int ppl_Long_Double_Box_drop_some_non_integer_points_2 (ppl_Long_Double_Box_t ph, ppl_dimension_type ds[], size_t n, int complexity)` [`related`]
- 10.39.2.31 `int ppl_Long_Double_Box_equals_Long_Double_Box (ppl_const_Long_Double_Box_t x, ppl_const_Long_Double_Box_t y)` [`related`]
- 10.39.2.32 `int ppl_Long_Double_Box_expand_space_dimension (ppl_Long_Double_Box_t ph, ppl_dimension_type d, ppl_dimension_type m)` [`related`]

- 10.39.2.33 `int ppl_Long_Double_Box_external_memory_in_bytes (ppl_const_Long_Double_Box_t ps, size_t * sz)` [**related**]
- 10.39.2.34 `int ppl_Long_Double_Box_fold_space_dimensions (ppl_Long_Double_Box_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [**related**]
- 10.39.2.35 `int ppl_Long_Double_Box_frequency (ppl_const_Long_Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)` [**related**]
- 10.39.2.36 `int ppl_Long_Double_Box_generalized_affine_image (ppl_Long_Double_Box_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.39.2.37 `int ppl_Long_Double_Box_generalized_affine_image_lhs_rhs (ppl_Long_Double_Box_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` [**related**]
- 10.39.2.38 `int ppl_Long_Double_Box_generalized_affine_preimage (ppl_Long_Double_Box_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.39.2.39 `int ppl_Long_Double_Box_generalized_affine_preimage_lhs_rhs (ppl_Long_Double_Box_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` [**related**]
- 10.39.2.40 `int ppl_Long_Double_Box_get_congruences (ppl_const_Long_Double_Box_t ph, ppl_const_Congruence_System_t * pcs)` [**related**]

- 10.39.2.41 `int ppl_Long_Double_Box_get_constraints (ppl_const_Long_Double_Box_t ph,
ppl_const_Constraint_System_t * pcs)` [**related**]
- 10.39.2.42 `int ppl_Long_Double_Box_get_minimized_congruences (ppl_const_
Long_Double_Box_t ph, ppl_const_Congruence_System_t * pcs)`
[**related**]
- 10.39.2.43 `int ppl_Long_Double_Box_get_minimized_constraints (ppl_const_Long_Double_Box_t
ph, ppl_const_Constraint_System_t * pcs)` [**related**]
- 10.39.2.44 `int ppl_Long_Double_Box_intersection_assign (ppl_Long_Double_Box_t x,
ppl_const_Long_Double_Box_t y)` [**related**]
- 10.39.2.45 `int ppl_Long_Double_Box_is_bounded (ppl_const_Long_Double_Box_t ph)`
[**related**]
- 10.39.2.46 `int ppl_Long_Double_Box_is_discrete (ppl_const_Long_Double_Box_t ph)`
[**related**]
- 10.39.2.47 `int ppl_Long_Double_Box_is_disjoint_from_Long_Double_Box
(ppl_const_Long_Double_Box_t x, ppl_const_Long_Double_Box_t y)` [**related**]
- 10.39.2.48 `int ppl_Long_Double_Box_is_empty (ppl_const_Long_Double_Box_t ph)`
[**related**]
- 10.39.2.49 `int ppl_Long_Double_Box_is_topologically_closed (ppl_const_Long_Double_Box_t ph)`
[**related**]

- 10.39.2.50 `int ppl_Long_Double_Box_is_universe (ppl_const_Long_Double_Box_t ph)`
[related]
- 10.39.2.51 `int ppl_Long_Double_Box_limited_CC76_extrapolation_assign (ppl_Long_Double_Box_t x, ppl_const_Long_Double_Box_t y, ppl_const_Constraint_System_t cs)`
[related]
- 10.39.2.52 `int ppl_Long_Double_Box_limited_CC76_extrapolation_assign_with_tokens (ppl_Long_Double_Box_t x, ppl_const_Long_Double_Box_t y, ppl_const_Constraint_System_t cs, unsigned * tp)` [related]
- 10.39.2.53 `int ppl_Long_Double_Box_linear_partition (ppl_const_Long_Double_Box_t x, ppl_const_Long_Double_Box_t y, ppl_Long_Double_Box_t * p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t * p_rest)` [related]
- 10.39.2.54 `int ppl_Long_Double_Box_map_space_dimensions (ppl_Long_Double_Box_t ph, ppl_dimension_type maps[], size_t n)` [related]
- 10.39.2.55 `int ppl_Long_Double_Box_maximize (ppl_const_Long_Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [related]
- 10.39.2.56 `int ppl_Long_Double_Box_maximize_with_point (ppl_const_Long_Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` [related]
- 10.39.2.57 `int ppl_Long_Double_Box_minimize (ppl_const_Long_Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [related]

- 10.39.2.58** `int ppl_Long_Double_Box_minimize_with_point (ppl_const_Long_Double_Box_t ph,
ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d,
int * poptimum, ppl_Generator_t point)` [**related**]
- 10.39.2.59** `int ppl_Long_Double_Box_OK (ppl_const_Long_Double_Box_t ph)` [**related**]
- 10.39.2.60** `int ppl_Long_Double_Box_refine_with_congruence (ppl_Long_Double_Box_t ph,
ppl_const_Congruence_t c)` [**related**]
- 10.39.2.61** `int ppl_Long_Double_Box_refine_with_congruences (ppl_Long_Double_Box_t ph,
ppl_const_Congruence_System_t cs)` [**related**]
- 10.39.2.62** `int ppl_Long_Double_Box_refine_with_constraint (ppl_Long_Double_Box_t ph,
ppl_const_Constraint_t c)` [**related**]
- 10.39.2.63** `int ppl_Long_Double_Box_refine_with_constraints (ppl_Long_Double_Box_t ph,
ppl_const_Constraint_System_t cs)` [**related**]
- 10.39.2.64** `int ppl_Long_Double_Box_relation_with_Congruence (ppl_const_Long_Double_Box_t
ph, ppl_const_Congruence_t c)` [**related**]
- 10.39.2.65** `int ppl_Long_Double_Box_relation_with_Constraint (ppl_const_Long_Double_Box_t
ph, ppl_const_Constraint_t c)` [**related**]
- 10.39.2.66** `int ppl_Long_Double_Box_relation_with_Generator (ppl_const_Long_Double_Box_t
ph, ppl_const_Generator_t c)` [**related**]

- 10.39.2.67 `int ppl_Long_Double_Box_remove_higher_space_dimensions`
`(ppl_Long_Double_Box_t ph, ppl_dimension_type d)` [`related`]
- 10.39.2.68 `int ppl_Long_Double_Box_remove_space_dimensions` (`ppl_Long_Double_Box_t ph,`
`ppl_dimension_type ds[], size_t n`) [`related`]
- 10.39.2.69 `int ppl_Long_Double_Box_simplify_using_context_assign` (`ppl_Long_Double_Box_t x,`
`ppl_const_Long_Double_Box_t y`) [`related`]
- 10.39.2.70 `int ppl_Long_Double_Box_space_dimension` (`ppl_const_Long_Double_Box_t ph,`
`ppl_dimension_type * m`) [`related`]
- 10.39.2.71 `int ppl_Long_Double_Box_strictly_contains_Long_Double_Box`
`(ppl_const_Long_Double_Box_t x, ppl_const_Long_Double_Box_t y)` [`related`]
- 10.39.2.72 `int ppl_Long_Double_Box_time_elapse_assign` (`ppl_Long_Double_Box_t x,`
`ppl_const_Long_Double_Box_t y`) [`related`]
- 10.39.2.73 `int ppl_Long_Double_Box_topological_closure_assign` (`ppl_Long_Double_Box_t ph`)
[`related`]
- 10.39.2.74 `int ppl_Long_Double_Box_total_memory_in_bytes` (`ppl_const_Long_Double_Box_t ps,`
`size_t * sz`) [`related`]
- 10.39.2.75 `int ppl_Long_Double_Box_unconstrain_space_dimension` (`ppl_Long_Double_Box_t`
`ph, ppl_dimension_type var`) [`related`]

- 10.39.2.76** `int ppl_Long_Double_Box_unconstrain_space_dimensions (ppl_Long_Double_Box_t ph, ppl_dimension_type ds[], size_t n)` [**related**]
- 10.39.2.77** `int ppl_Long_Double_Box_upper_bound_assign (ppl_Long_Double_Box_t x, ppl_const_Long_Double_Box_t y)` [**related**]
- 10.39.2.78** `int ppl_Long_Double_Box_upper_bound_assign_if_exact (ppl_Long_Double_Box_t x, ppl_const_Long_Double_Box_t y)` [**related**]
- 10.39.2.79** `int ppl_Long_Double_Box_widening_assign (ppl_Long_Double_Box_t x, ppl_const_Long_Double_Box_t y)` [**related**]
- 10.39.2.80** `int ppl_Long_Double_Box_widening_assign_with_tokens (ppl_Long_Double_Box_t x, ppl_const_Long_Double_Box_t y, unsigned * tp)` [**related**]
- 10.39.2.81** `int ppl_Long_Double_Box_wrap_assign (ppl_Long_Double_Box_t ph, ppl_dimension_type ds[], size_t n, enum ppl_enum_Bounded_Integer_Type_Width w, enum ppl_enum_Bounded_Integer_Type_Representation r, enum ppl_enum_Bounded_Integer_Type_Overflow o, const ppl_const_Constraint_System_t * pcs, unsigned complexity_threshold, int wrap_individually)` [**related**]
- 10.39.2.82** `int ppl_new_Long_Double_Box_from_BD_Shape_double (ppl_Long_Double_Box_t * pph, ppl_const_BD_Shape_double_t ph)` [**related**]
- 10.39.2.83** `int ppl_new_Long_Double_Box_from_BD_Shape_double_with_complexity (ppl_Long_Double_Box_t * pph, ppl_const_BD_Shape_double_t ph, int complexity)` [**related**]
- 10.39.2.84** `int ppl_new_Long_Double_Box_from_BD_Shape_float (ppl_Long_Double_Box_t * pph, ppl_const_BD_Shape_float_t ph)` [**related**]

- 10.39.2.85 `int ppl_new_Long_Double_Box_from_BD_Shape_float_with_complexity`
(`ppl_Long_Double_Box_t * pph`, `ppl_const_BD_Shape_float_t ph`, `int complexity`)
[related]
- 10.39.2.86 `int ppl_new_Long_Double_Box_from_BD_Shape_int16_t` (`ppl_Long_Double_Box_t *`
`pph`, `ppl_const_BD_Shape_int16_t_t ph`) [related]
- 10.39.2.87 `int ppl_new_Long_Double_Box_from_BD_Shape_int16_t_with_complexity`
(`ppl_Long_Double_Box_t * pph`, `ppl_const_BD_Shape_int16_t_t ph`, `int complexity`)
[related]
- 10.39.2.88 `int ppl_new_Long_Double_Box_from_BD_Shape_int32_t` (`ppl_Long_Double_Box_t *`
`pph`, `ppl_const_BD_Shape_int32_t_t ph`) [related]
- 10.39.2.89 `int ppl_new_Long_Double_Box_from_BD_Shape_int32_t_with_complexity`
(`ppl_Long_Double_Box_t * pph`, `ppl_const_BD_Shape_int32_t_t ph`, `int complexity`)
[related]
- 10.39.2.90 `int ppl_new_Long_Double_Box_from_BD_Shape_int64_t` (`ppl_Long_Double_Box_t *`
`pph`, `ppl_const_BD_Shape_int64_t_t ph`) [related]
- 10.39.2.91 `int ppl_new_Long_Double_Box_from_BD_Shape_int64_t_with_complexity`
(`ppl_Long_Double_Box_t * pph`, `ppl_const_BD_Shape_int64_t_t ph`, `int complexity`)
[related]
- 10.39.2.92 `int ppl_new_Long_Double_Box_from_BD_Shape_int8_t` (`ppl_Long_Double_Box_t *`
`pph`, `ppl_const_BD_Shape_int8_t_t ph`) [related]

- 10.39.2.93** `int ppl_new_Long_Double_Box_from_BD_Shape_int8_t_with_complexity`
(`ppl_Long_Double_Box_t * pph`, `ppl_const_BD_Shape_int8_t_t ph`, `int complexity`)
[related]
- 10.39.2.94** `int ppl_new_Long_Double_Box_from_BD_Shape_long_double`
(`ppl_Long_Double_Box_t * pph`, `ppl_const_BD_Shape_long_double_t ph`)
[related]
- 10.39.2.95** `int ppl_new_Long_Double_Box_from_BD_Shape_long_double_with_complexity`
(`ppl_Long_Double_Box_t * pph`, `ppl_const_BD_Shape_long_double_t ph`, `int complexity`) [related]
- 10.39.2.96** `int ppl_new_Long_Double_Box_from_BD_Shape_mpq_class` (`ppl_Long_Double_Box_t * pph`, `ppl_const_BD_Shape_mpq_class_t ph`) [related]
- 10.39.2.97** `int ppl_new_Long_Double_Box_from_BD_Shape_mpq_class_with_complexity`
(`ppl_Long_Double_Box_t * pph`, `ppl_const_BD_Shape_mpq_class_t ph`, `int complexity`) [related]
- 10.39.2.98** `int ppl_new_Long_Double_Box_from_BD_Shape_mpz_class` (`ppl_Long_Double_Box_t * pph`, `ppl_const_BD_Shape_mpz_class_t ph`) [related]
- 10.39.2.99** `int ppl_new_Long_Double_Box_from_BD_Shape_mpz_class_with_complexity`
(`ppl_Long_Double_Box_t * pph`, `ppl_const_BD_Shape_mpz_class_t ph`, `int complexity`)
[related]
- 10.39.2.100** `int ppl_new_Long_Double_Box_from_C_Polyhedron` (`ppl_Long_Double_Box_t * pph`, `ppl_const_Polyhedron_t ph`) [related]

- 10.39.2.101 `int ppl_new_Long_Double_Box_from_C_Polyhedron_with_complexity`
(`ppl_Long_Double_Box_t * pph`, `ppl_const_Polyhedron_t ph`, `int complexity`)
[related]
- 10.39.2.102 `int ppl_new_Long_Double_Box_from_Congruence_System` (`ppl_Long_Double_Box_t`
`* pph`, `ppl_const_Congruence_System_t cs`) [related]
- 10.39.2.103 `int ppl_new_Long_Double_Box_from_Constraint_System` (`ppl_Long_Double_Box_t *`
`pph`, `ppl_const_Constraint_System_t cs`) [related]
- 10.39.2.104 `int ppl_new_Long_Double_Box_from_Double_Box` (`ppl_Long_Double_Box_t * pph`,
`ppl_const_Double_Box_t ph`) [related]
- 10.39.2.105 `int ppl_new_Long_Double_Box_from_Double_Box_with_complexity`
(`ppl_Long_Double_Box_t * pph`, `ppl_const_Double_Box_t ph`, `int complexity`)
[related]
- 10.39.2.106 `int ppl_new_Long_Double_Box_from_Float_Box` (`ppl_Long_Double_Box_t * pph`,
`ppl_const_Float_Box_t ph`) [related]
- 10.39.2.107 `int ppl_new_Long_Double_Box_from_Float_Box_with_complexity`
(`ppl_Long_Double_Box_t * pph`, `ppl_const_Float_Box_t ph`, `int complexity`)
[related]
- 10.39.2.108 `int ppl_new_Long_Double_Box_from_Generator_System` (`ppl_Long_Double_Box_t *`
`pph`, `ppl_const_Generator_System_t cs`) [related]
- 10.39.2.109 `int ppl_new_Long_Double_Box_from_Grid` (`ppl_Long_Double_Box_t * pph`,
`ppl_const_Grid_t ph`) [related]

- 10.39.2.110 `int ppl_new_Long_Double_Box_from_Grid_with_complexity`
(`ppl_Long_Double_Box_t * pph`, `ppl_const_Grid_t ph`, `int complexity`) [`related`]
- 10.39.2.111 `int ppl_new_Long_Double_Box_from_Int16_Box` (`ppl_Long_Double_Box_t * pph`,
`ppl_const_Int16_Box_t ph`) [`related`]
- 10.39.2.112 `int ppl_new_Long_Double_Box_from_Int16_Box_with_complexity`
(`ppl_Long_Double_Box_t * pph`, `ppl_const_Int16_Box_t ph`, `int complexity`)
[`related`]
- 10.39.2.113 `int ppl_new_Long_Double_Box_from_Int32_Box` (`ppl_Long_Double_Box_t * pph`,
`ppl_const_Int32_Box_t ph`) [`related`]
- 10.39.2.114 `int ppl_new_Long_Double_Box_from_Int32_Box_with_complexity`
(`ppl_Long_Double_Box_t * pph`, `ppl_const_Int32_Box_t ph`, `int complexity`)
[`related`]
- 10.39.2.115 `int ppl_new_Long_Double_Box_from_Int64_Box` (`ppl_Long_Double_Box_t * pph`,
`ppl_const_Int64_Box_t ph`) [`related`]
- 10.39.2.116 `int ppl_new_Long_Double_Box_from_Int64_Box_with_complexity`
(`ppl_Long_Double_Box_t * pph`, `ppl_const_Int64_Box_t ph`, `int complexity`)
[`related`]
- 10.39.2.117 `int ppl_new_Long_Double_Box_from_Int8_Box` (`ppl_Long_Double_Box_t * pph`,
`ppl_const_Int8_Box_t ph`) [`related`]
- 10.39.2.118 `int ppl_new_Long_Double_Box_from_Int8_Box_with_complexity`
(`ppl_Long_Double_Box_t * pph`, `ppl_const_Int8_Box_t ph`, `int complexity`)
[`related`]

- 10.39.2.119 `int ppl_new_Long_Double_Box_from_Long_Double_Box (ppl_Long_Double_Box_t * pph, ppl_const_Long_Double_Box_t ph)` [related]
- 10.39.2.120 `int ppl_new_Long_Double_Box_from_Long_Double_Box_with_complexity (ppl_Long_Double_Box_t * pph, ppl_const_Long_Double_Box_t ph, int complexity)` [related]
- 10.39.2.121 `int ppl_new_Long_Double_Box_from_NNC_Polyhedron (ppl_Long_Double_Box_t * pph, ppl_const_Polyhedron_t ph)` [related]
- 10.39.2.122 `int ppl_new_Long_Double_Box_from_NNC_Polyhedron_with_complexity (ppl_Long_Double_Box_t * pph, ppl_const_Polyhedron_t ph, int complexity)` [related]
- 10.39.2.123 `int ppl_new_Long_Double_Box_from_Octagonal_Shape_double (ppl_Long_Double_Box_t * pph, ppl_const_Octagonal_Shape_double_t ph)` [related]
- 10.39.2.124 `int ppl_new_Long_Double_Box_from_Octagonal_Shape_double_with_complexity (ppl_Long_Double_Box_t * pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)` [related]
- 10.39.2.125 `int ppl_new_Long_Double_Box_from_Octagonal_Shape_float (ppl_Long_Double_Box_t * pph, ppl_const_Octagonal_Shape_float_t ph)` [related]
- 10.39.2.126 `int ppl_new_Long_Double_Box_from_Octagonal_Shape_float_with_complexity (ppl_Long_Double_Box_t * pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)` [related]

- 10.39.2.127 `int ppl_new_Long_Double_Box_from_Octagonal_Shape_int16_t`
(`ppl_Long_Double_Box_t * pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`)
[related]
- 10.39.2.128 `int ppl_new_Long_Double_Box_from_Octagonal_Shape_int16_t_with_complexity`
(`ppl_Long_Double_Box_t * pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`, `int complexity`) [related]
- 10.39.2.129 `int ppl_new_Long_Double_Box_from_Octagonal_Shape_int32_t`
(`ppl_Long_Double_Box_t * pph`, `ppl_const_Octagonal_Shape_int32_t_t ph`)
[related]
- 10.39.2.130 `int ppl_new_Long_Double_Box_from_Octagonal_Shape_int32_t_with_complexity`
(`ppl_Long_Double_Box_t * pph`, `ppl_const_Octagonal_Shape_int32_t_t ph`, `int complexity`) [related]
- 10.39.2.131 `int ppl_new_Long_Double_Box_from_Octagonal_Shape_int64_t`
(`ppl_Long_Double_Box_t * pph`, `ppl_const_Octagonal_Shape_int64_t_t ph`)
[related]
- 10.39.2.132 `int ppl_new_Long_Double_Box_from_Octagonal_Shape_int64_t_with_complexity`
(`ppl_Long_Double_Box_t * pph`, `ppl_const_Octagonal_Shape_int64_t_t ph`, `int complexity`) [related]
- 10.39.2.133 `int ppl_new_Long_Double_Box_from_Octagonal_Shape_int8_t`
(`ppl_Long_Double_Box_t * pph`, `ppl_const_Octagonal_Shape_int8_t_t ph`)
[related]
- 10.39.2.134 `int ppl_new_Long_Double_Box_from_Octagonal_Shape_int8_t_with_complexity`
(`ppl_Long_Double_Box_t * pph`, `ppl_const_Octagonal_Shape_int8_t_t ph`, `int complexity`) [related]

- 10.39.2.135 `int ppl_new_Long_Double_Box_from_Octagonal_Shape_long_double`
 (`ppl_Long_Double_Box_t * pph`, `ppl_const_Octagonal_Shape_long_double_t ph`)
 [related]
- 10.39.2.136 `int ppl_new_Long_Double_Box_from_Octagonal_Shape_-`
`long_double_with_complexity` (`ppl_Long_Double_Box_t * pph`,
`ppl_const_Octagonal_Shape_long_double_t ph`, `int complexity`) [related]
- 10.39.2.137 `int ppl_new_Long_Double_Box_from_Octagonal_Shape_mpq_class`
 (`ppl_Long_Double_Box_t * pph`, `ppl_const_Octagonal_Shape_mpq_class_t ph`)
 [related]
- 10.39.2.138 `int ppl_new_Long_Double_Box_from_Octagonal_Shape_mpq_class_with_complexity`
 (`ppl_Long_Double_Box_t * pph`, `ppl_const_Octagonal_Shape_mpq_class_t ph`, `int`
`complexity`) [related]
- 10.39.2.139 `int ppl_new_Long_Double_Box_from_Octagonal_Shape_mpz_class`
 (`ppl_Long_Double_Box_t * pph`, `ppl_const_Octagonal_Shape_mpz_class_t ph`)
 [related]
- 10.39.2.140 `int ppl_new_Long_Double_Box_from_Octagonal_Shape_mpz_class_with_complexity`
 (`ppl_Long_Double_Box_t * pph`, `ppl_const_Octagonal_Shape_mpz_class_t ph`, `int`
`complexity`) [related]
- 10.39.2.141 `int ppl_new_Long_Double_Box_from_Rational_Box` (`ppl_Long_Double_Box_t * pph`,
`ppl_const_Rational_Box_t ph`) [related]
- 10.39.2.142 `int ppl_new_Long_Double_Box_from_Rational_Box_with_complexity`
 (`ppl_Long_Double_Box_t * pph`, `ppl_const_Rational_Box_t ph`, `int complexity`)
 [related]

- 10.39.2.143 `int ppl_new_Long_Double_Box_from_space_dimension (ppl_Long_Double_Box_t * pph, ppl_dimension_type d, int empty)` [related]
- 10.39.2.144 `int ppl_new_Long_Double_Box_from_Uint16_Box (ppl_Long_Double_Box_t * pph, ppl_const_Uint16_Box_t ph)` [related]
- 10.39.2.145 `int ppl_new_Long_Double_Box_from_Uint16_Box_with_complexity (ppl_Long_Double_Box_t * pph, ppl_const_Uint16_Box_t ph, int complexity)` [related]
- 10.39.2.146 `int ppl_new_Long_Double_Box_from_Uint32_Box (ppl_Long_Double_Box_t * pph, ppl_const_Uint32_Box_t ph)` [related]
- 10.39.2.147 `int ppl_new_Long_Double_Box_from_Uint32_Box_with_complexity (ppl_Long_Double_Box_t * pph, ppl_const_Uint32_Box_t ph, int complexity)` [related]
- 10.39.2.148 `int ppl_new_Long_Double_Box_from_Uint64_Box (ppl_Long_Double_Box_t * pph, ppl_const_Uint64_Box_t ph)` [related]
- 10.39.2.149 `int ppl_new_Long_Double_Box_from_Uint64_Box_with_complexity (ppl_Long_Double_Box_t * pph, ppl_const_Uint64_Box_t ph, int complexity)` [related]
- 10.39.2.150 `int ppl_new_Long_Double_Box_from_Uint8_Box (ppl_Long_Double_Box_t * pph, ppl_const_Uint8_Box_t ph)` [related]
- 10.39.2.151 `int ppl_new_Long_Double_Box_from_Uint8_Box_with_complexity (ppl_Long_Double_Box_t * pph, ppl_const_Uint8_Box_t ph, int complexity)` [related]

- 10.39.2.152 `int ppl_new_Long_Double_Box_from_Z_Box (ppl_Long_Double_Box_t * pph,
ppl_const_Z_Box_t ph)` [**related**]
- 10.39.2.153 `int ppl_new_Long_Double_Box_from_Z_Box_with_complexity
(ppl_Long_Double_Box_t * pph, ppl_const_Z_Box_t ph, int complexity)`
[**related**]
- 10.39.2.154 `int ppl_new_Long_Double_Box_recycle_Congruence_System
(ppl_Long_Double_Box_t * pph, ppl_Congruence_System_t cs)` [**related**]
- 10.39.2.155 `int ppl_new_Long_Double_Box_recycle_Constraint_System
(ppl_Long_Double_Box_t * pph, ppl_Constraint_System_t cs)` [**related**]
- 10.39.2.156 `int ppl_new_Long_Double_Box_recycle_Generator_System (ppl_Long_Double_Box_t
* pph, ppl_Generator_System_t cs)` [**related**]
- 10.39.2.157 `int ppl_one_affine_ranking_function_MS_Long_Double_Box
(ppl_const_Long_Double_Box_t pset, ppl_Generator_t point)` [**related**]
- 10.39.2.158 `int ppl_one_affine_ranking_function_MS_Long_Double_Box_2
(ppl_const_Long_Double_Box_t pset_before, ppl_const_Long_Double_Box_t
pset_after, ppl_Generator_t point)` [**related**]
- 10.39.2.159 `int ppl_one_affine_ranking_function_PR_Long_Double_Box
(ppl_const_Long_Double_Box_t pset, ppl_Generator_t point)` [**related**]
- 10.39.2.160 `int ppl_one_affine_ranking_function_PR_Long_Double_Box_2
(ppl_const_Long_Double_Box_t pset_before, ppl_const_Long_Double_Box_t
pset_after, ppl_Generator_t point)` [**related**]

10.39.2.161 `int ppl_termination_test_MS_Long_Double_Box (ppl_const_Long_Double_Box_t pset)` [**related**]

10.39.2.162 `int ppl_termination_test_MS_Long_Double_Box_2 (ppl_const_Long_Double_Box_t pset_before, ppl_const_Long_Double_Box_t pset_after)` [**related**]

10.39.2.163 `int ppl_termination_test_PR_Long_Double_Box (ppl_const_Long_Double_Box_t pset)` [**related**]

10.39.2.164 `int ppl_termination_test_PR_Long_Double_Box_2 (ppl_const_Long_Double_Box_t pset_before, ppl_const_Long_Double_Box_t pset_after)` [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.40 ppl_MIP_Problem_tag Interface Reference

Types and functions for MIP problems.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

Symbolic Constants

- `int PPL_OPTIMIZATION_MODE_MAXIMIZATION`
Code of the "maximization" optimization mode.
- `int PPL_OPTIMIZATION_MODE_MINIMIZATION`
Code of the "minimization" optimization mode.
- `int PPL_MIP_PROBLEM_STATUS_UNFEASIBLE`
Code of the "unfeasible MIP problem" status.
- `int PPL_MIP_PROBLEM_STATUS_UNBOUNDED`
Code of the "unbounded MIP problem" status.
- `int PPL_MIP_PROBLEM_STATUS_OPTIMIZED`
Code of the "optimized MIP problem" status.

- `int PPL_MIP_PROBLEM_CONTROL_PARAMETER_NAME_PRICING`
Code for the MIP problem's "pricing" control parameter name.
- `int PPL_MIP_PROBLEM_CONTROL_PARAMETER_PRICING_TEXTBOOK`
Code of MIP problem's "textbook" pricing method.
- `int PPL_MIP_PROBLEM_CONTROL_PARAMETER_PRICING_STEEPEST_EDGE_EXACT`
Code of MIP problem's "exact steepest-edge" pricing method.
- `int PPL_MIP_PROBLEM_CONTROL_PARAMETER_PRICING_STEEPEST_EDGE_FLOAT`
Code of MIP problem's "float steepest-edge" pricing method.

Constructors, Assignment and Destructor

- `int ppl_new_MIP_Problem_from_space_dimension` (`ppl_MIP_Problem_t *pmip`, `ppl_dimension_type d`)
Builds a trivial MIP problem of dimension `d` and writes a handle to it at address `pmip`.
- `int ppl_new_MIP_Problem` (`ppl_MIP_Problem_t *pmip`, `ppl_dimension_type d`, `ppl_const_Constraint_System_t cs`, `ppl_const_Linear_Expression_t le`, `int m`)
Builds a MIP problem of space dimension `d` having feasible region `cs`, objective function `le` and optimization mode `m`; writes a handle to it at address `pmip`.
- `int ppl_new_MIP_Problem_from_MIP_Problem` (`ppl_MIP_Problem_t *pmip`, `ppl_const_MIP_Problem_t mip`)
Builds a MIP problem that is a copy of `mip`; writes a handle for the newly created system at address `pmip`.
- `int ppl_assign_MIP_Problem_from_MIP_Problem` (`ppl_MIP_Problem_t dst`, `ppl_const_MIP_Problem_t src`)
Assigns a copy of the MIP problem `src` to `dst`.
- `int ppl_delete_MIP_Problem` (`ppl_const_MIP_Problem_t mip`)
Invalidates the handle `mip`: this makes sure the corresponding resources will eventually be released.

Functions that Do Not Modify the MIP_Problem

- `int ppl_MIP_Problem_space_dimension` (`ppl_const_MIP_Problem_t mip`, `ppl_dimension_type *m`)
Writes to `m` the dimension of the vector space enclosing `mip`.
- `int ppl_MIP_Problem_number_of_integer_space_dimensions` (`ppl_const_MIP_Problem_t mip`, `ppl_dimension_type *m`)
Writes to `m` the number of integer space dimensions of `mip`.
- `int ppl_MIP_Problem_integer_space_dimensions` (`ppl_const_MIP_Problem_t mip`, `ppl_dimension_type ds[]`)
Writes in the first positions of the array `ds` all the integer space dimensions of problem `mip`. If the array is not big enough to hold all of the integer space dimensions, the behavior is undefined.

- `int ppl_MIP_Problem_number_of_constraints` (`ppl_const_MIP_Problem_t mip`, `ppl_dimension_type *m`)
Writes to `m` the number of constraints defining the feasible region of `mip`.
- `int ppl_MIP_Problem_constraint_at_index` (`ppl_const_MIP_Problem_t mip`, `ppl_dimension_type i`, `ppl_const_Constraint_t *pc`)
Writes at address `pc` a const handle to the `i`-th constraint defining the feasible region of the MIP problem `mip`.
- `int ppl_MIP_Problem_objective_function` (`ppl_const_MIP_Problem_t mip`, `ppl_const_Linear_Expression_t *ple`)
Writes a const handle to the linear expression defining the objective function of the MIP problem `mip` at address `ple`.
- `int ppl_MIP_Problem_optimization_mode` (`ppl_const_MIP_Problem_t mip`)
Returns the optimization mode of the MIP problem `mip`.
- `int ppl_MIP_Problem_OK` (`ppl_const_MIP_Problem_t mip`)
Returns a positive integer if `mip` is well formed, i.e., if it satisfies all its implementation invariants; returns 0 and perhaps makes some noise if `mip` is broken. Useful for debugging purposes.

Functions that May Modify the MIP_Problem

- `int ppl_MIP_Problem_clear` (`ppl_MIP_Problem_t mip`)
Resets the MIP problem to be a trivial problem of space dimension 0.
- `int ppl_MIP_Problem_add_space_dimensions_and_embed` (`ppl_MIP_Problem_t mip`, `ppl_dimension_type d`)
Adds `d` new dimensions to the space enclosing the MIP problem `mip` and to `mip` itself.
- `int ppl_MIP_Problem_add_to_integer_space_dimensions` (`ppl_MIP_Problem_t mip`, `ppl_dimension_type ds[]`, `size_t n`)
Sets the space dimensions that are specified in first `n` positions of the array `ds` to be integer dimensions of problem `mip`. The presence of duplicates in `ds` is a waste but an innocuous one.
- `int ppl_MIP_Problem_add_constraint` (`ppl_MIP_Problem_t mip`, `ppl_const_Constraint_t c`)
Modifies the feasible region of the MIP problem `mip` by adding a copy of the constraint `c`.
- `int ppl_MIP_Problem_add_constraints` (`ppl_MIP_Problem_t mip`, `ppl_const_Constraint_System_t cs`)
Modifies the feasible region of the MIP problem `mip` by adding a copy of the constraints in `cs`.
- `int ppl_MIP_Problem_set_objective_function` (`ppl_MIP_Problem_t mip`, `ppl_const_Linear_Expression_t le`)
Sets the objective function of the MIP problem `mip` to a copy of `le`.
- `int ppl_MIP_Problem_set_optimization_mode` (`ppl_MIP_Problem_t mip`, `int mode`)
Sets the optimization mode of the MIP problem `mip` to `mode`.

Computing the Solution of the MIP_Problem

- `int ppl_MIP_Problem_is_satisfiable` (`ppl_const_MIP_Problem_t mip`)
Returns a positive integer if `mip` is satisfiable; returns 0 otherwise.

- int `ppl_MIP_Problem_solve` (`ppl_const_MIP_Problem_t mip`)
Solves the MIP problem `mip`, returning an exit status.
- int `ppl_MIP_Problem_evaluate_objective_function` (`ppl_const_MIP_Problem_t mip`, `ppl_const_Generator_t g`, `ppl_Coefficient_t num`, `ppl_Coefficient_t den`)
Evaluates the objective function of `mip` on point `g`.
- int `ppl_MIP_Problem_feasible_point` (`ppl_const_MIP_Problem_t mip`, `ppl_const_Generator_t *pg`)
Writes a const handle to a feasible point for the MIP problem `mip` at address `pg`.
- int `ppl_MIP_Problem_optimizing_point` (`ppl_const_MIP_Problem_t mip`, `ppl_const_Generator_t *pg`)
Writes a const handle to an optimizing point for the MIP problem `mip` at address `pg`.
- int `ppl_MIP_Problem_optimal_value` (`ppl_const_MIP_Problem_t mip`, `ppl_Coefficient_t num`, `ppl_Coefficient_t den`)
Returns the optimal value for `mip`.

Querying/Setting Control Parameters

- int `ppl_MIP_Problem_get_control_parameter` (`ppl_const_MIP_Problem_t mip`, int `name`)
Returns the value of control parameter `name` in problem `mip`.
- int `ppl_MIP_Problem_set_control_parameter` (`ppl_MIP_Problem_t mip`, int `value`)
Sets control parameter `value` in problem `mip`.
- int `ppl_MIP_Problem_total_memory_in_bytes` (`ppl_const_MIP_Problem_t mip`, `size_t *sz`)
Writes into `*sz` the size in bytes of the memory occupied by `mip`.
- int `ppl_MIP_Problem_external_memory_in_bytes` (`ppl_const_MIP_Problem_t mip`, `size_t *sz`)
Writes into `*sz` the size in bytes of the memory managed by `mip`.

10.40.1 Detailed Description

Types and functions for MIP problems. The types and functions for MIP problems provide an interface towards *MIP_Problem*.

10.40.2 Friends And Related Function Documentation

10.40.2.1 int `ppl_assign_MIP_Problem_from_MIP_Problem` (`ppl_MIP_Problem_t dst`, `ppl_const_MIP_Problem_t src`) [**related**]

Assigns a copy of the MIP problem `src` to `dst`.

Definition at line 1902 of file `ppl_c_implementation_common.cc`.

10.40.2.2 int ppl_delete_MIP_Problem (ppl_const_MIP_Problem_t *mip*) [related]

Invalidates the handle *mip*: this makes sure the corresponding resources will eventually be released.

Definition at line 1895 of file `ppl_c_implementation_common.cc`.

**10.40.2.3 int ppl_MIP_Problem_add_constraint (ppl_MIP_Problem_t *mip*,
ppl_const_Constraint_t *c*) [related]**

Modifies the feasible region of the MIP problem *mip* by adding a copy of the constraint *c*.

Definition at line 2010 of file `ppl_c_implementation_common.cc`.

**10.40.2.4 int ppl_MIP_Problem_add_constraints (ppl_MIP_Problem_t *mip*,
ppl_const_Constraint_System_t *cs*) [related]**

Modifies the feasible region of the MIP problem *mip* by adding a copy of the constraints in *cs*.

Definition at line 2020 of file `ppl_c_implementation_common.cc`.

**10.40.2.5 int ppl_MIP_Problem_add_space_dimensions_and_embed (ppl_MIP_Problem_t *mip*,
ppl_dimension_type *d*) [related]**

Adds *d* new dimensions to the space enclosing the MIP problem *mip* and to *mip* itself.

Definition at line 1988 of file `ppl_c_implementation_common.cc`.

**10.40.2.6 int ppl_MIP_Problem_add_to_integer_space_dimensions (ppl_MIP_Problem_t *mip*,
ppl_dimension_type *ds*[], size_t *n*) [related]**

Sets the space dimensions that are specified in first *n* positions of the array *ds* to be integer dimensions of problem *mip*. The presence of duplicates in *ds* is a waste but an innocuous one.

Definition at line 1997 of file `ppl_c_implementation_common.cc`.

10.40.2.7 int ppl_MIP_Problem_clear (ppl_MIP_Problem_t *mip*) [related]

Resets the MIP problem to be a trivial problem of space dimension 0.

Definition at line 1981 of file `ppl_c_implementation_common.cc`.

10.40.2.8 `int ppl_MIP_Problem_constraint_at_index (ppl_const_MIP_Problem_t mip,
ppl_dimension_type i, ppl_const_Constraint_t * pc) [related]`

Writes at address `pc` a const handle to the `i`-th constraint defining the feasible region of the MIP problem `mip`.

Definition at line 1950 of file `ppl_c_implementation_common.cc`.

10.40.2.9 `int PPL_MIP_PROBLEM_CONTROL_PARAMETER_NAME_PRICING
[related]`

Code for the MIP problem's "pricing" control parameter name.

Definition at line 2471 of file `ppl_c.h`.

10.40.2.10 `int PPL_MIP_PROBLEM_CONTROL_PARAMETER_PRICING_STEEPEST_-
EDGE_EXACT [related]`

Code of MIP problem's "exact steepest-edge" pricing method.

Definition at line 2481 of file `ppl_c.h`.

10.40.2.11 `int PPL_MIP_PROBLEM_CONTROL_PARAMETER_PRICING_STEEPEST_-
EDGE_FLOAT [related]`

Code of MIP problem's "float steepest-edge" pricing method.

Definition at line 2486 of file `ppl_c.h`.

10.40.2.12 `int PPL_MIP_PROBLEM_CONTROL_PARAMETER_PRICING_TEXTBOOK
[related]`

Code of MIP problem's "textbook" pricing method.

Definition at line 2476 of file `ppl_c.h`.

10.40.2.13 `int ppl_MIP_Problem_evaluate_objective_function (ppl_const_MIP_Problem_t mip,
ppl_const_Generator_t g, ppl_Coefficient_t num, ppl_Coefficient_t den) [related]`

Evaluates the objective function of `mip` on point `g`.

Parameters

mip The MIP problem defining the objective function;

g The generator on which the objective function will be evaluated;
num Will be assigned the numerator of the objective function value;
den Will be assigned the denominator of the objective function value;

Definition at line 2062 of file ppl_c_implementation_common.cc.

10.40.2.14 `int ppl_MIP_Problem_external_memory_in_bytes (ppl_const_MIP_Problem_t mip, size_t * sz) [related]`

Writes into *sz the size in bytes of the memory managed by mip.

Definition at line 2138 of file ppl_c_implementation_common.cc.

10.40.2.15 `int ppl_MIP_Problem_feasible_point (ppl_const_MIP_Problem_t mip, ppl_const_Generator_t * pg) [related]`

Writes a const handle to a feasible point for the MIP problem mip at address pg.

Definition at line 2076 of file ppl_c_implementation_common.cc.

10.40.2.16 `int ppl_MIP_Problem_get_control_parameter (ppl_const_MIP_Problem_t mip, int name) [related]`

Returns the value of control parameter name in problem mip.

Definition at line 2105 of file ppl_c_implementation_common.cc.

10.40.2.17 `int ppl_MIP_Problem_integer_space_dimensions (ppl_const_MIP_Problem_t mip, ppl_dimension_type ds[]) [related]`

Writes in the first positions of the array ds all the integer space dimensions of problem mip. If the array is not big enough to hold all of the integer space dimensions, the behavior is undefined.

Definition at line 1929 of file ppl_c_implementation_common.cc.

10.40.2.18 `int ppl_MIP_Problem_is_satisfiable (ppl_const_MIP_Problem_t mip) [related]`

Returns a positive integer if mip is satisfiable; returns 0 otherwise.

Definition at line 2050 of file ppl_c_implementation_common.cc.

10.40.2.19 `int ppl_MIP_Problem_number_of_constraints (ppl_const_MIP_Problem_t mip, ppl_dimension_type * m) [related]`

Writes to *m* the number of constraints defining the feasible region of *mip*.

Definition at line 1941 of file `ppl_c_implementation_common.cc`.

Referenced by `ppl_MIP_Problem_constraint_at_index()`.

10.40.2.20 `int ppl_MIP_Problem_number_of_integer_space_dimensions` `(ppl_const_MIP_Problem_t mip, ppl_dimension_type * m) [related]`

Writes to *m* the number of integer space dimensions of *mip*.

Definition at line 1920 of file `ppl_c_implementation_common.cc`.

10.40.2.21 `int ppl_MIP_Problem_objective_function` (`ppl_const_MIP_Problem_t mip`, `ppl_const_Linear_Expression_t * ple`) [related]

Writes a const handle to the linear expression defining the objective function of the MIP problem *mip* at address *ple*.

Definition at line 1966 of file `ppl_c_implementation_common.cc`.

10.40.2.22 `int ppl_MIP_Problem_OK` (`ppl_const_MIP_Problem_t mip`) [related]

Returns a positive integer if *mip* is well formed, i.e., if it satisfies all its implementation invariants; returns 0 and perhaps makes some noise if *mip* is broken. Useful for debugging purposes.

Definition at line 2124 of file `ppl_c_implementation_common.cc`.

10.40.2.23 `int ppl_MIP_Problem_optimal_value` (`ppl_const_MIP_Problem_t mip`, `ppl_Coefficient_t num`, `ppl_Coefficient_t den`) [related]

Returns the optimal value for *mip*.

Parameters

mip The MIP problem;

num Will be assigned the numerator of the optimal value;

den Will be assigned the denominator of the optimal value.

Definition at line 2094 of file `ppl_c_implementation_common.cc`.

10.40.2.24 `int ppl_MIP_Problem_optimization_mode` (`ppl_const_MIP_Problem_t mip`) [related]

Returns the optimization mode of the MIP problem *mip*.

Definition at line 1975 of file `ppl_c_implementation_common.cc`.

10.40.2.25 `int ppl_MIP_Problem_optimizing_point (ppl_const_MIP_Problem_t mip,
ppl_const_Generator_t *pg) [related]`

Writes a const handle to an optimizing point for the MIP problem `mip` at address `pg`.

Definition at line 2085 of file `ppl_c_implementation_common.cc`.

10.40.2.26 `int ppl_MIP_Problem_set_control_parameter (ppl_MIP_Problem_t mip, int value)
[related]`

Sets control parameter `value` in problem `mip`.

Definition at line 2114 of file `ppl_c_implementation_common.cc`.

10.40.2.27 `int ppl_MIP_Problem_set_objective_function (ppl_MIP_Problem_t mip,
ppl_const_Linear_Expression_t le) [related]`

Sets the objective function of the MIP problem `mip` to a copy of `le`.

Definition at line 2030 of file `ppl_c_implementation_common.cc`.

10.40.2.28 `int ppl_MIP_Problem_set_optimization_mode (ppl_MIP_Problem_t mip, int mode)
[related]`

Sets the optimization mode of the MIP problem `mip` to `mode`.

Definition at line 2040 of file `ppl_c_implementation_common.cc`.

10.40.2.29 `int ppl_MIP_Problem_solve (ppl_const_MIP_Problem_t mip) [related]`

Solves the MIP problem `mip`, returning an exit status.

Returns

`PPL_MIP_PROBLEM_STATUS_UNFEASIBLE` if the MIP problem is not satisfiable; `PPL_MIP_PROBLEM_STATUS_UNBOUNDED` if the MIP problem is satisfiable but there is no finite bound to the value of the objective function; `PPL_MIP_PROBLEM_STATUS_OPTIMIZED` if the MIP problem admits an optimal solution.

Definition at line 2056 of file `ppl_c_implementation_common.cc`.

10.40.2.30 `int ppl_MIP_Problem_space_dimension (ppl_const_MIP_Problem_t mip,
ppl_dimension_type *m) [related]`

Writes to *m* the dimension of the vector space enclosing *mip*.

Definition at line 1912 of file `ppl_c_implementation_common.cc`.

10.40.2.31 `int PPL_MIP_PROBLEM_STATUS_OPTIMIZED` [related]

Code of the "optimized MIP problem" status.

Definition at line 2466 of file `ppl_c.h`.

10.40.2.32 `int PPL_MIP_PROBLEM_STATUS_UNBOUNDED` [related]

Code of the "unbounded MIP problem" status.

Definition at line 2461 of file `ppl_c.h`.

10.40.2.33 `int PPL_MIP_PROBLEM_STATUS_UNFEASIBLE` [related]

Code of the "unfeasible MIP problem" status.

Definition at line 2456 of file `ppl_c.h`.

10.40.2.34 `int ppl_MIP_Problem_total_memory_in_bytes (ppl_const_MIP_Problem_t mip, size_t * sz)` [related]

Writes into **sz* the size in bytes of the memory occupied by *mip*.

Definition at line 2130 of file `ppl_c_implementation_common.cc`.

10.40.2.35 `int ppl_new_MIP_Problem (ppl_MIP_Problem_t * pmip, ppl_dimension_type d, ppl_const_Constraint_System_t cs, ppl_const_Linear_Expression_t le, int m)` [related]

Builds a MIP problem of space dimension *d* having feasible region *cs*, objective function *le* and optimization mode *m*; writes a handle to it at address *pmip*.

Definition at line 1872 of file `ppl_c_implementation_common.cc`.

10.40.2.36 `int ppl_new_MIP_Problem_from_MIP_Problem (ppl_MIP_Problem_t * pmip, ppl_const_MIP_Problem_t mip)` [related]

Builds a MIP problem that is a copy of *mip*; writes a handle for the newly created system at address *pmip*.

Definition at line 1886 of file `ppl_c_implementation_common.cc`.

10.40.2.37 `int ppl_new_MIP_Problem_from_space_dimension (ppl_MIP_Problem_t * pmip,
ppl_dimension_type d)` [[related](#)]

Builds a trivial MIP problem of dimension *d* and writes a handle to it at address *pmip*.

Definition at line 1864 of file `ppl_c_implementation_common.cc`.

10.40.2.38 `int PPL_OPTIMIZATION_MODE_MAXIMIZATION` [[related](#)]

Code of the "maximization" optimization mode.

Definition at line 2446 of file `ppl_c.h`.

10.40.2.39 `int PPL_OPTIMIZATION_MODE_MINIMIZATION` [[related](#)]

Code of the "minimization" optimization mode.

Definition at line 2451 of file `ppl_c.h`.

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.41 `ppl_Octagonal_Shape_double_tag` Interface Reference

Types and functions for [ppl_Octagonal_Shape_double_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Octagonal_Shape_double (ppl_const_Octagonal_Shape_double_t ph)`
- `int ppl_new_Octagonal_Shape_double_from_space_dimension (ppl_Octagonal_Shape_double_t *pph, ppl_dimension_type d, int empty)`
- `int ppl_new_Octagonal_Shape_double_from_Int8_Box (ppl_Octagonal_Shape_double_t *pph, ppl_const_Int8_Box_t ph)`
- `int ppl_new_Octagonal_Shape_double_from_Int16_Box (ppl_Octagonal_Shape_double_t *pph, ppl_const_Int16_Box_t ph)`
- `int ppl_new_Octagonal_Shape_double_from_Int32_Box (ppl_Octagonal_Shape_double_t *pph, ppl_const_Int32_Box_t ph)`
- `int ppl_new_Octagonal_Shape_double_from_Int64_Box (ppl_Octagonal_Shape_double_t *pph, ppl_const_Int64_Box_t ph)`
- `int ppl_new_Octagonal_Shape_double_from_Uint8_Box (ppl_Octagonal_Shape_double_t *pph, ppl_const_Uint8_Box_t ph)`
- `int ppl_new_Octagonal_Shape_double_from_Uint16_Box (ppl_Octagonal_Shape_double_t *pph, ppl_const_Uint16_Box_t ph)`

- `int ppl_new_Octagonal_Shape_double_from_Uint32_Box` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Uint32_Box_t ph`)
- `int ppl_new_Octagonal_Shape_double_from_Uint64_Box` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Uint64_Box_t ph`)
- `int ppl_new_Octagonal_Shape_double_from_Z_Box` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Z_Box_t ph`)
- `int ppl_new_Octagonal_Shape_double_from_Rational_Box` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Rational_Box_t ph`)
- `int ppl_new_Octagonal_Shape_double_from_BD_Shape_int8_t` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_BD_Shape_int8_t_t ph`)
- `int ppl_new_Octagonal_Shape_double_from_BD_Shape_int16_t` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_BD_Shape_int16_t_t ph`)
- `int ppl_new_Octagonal_Shape_double_from_BD_Shape_int32_t` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_BD_Shape_int32_t_t ph`)
- `int ppl_new_Octagonal_Shape_double_from_BD_Shape_int64_t` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_BD_Shape_int64_t_t ph`)
- `int ppl_new_Octagonal_Shape_double_from_BD_Shape_mpz_class` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_BD_Shape_mpz_class_t ph`)
- `int ppl_new_Octagonal_Shape_double_from_BD_Shape_mpq_class` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_BD_Shape_mpq_class_t ph`)
- `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_int8_t` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph`)
- `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_int16_t` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph`)
- `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_int32_t` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph`)
- `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_int64_t` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph`)
- `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_mpz_class` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph`)
- `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_mpq_class` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph`)
- `int ppl_new_Octagonal_Shape_double_from_C_Polyhedron` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Polyhedron_t ph`)
- `int ppl_new_Octagonal_Shape_double_from_NNC_Polyhedron` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Polyhedron_t ph`)
- `int ppl_new_Octagonal_Shape_double_from_Grid` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Grid_t ph`)
- `int ppl_new_Octagonal_Shape_double_from_Float_Box` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Float_Box_t ph`)
- `int ppl_new_Octagonal_Shape_double_from_BD_Shape_float` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_BD_Shape_float_t ph`)
- `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_float` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Octagonal_Shape_float_t ph`)
- `int ppl_new_Octagonal_Shape_double_from_Double_Box` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Double_Box_t ph`)
- `int ppl_new_Octagonal_Shape_double_from_BD_Shape_double` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_BD_Shape_double_t ph`)
- `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_double` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Octagonal_Shape_double_t ph`)
- `int ppl_new_Octagonal_Shape_double_from_Long_Double_Box` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Long_Double_Box_t ph`)

- `int ppl_new_Octagonal_Shape_double_from_BD_Shape_long_double` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_BD_Shape_long_double_t ph`)
- `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_long_double` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Octagonal_Shape_long_double_t ph`)
- `int ppl_new_Octagonal_Shape_double_from_Int8_Box_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Int8_Box_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_double_from_Int16_Box_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Int16_Box_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_double_from_Int32_Box_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Int32_Box_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_double_from_Int64_Box_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Int64_Box_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_double_from_Uint8_Box_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Uint8_Box_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_double_from_Uint16_Box_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Uint16_Box_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_double_from_Uint32_Box_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Uint32_Box_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_double_from_Uint64_Box_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Uint64_Box_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_double_from_Z_Box_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Z_Box_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_double_from_Rational_Box_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Rational_Box_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_double_from_BD_Shape_int8_t_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_BD_Shape_int8_t_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_double_from_BD_Shape_int16_t_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_double_from_BD_Shape_int32_t_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_double_from_BD_Shape_int64_t_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_double_from_BD_Shape_mpz_class_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_double_from_BD_Shape_mpq_class_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_int8_t_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_int16_t_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_int32_t_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_int64_t_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_mpz_class_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_mpq_class_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_double_from_C_Polyhedron_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Polyhedron_t ph, int complexity`)

- `int ppl_new_Octagonal_Shape_double_from_NNC_Polyhedron_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Polyhedron_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_double_from_Grid_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Grid_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_double_from_Float_Box_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Float_Box_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_double_from_BD_Shape_float_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_BD_Shape_float_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_float_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_double_from_Double_Box_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Double_Box_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_double_from_BD_Shape_double_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_BD_Shape_double_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_double_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_double_from_Long_Double_Box_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Long_Double_Box_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_double_from_BD_Shape_long_double_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_long_double_with_complexity` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_double_from_Constraint_System` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Constraint_System_t cs`)
- `int ppl_new_Octagonal_Shape_double_from_Congruence_System` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Congruence_System_t cs`)
- `int ppl_new_Octagonal_Shape_double_from_Generator_System` (`ppl_Octagonal_Shape_double_t *pph, ppl_const_Generator_System_t cs`)
- `int ppl_Octagonal_Shape_double_space_dimension` (`ppl_const_Octagonal_Shape_double_t ph, ppl_dimension_type *m`)
- `int ppl_Octagonal_Shape_double_affine_dimension` (`ppl_const_Octagonal_Shape_double_t ph, ppl_dimension_type *m`)
- `int ppl_Octagonal_Shape_double_relation_with_Constraint` (`ppl_const_Octagonal_Shape_double_t ph, ppl_const_Constraint_t c`)
- `int ppl_Octagonal_Shape_double_relation_with_Generator` (`ppl_const_Octagonal_Shape_double_t ph, ppl_const_Generator_t c`)
- `int ppl_Octagonal_Shape_double_relation_with_Congruence` (`ppl_const_Octagonal_Shape_double_t ph, ppl_const_Congruence_t c`)
- `int ppl_Octagonal_Shape_double_get_constraints` (`ppl_const_Octagonal_Shape_double_t ph, ppl_const_Constraint_System_t *pcs`)
- `int ppl_Octagonal_Shape_double_get_congruences` (`ppl_const_Octagonal_Shape_double_t ph, ppl_const_Congruence_System_t *pcs`)
- `int ppl_Octagonal_Shape_double_get_minimized_constraints` (`ppl_const_Octagonal_Shape_double_t ph, ppl_const_Constraint_System_t *pcs`)
- `int ppl_Octagonal_Shape_double_get_minimized_congruences` (`ppl_const_Octagonal_Shape_double_t ph, ppl_const_Congruence_System_t *pcs`)
- `int ppl_Octagonal_Shape_double_is_empty` (`ppl_const_Octagonal_Shape_double_t ph`)
- `int ppl_Octagonal_Shape_double_is_universe` (`ppl_const_Octagonal_Shape_double_t ph`)
- `int ppl_Octagonal_Shape_double_is_bounded` (`ppl_const_Octagonal_Shape_double_t ph`)
- `int ppl_Octagonal_Shape_double_contains_integer_point` (`ppl_const_Octagonal_Shape_double_t ph`)

- int [ppl_Octagonal_Shape_double_is_topologically_closed](#) (ppl_const_Octagonal_Shape_double_t ph)
- int [ppl_Octagonal_Shape_double_is_discrete](#) (ppl_const_Octagonal_Shape_double_t ph)
- int [ppl_Octagonal_Shape_double_topological_closure_assign](#) (ppl_Octagonal_Shape_double_t ph)
- int [ppl_Octagonal_Shape_double_bounds_from_above](#) (ppl_const_Octagonal_Shape_double_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Octagonal_Shape_double_bounds_from_below](#) (ppl_const_Octagonal_Shape_double_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Octagonal_Shape_double_maximize](#) (ppl_const_Octagonal_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Octagonal_Shape_double_minimize](#) (ppl_const_Octagonal_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Octagonal_Shape_double_maximize_with_point](#) (ppl_const_Octagonal_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Octagonal_Shape_double_minimize_with_point](#) (ppl_const_Octagonal_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Octagonal_Shape_double_frequency](#) (ppl_const_Octagonal_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)
- int [ppl_Octagonal_Shape_double_contains_Octagonal_Shape_double](#) (ppl_const_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y)
- int [ppl_Octagonal_Shape_double_strictly_contains_Octagonal_Shape_double](#) (ppl_const_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y)
- int [ppl_Octagonal_Shape_double_is_disjoint_from_Octagonal_Shape_double](#) (ppl_const_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y)
- int [ppl_Octagonal_Shape_double_equals_Octagonal_Shape_double](#) (ppl_const_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y)
- int [ppl_Octagonal_Shape_double_OK](#) (ppl_const_Octagonal_Shape_double_t ph)
- int [ppl_Octagonal_Shape_double_add_constraint](#) (ppl_Octagonal_Shape_double_t ph, ppl_const_Constraint_t c)
- int [ppl_Octagonal_Shape_double_add_congruence](#) (ppl_Octagonal_Shape_double_t ph, ppl_const_Congruence_t c)
- int [ppl_Octagonal_Shape_double_add_constraints](#) (ppl_Octagonal_Shape_double_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Octagonal_Shape_double_add_congruences](#) (ppl_Octagonal_Shape_double_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Octagonal_Shape_double_refine_with_constraint](#) (ppl_Octagonal_Shape_double_t ph, ppl_const_Constraint_t c)
- int [ppl_Octagonal_Shape_double_refine_with_congruence](#) (ppl_Octagonal_Shape_double_t ph, ppl_const_Congruence_t c)
- int [ppl_Octagonal_Shape_double_refine_with_constraints](#) (ppl_Octagonal_Shape_double_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Octagonal_Shape_double_refine_with_congruences](#) (ppl_Octagonal_Shape_double_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Octagonal_Shape_double_intersection_assign](#) (ppl_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y)
- int [ppl_Octagonal_Shape_double_upper_bound_assign](#) (ppl_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y)
- int [ppl_Octagonal_Shape_double_difference_assign](#) (ppl_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y)

- int [ppl_Octagonal_Shape_double_concatenate_assign](#) (ppl_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y)
- int [ppl_Octagonal_Shape_double_time_elapse_assign](#) (ppl_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y)
- int [ppl_Octagonal_Shape_double_upper_bound_assign_if_exact](#) (ppl_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y)
- int [ppl_Octagonal_Shape_double_simplify_using_context_assign](#) (ppl_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y)
- int [ppl_Octagonal_Shape_double_constrains](#) (ppl_Octagonal_Shape_double_t ph, [ppl_dimension_type](#) var)
- int [ppl_Octagonal_Shape_double_unconstrain_space_dimension](#) (ppl_Octagonal_Shape_double_t ph, [ppl_dimension_type](#) var)
- int [ppl_Octagonal_Shape_double_unconstrain_space_dimensions](#) (ppl_Octagonal_Shape_double_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Octagonal_Shape_double_affine_image](#) (ppl_Octagonal_Shape_double_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_double_affine_preimage](#) (ppl_Octagonal_Shape_double_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_double_bounded_affine_image](#) (ppl_Octagonal_Shape_double_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_double_bounded_affine_preimage](#) (ppl_Octagonal_Shape_double_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_double_generalized_affine_image](#) (ppl_Octagonal_Shape_double_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_double_generalized_affine_preimage](#) (ppl_Octagonal_Shape_double_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_double_generalized_affine_image_lhs_rhs](#) (ppl_Octagonal_Shape_double_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Octagonal_Shape_double_generalized_affine_preimage_lhs_rhs](#) (ppl_Octagonal_Shape_double_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Octagonal_Shape_double_add_space_dimensions_and_embed](#) (ppl_Octagonal_Shape_double_t ph, [ppl_dimension_type](#) d)
- int [ppl_Octagonal_Shape_double_add_space_dimensions_and_project](#) (ppl_Octagonal_Shape_double_t ph, [ppl_dimension_type](#) d)
- int [ppl_Octagonal_Shape_double_remove_space_dimensions](#) (ppl_Octagonal_Shape_double_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Octagonal_Shape_double_remove_higher_space_dimensions](#) (ppl_Octagonal_Shape_double_t ph, [ppl_dimension_type](#) d)
- int [ppl_Octagonal_Shape_double_expand_space_dimension](#) (ppl_Octagonal_Shape_double_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Octagonal_Shape_double_fold_space_dimensions](#) (ppl_Octagonal_Shape_double_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_Octagonal_Shape_double_map_space_dimensions](#) (ppl_Octagonal_Shape_double_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_Octagonal_Shape_double_drop_some_non_integer_points](#) (ppl_Octagonal_Shape_double_t ph, int complexity)

- int [ppl_Octagonal_Shape_double_drop_some_non_integer_points_2](#) (ppl_Octagonal_Shape_double_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_Octagonal_Shape_double_external_memory_in_bytes](#) (ppl_const_Octagonal_Shape_double_t ps, size_t *sz)
- int [ppl_Octagonal_Shape_double_total_memory_in_bytes](#) (ppl_const_Octagonal_Shape_double_t ps, size_t *sz)
- int [ppl_Octagonal_Shape_double_BHMZ05_widening_assign_with_tokens](#) (ppl_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y, unsigned *tp)
- int [ppl_Octagonal_Shape_double_BHMZ05_widening_assign](#) (ppl_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y)
- int [ppl_Octagonal_Shape_double_widening_assign_with_tokens](#) (ppl_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y, unsigned *tp)
- int [ppl_Octagonal_Shape_double_widening_assign](#) (ppl_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y)
- int [ppl_Octagonal_Shape_double_limited_BHMZ05_extrapolation_assign_with_tokens](#) (ppl_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- int [ppl_Octagonal_Shape_double_limited_CC76_extrapolation_assign_with_tokens](#) (ppl_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- int [ppl_Octagonal_Shape_double_limited_BHMZ05_extrapolation_assign](#) (ppl_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y, ppl_const_Constraint_System_t cs)
- int [ppl_Octagonal_Shape_double_limited_CC76_extrapolation_assign](#) (ppl_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y, ppl_const_Constraint_System_t cs)
- int [ppl_Octagonal_Shape_double_CC76_extrapolation_assign_with_tokens](#) (ppl_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y, unsigned *tp)
- int [ppl_Octagonal_Shape_double_CC76_extrapolation_assign](#) (ppl_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y)
- int [ppl_Octagonal_Shape_double_CC76_narrowing_assign](#) (ppl_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y)
- int [ppl_Octagonal_Shape_double_linear_partition](#) (ppl_const_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y, ppl_Octagonal_Shape_double_t *p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest)
- int [ppl_Octagonal_Shape_double_wrap_assign](#) (ppl_Octagonal_Shape_double_t ph, [ppl_dimension_type](#) ds[], size_t n, enum [ppl_enum_Bounded_Integer_Type_Width](#) w, enum [ppl_enum_Bounded_Integer_Type_Representation](#) r, enum [ppl_enum_Bounded_Integer_Type_Overflow](#) o, const ppl_const_Constraint_System_t *pcs, unsigned complexity_threshold, int wrap_individually)
- int [ppl_new_Octagonal_Shape_double_recycle_Constraint_System](#) (ppl_Octagonal_Shape_double_t *pph, ppl_Constraint_System_t cs)
- int [ppl_new_Octagonal_Shape_double_recycle_Congruence_System](#) (ppl_Octagonal_Shape_double_t *pph, ppl_Congruence_System_t cs)
- int [ppl_new_Octagonal_Shape_double_recycle_Generator_System](#) (ppl_Octagonal_Shape_double_t *pph, ppl_Generator_System_t cs)
- int [ppl_assign_Octagonal_Shape_double_from_Octagonal_Shape_double](#) (ppl_Octagonal_Shape_double_t dst, ppl_const_Octagonal_Shape_double_t src)
- int [ppl_Octagonal_Shape_double_add_recycled_constraints](#) (ppl_Octagonal_Shape_double_t ph, ppl_Constraint_System_t cs)
- int [ppl_Octagonal_Shape_double_add_recycled_congruences](#) (ppl_Octagonal_Shape_double_t ph, ppl_Congruence_System_t cs)

- `int ppl_termination_test_MS_Octagonal_Shape_double` (`ppl_const_Octagonal_Shape_double_t` pset)
- `int ppl_termination_test_PR_Octagonal_Shape_double` (`ppl_const_Octagonal_Shape_double_t` pset)
- `int ppl_one_affine_ranking_function_MS_Octagonal_Shape_double` (`ppl_const_Octagonal_Shape_double_t` pset, `ppl_Generator_t` point)
- `int ppl_one_affine_ranking_function_PR_Octagonal_Shape_double` (`ppl_const_Octagonal_Shape_double_t` pset, `ppl_Generator_t` point)
- `int ppl_all_affine_ranking_functions_MS_Octagonal_Shape_double` (`ppl_const_Octagonal_Shape_double_t` pset, `ppl_Polyhedron_t` ph)
- `int ppl_all_affine_ranking_functions_PR_Octagonal_Shape_double` (`ppl_const_Octagonal_Shape_double_t` pset, `ppl_Polyhedron_t` ph)
- `int ppl_termination_test_MS_Octagonal_Shape_double_2` (`ppl_const_Octagonal_Shape_double_t` pset_before, `ppl_const_Octagonal_Shape_double_t` pset_after)
- `int ppl_termination_test_PR_Octagonal_Shape_double_2` (`ppl_const_Octagonal_Shape_double_t` pset_before, `ppl_const_Octagonal_Shape_double_t` pset_after)
- `int ppl_one_affine_ranking_function_MS_Octagonal_Shape_double_2` (`ppl_const_Octagonal_Shape_double_t` pset_before, `ppl_const_Octagonal_Shape_double_t` pset_after, `ppl_Generator_t` point)
- `int ppl_one_affine_ranking_function_PR_Octagonal_Shape_double_2` (`ppl_const_Octagonal_Shape_double_t` pset_before, `ppl_const_Octagonal_Shape_double_t` pset_after, `ppl_Generator_t` point)
- `int ppl_all_affine_ranking_functions_MS_Octagonal_Shape_double_2` (`ppl_const_Octagonal_Shape_double_t` pset_before, `ppl_const_Octagonal_Shape_double_t` pset_after, `ppl_Polyhedron_t` ph)
- `int ppl_all_affine_ranking_functions_PR_Octagonal_Shape_double_2` (`ppl_const_Octagonal_Shape_double_t` pset_before, `ppl_const_Octagonal_Shape_double_t` pset_after, `ppl_Polyhedron_t` ph)

10.41.1 Detailed Description

Types and functions for `ppl_Octagonal_Shape_double_tag`.

10.41.2 Friends And Related Function Documentation

10.41.2.1 `int ppl_all_affine_ranking_functions_MS_Octagonal_Shape_double`
(`ppl_const_Octagonal_Shape_double_t` pset, `ppl_Polyhedron_t` ph) [**related**]

10.41.2.2 `int ppl_all_affine_ranking_functions_MS_Octagonal_Shape_double_2` (`ppl_const_Octagonal_Shape_double_t` pset_before, `ppl_const_Octagonal_Shape_double_t` pset_after, `ppl_Polyhedron_t` ph) [**related**]

10.41.2.3 `int ppl_all_affine_ranking_functions_PR_Octagonal_Shape_double`
(`ppl_const_Octagonal_Shape_double_t` pset, `ppl_Polyhedron_t` ph) [**related**]

- 10.41.2.4** `int ppl_all_affine_ranking_functions_PR_Octagonal_Shape_double_2 (ppl_const-Octagonal_Shape_double_t pset_before, ppl_const-Octagonal_Shape_double_t pset_after, ppl_Polyhedron_t ph)` [**related**]
- 10.41.2.5** `int ppl_assign_Octagonal_Shape_double_from_Octagonal_Shape_double (ppl_Octagonal_Shape_double_t dst, ppl_const-Octagonal_Shape_double_t src)` [**related**]
- 10.41.2.6** `int ppl_delete_Octagonal_Shape_double (ppl_const-Octagonal_Shape_double_t ph)` [**related**]
- 10.41.2.7** `int ppl_new_Octagonal_Shape_double_from_BD_Shape_double (ppl_Octagonal_Shape_double_t * pph, ppl_const_BD_Shape_double_t ph)` [**related**]
- 10.41.2.8** `int ppl_new_Octagonal_Shape_double_from_BD_Shape_double_with_complexity (ppl_Octagonal_Shape_double_t * pph, ppl_const_BD_Shape_double_t ph, int complexity)` [**related**]
- 10.41.2.9** `int ppl_new_Octagonal_Shape_double_from_BD_Shape_float (ppl_Octagonal_Shape_double_t * pph, ppl_const_BD_Shape_float_t ph)` [**related**]
- 10.41.2.10** `int ppl_new_Octagonal_Shape_double_from_BD_Shape_float_with_complexity (ppl_Octagonal_Shape_double_t * pph, ppl_const_BD_Shape_float_t ph, int complexity)` [**related**]
- 10.41.2.11** `int ppl_new_Octagonal_Shape_double_from_BD_Shape_int16_t (ppl_Octagonal_Shape_double_t * pph, ppl_const_BD_Shape_int16_t_t ph)` [**related**]

- 10.41.2.12 `int ppl_new_Octagonal_Shape_double_from_BD_Shape_int16_t_with_complexity`
(`ppl_Octagonal_Shape_double_t * pph`, `ppl_const_BD_Shape_int16_t_t ph`, `int complexity`) [`related`]
- 10.41.2.13 `int ppl_new_Octagonal_Shape_double_from_BD_Shape_int32_t`
(`ppl_Octagonal_Shape_double_t * pph`, `ppl_const_BD_Shape_int32_t_t ph`)
[`related`]
- 10.41.2.14 `int ppl_new_Octagonal_Shape_double_from_BD_Shape_int32_t_with_complexity`
(`ppl_Octagonal_Shape_double_t * pph`, `ppl_const_BD_Shape_int32_t_t ph`, `int complexity`) [`related`]
- 10.41.2.15 `int ppl_new_Octagonal_Shape_double_from_BD_Shape_int64_t`
(`ppl_Octagonal_Shape_double_t * pph`, `ppl_const_BD_Shape_int64_t_t ph`)
[`related`]
- 10.41.2.16 `int ppl_new_Octagonal_Shape_double_from_BD_Shape_int64_t_with_complexity`
(`ppl_Octagonal_Shape_double_t * pph`, `ppl_const_BD_Shape_int64_t_t ph`, `int complexity`) [`related`]
- 10.41.2.17 `int ppl_new_Octagonal_Shape_double_from_BD_Shape_int8_t`
(`ppl_Octagonal_Shape_double_t * pph`, `ppl_const_BD_Shape_int8_t_t ph`)
[`related`]
- 10.41.2.18 `int ppl_new_Octagonal_Shape_double_from_BD_Shape_int8_t_with_complexity`
(`ppl_Octagonal_Shape_double_t * pph`, `ppl_const_BD_Shape_int8_t_t ph`, `int complexity`) [`related`]
- 10.41.2.19 `int ppl_new_Octagonal_Shape_double_from_BD_Shape_long_double`
(`ppl_Octagonal_Shape_double_t * pph`, `ppl_const_BD_Shape_long_double_t_t ph`)
[`related`]

- 10.41.2.20** `int ppl_new_Octagonal_Shape_double_from_BD_Shape_long_double_with_complexity (ppl_Octagonal_Shape_double_t * pph, ppl_const_BD_Shape_long_double_t ph, int complexity)` [related]
- 10.41.2.21** `int ppl_new_Octagonal_Shape_double_from_BD_Shape_mpq_class (ppl_Octagonal_Shape_double_t * pph, ppl_const_BD_Shape_mpq_class_t ph)` [related]
- 10.41.2.22** `int ppl_new_Octagonal_Shape_double_from_BD_Shape_mpq_class_with_complexity (ppl_Octagonal_Shape_double_t * pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)` [related]
- 10.41.2.23** `int ppl_new_Octagonal_Shape_double_from_BD_Shape_mpz_class (ppl_Octagonal_Shape_double_t * pph, ppl_const_BD_Shape_mpz_class_t ph)` [related]
- 10.41.2.24** `int ppl_new_Octagonal_Shape_double_from_BD_Shape_mpz_class_with_complexity (ppl_Octagonal_Shape_double_t * pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)` [related]
- 10.41.2.25** `int ppl_new_Octagonal_Shape_double_from_C_Polyhedron (ppl_Octagonal_Shape_double_t * pph, ppl_const_Polyhedron_t ph)` [related]
- 10.41.2.26** `int ppl_new_Octagonal_Shape_double_from_C_Polyhedron_with_complexity (ppl_Octagonal_Shape_double_t * pph, ppl_const_Polyhedron_t ph, int complexity)` [related]
- 10.41.2.27** `int ppl_new_Octagonal_Shape_double_from_Congruence_System (ppl_Octagonal_Shape_double_t * pph, ppl_const_Congruence_System_t cs)` [related]

- 10.41.2.28 `int ppl_new_Octagonal_Shape_double_from_Constraint_System`
(`ppl_Octagonal_Shape_double_t * pph`, `ppl_const_Constraint_System_t cs`)
[related]
- 10.41.2.29 `int ppl_new_Octagonal_Shape_double_from_Double_Box` (`ppl_-`
`Octagonal_Shape_double_t * pph`, `ppl_const_Double_Box_t ph`)
[related]
- 10.41.2.30 `int ppl_new_Octagonal_Shape_double_from_Double_Box_with_complexity`
(`ppl_Octagonal_Shape_double_t * pph`, `ppl_const_Double_Box_t ph`, `int complexity`)
[related]
- 10.41.2.31 `int ppl_new_Octagonal_Shape_double_from_Float_Box` (`ppl_-`
`Octagonal_Shape_double_t * pph`, `ppl_const_Float_Box_t ph`)
[related]
- 10.41.2.32 `int ppl_new_Octagonal_Shape_double_from_Float_Box_with_complexity`
(`ppl_Octagonal_Shape_double_t * pph`, `ppl_const_Float_Box_t ph`, `int complexity`)
[related]
- 10.41.2.33 `int ppl_new_Octagonal_Shape_double_from_Generator_System`
(`ppl_Octagonal_Shape_double_t * pph`, `ppl_const_Generator_System_t cs`)
[related]
- 10.41.2.34 `int ppl_new_Octagonal_Shape_double_from_Grid` (`ppl_Octagonal_Shape_double_t *`
`pph`, `ppl_const_Grid_t ph`) [related]
- 10.41.2.35 `int ppl_new_Octagonal_Shape_double_from_Grid_with_complexity`
(`ppl_Octagonal_Shape_double_t * pph`, `ppl_const_Grid_t ph`, `int complexity`)
[related]

- 10.41.2.36 `int ppl_new_Octagonal_Shape_double_from_Int16_Box (ppl_Octagonal_Shape_double_t * pph, ppl_const_Int16_Box_t ph)`
[related]
- 10.41.2.37 `int ppl_new_Octagonal_Shape_double_from_Int16_Box_with_complexity (ppl_Octagonal_Shape_double_t * pph, ppl_const_Int16_Box_t ph, int complexity)`
[related]
- 10.41.2.38 `int ppl_new_Octagonal_Shape_double_from_Int32_Box (ppl_Octagonal_Shape_double_t * pph, ppl_const_Int32_Box_t ph)`
[related]
- 10.41.2.39 `int ppl_new_Octagonal_Shape_double_from_Int32_Box_with_complexity (ppl_Octagonal_Shape_double_t * pph, ppl_const_Int32_Box_t ph, int complexity)`
[related]
- 10.41.2.40 `int ppl_new_Octagonal_Shape_double_from_Int64_Box (ppl_Octagonal_Shape_double_t * pph, ppl_const_Int64_Box_t ph)`
[related]
- 10.41.2.41 `int ppl_new_Octagonal_Shape_double_from_Int64_Box_with_complexity (ppl_Octagonal_Shape_double_t * pph, ppl_const_Int64_Box_t ph, int complexity)`
[related]
- 10.41.2.42 `int ppl_new_Octagonal_Shape_double_from_Int8_Box (ppl_Octagonal_Shape_double_t * pph, ppl_const_Int8_Box_t ph)` [related]
- 10.41.2.43 `int ppl_new_Octagonal_Shape_double_from_Int8_Box_with_complexity (ppl_Octagonal_Shape_double_t * pph, ppl_const_Int8_Box_t ph, int complexity)`
[related]

- 10.41.2.44 `int ppl_new_Octagonal_Shape_double_from_Long_Double_Box`
`(ppl_Octagonal_Shape_double_t * pph, ppl_const_Long_Double_Box_t ph)`
`[related]`

- 10.41.2.45 `int ppl_new_Octagonal_Shape_double_from_Long_Double_Box_with_complexity`
`(ppl_Octagonal_Shape_double_t * pph, ppl_const_Long_Double_Box_t ph, int`
`complexity) [related]`

- 10.41.2.46 `int ppl_new_Octagonal_Shape_double_from_NNC_Polyhedron`
`(ppl_Octagonal_Shape_double_t * pph, ppl_const_Polyhedron_t ph) [related]`

- 10.41.2.47 `int ppl_new_Octagonal_Shape_double_from_NNC_Polyhedron_with_complexity`
`(ppl_Octagonal_Shape_double_t * pph, ppl_const_Polyhedron_t ph, int complexity)`
`[related]`

- 10.41.2.48 `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_double`
`(ppl_Octagonal_Shape_double_t * pph, ppl_const_Octagonal_Shape_double_t ph)`
`[related]`

- 10.41.2.49 `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_-`
`double_with_complexity (ppl_Octagonal_Shape_double_t * pph,`
`ppl_const_Octagonal_Shape_double_t ph, int complexity) [related]`

- 10.41.2.50 `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_float`
`(ppl_Octagonal_Shape_double_t * pph, ppl_const_Octagonal_Shape_float_t ph)`
`[related]`

- 10.41.2.51 `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_float_with_complexity`
`(ppl_Octagonal_Shape_double_t * pph, ppl_const_Octagonal_Shape_float_t ph, int`
`complexity) [related]`

- 10.41.2.52 `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_int16_t`
(`ppl_Octagonal_Shape_double_t * pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`)
[related]
- 10.41.2.53 `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_int16_t_with_complexity` (`ppl_Octagonal_Shape_double_t * pph`,
`ppl_const_Octagonal_Shape_int16_t_t ph`, `int complexity`) [related]
- 10.41.2.54 `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_int32_t`
(`ppl_Octagonal_Shape_double_t * pph`, `ppl_const_Octagonal_Shape_int32_t_t ph`)
[related]
- 10.41.2.55 `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_int32_t_with_complexity` (`ppl_Octagonal_Shape_double_t * pph`,
`ppl_const_Octagonal_Shape_int32_t_t ph`, `int complexity`) [related]
- 10.41.2.56 `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_int64_t`
(`ppl_Octagonal_Shape_double_t * pph`, `ppl_const_Octagonal_Shape_int64_t_t ph`)
[related]
- 10.41.2.57 `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_int64_t_with_complexity` (`ppl_Octagonal_Shape_double_t * pph`,
`ppl_const_Octagonal_Shape_int64_t_t ph`, `int complexity`) [related]
- 10.41.2.58 `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_int8_t`
(`ppl_Octagonal_Shape_double_t * pph`, `ppl_const_Octagonal_Shape_int8_t_t ph`)
[related]
- 10.41.2.59 `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_int8_t_with_complexity` (`ppl_Octagonal_Shape_double_t * pph`,
`ppl_const_Octagonal_Shape_int8_t_t ph`, `int complexity`) [related]

- 10.41.2.60 `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_long_double`
`(ppl_Octagonal_Shape_double_t * pph, ppl_const_Octagonal_Shape_long_double_t`
`ph)` [`related`]

- 10.41.2.61 `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_-`
`long_double_with_complexity (ppl_Octagonal_Shape_double_t * pph,`
`ppl_const_Octagonal_Shape_long_double_t ph, int complexity)` [`related`]

- 10.41.2.62 `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_mpq_class`
`(ppl_Octagonal_Shape_double_t * pph, ppl_const_Octagonal_Shape_mpq_class_t ph)`
`[related]`

- 10.41.2.63 `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_-`
`mpq_class_with_complexity (ppl_Octagonal_Shape_double_t * pph,`
`ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)` [`related`]

- 10.41.2.64 `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_mpz_class`
`(ppl_Octagonal_Shape_double_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph)`
`[related]`

- 10.41.2.65 `int ppl_new_Octagonal_Shape_double_from_Octagonal_Shape_-`
`mpz_class_with_complexity (ppl_Octagonal_Shape_double_t * pph,`
`ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)` [`related`]

- 10.41.2.66 `int ppl_new_Octagonal_Shape_double_from_Rational_Box`
`(ppl_Octagonal_Shape_double_t * pph, ppl_const_Rational_Box_t ph)` [`related`]

- 10.41.2.67 `int ppl_new_Octagonal_Shape_double_from_Rational_Box_with_complexity`
`(ppl_Octagonal_Shape_double_t * pph, ppl_const_Rational_Box_t ph, int complexity)`
`[related]`

- 10.41.2.68** `int ppl_new_Octagonal_Shape_double_from_space_dimension`
(`ppl_Octagonal_Shape_double_t * pph`, `ppl_dimension_type d`, `int empty`)
[related]
- 10.41.2.69** `int ppl_new_Octagonal_Shape_double_from_Uint16_Box` (`ppl_`
`Octagonal_Shape_double_t * pph`, `ppl_const_Uint16_Box_t ph`)
[related]
- 10.41.2.70** `int ppl_new_Octagonal_Shape_double_from_Uint16_Box_with_complexity`
(`ppl_Octagonal_Shape_double_t * pph`, `ppl_const_Uint16_Box_t ph`, `int complexity`)
[related]
- 10.41.2.71** `int ppl_new_Octagonal_Shape_double_from_Uint32_Box` (`ppl_`
`Octagonal_Shape_double_t * pph`, `ppl_const_Uint32_Box_t ph`)
[related]
- 10.41.2.72** `int ppl_new_Octagonal_Shape_double_from_Uint32_Box_with_complexity`
(`ppl_Octagonal_Shape_double_t * pph`, `ppl_const_Uint32_Box_t ph`, `int complexity`)
[related]
- 10.41.2.73** `int ppl_new_Octagonal_Shape_double_from_Uint64_Box` (`ppl_`
`Octagonal_Shape_double_t * pph`, `ppl_const_Uint64_Box_t ph`)
[related]
- 10.41.2.74** `int ppl_new_Octagonal_Shape_double_from_Uint64_Box_with_complexity`
(`ppl_Octagonal_Shape_double_t * pph`, `ppl_const_Uint64_Box_t ph`, `int complexity`)
[related]
- 10.41.2.75** `int ppl_new_Octagonal_Shape_double_from_Uint8_Box` (`ppl_`
`Octagonal_Shape_double_t * pph`, `ppl_const_Uint8_Box_t ph`)
[related]

- 10.41.2.76 `int ppl_new_Octagonal_Shape_double_from_Uint8_Box_with_complexity`
 (`ppl_Octagonal_Shape_double_t * pph`, `ppl_const_Uint8_Box_t ph`, `int complexity`)
 [related]
- 10.41.2.77 `int ppl_new_Octagonal_Shape_double_from_Z_Box` (`ppl_Octagonal_Shape_double_t`
 * `pph`, `ppl_const_Z_Box_t ph`) [related]
- 10.41.2.78 `int ppl_new_Octagonal_Shape_double_from_Z_Box_with_complexity`
 (`ppl_Octagonal_Shape_double_t * pph`, `ppl_const_Z_Box_t ph`, `int complexity`)
 [related]
- 10.41.2.79 `int ppl_new_Octagonal_Shape_double_recycle_Congruence_System`
 (`ppl_Octagonal_Shape_double_t * pph`, `ppl_Congruence_System_t cs`) [related]
- 10.41.2.80 `int ppl_new_Octagonal_Shape_double_recycle_Constraint_System`
 (`ppl_Octagonal_Shape_double_t * pph`, `ppl_Constraint_System_t cs`) [related]
- 10.41.2.81 `int ppl_new_Octagonal_Shape_double_recycle_Generator_System`
 (`ppl_Octagonal_Shape_double_t * pph`, `ppl_Generator_System_t cs`) [related]
- 10.41.2.82 `int ppl_Octagonal_Shape_double_add_congruence` (`ppl_Octagonal_Shape_double_t`
`ph`, `ppl_const_Congruence_t c`) [related]
- 10.41.2.83 `int ppl_Octagonal_Shape_double_add_congruences` (`ppl_Octagonal_Shape_double_t`
`ph`, `ppl_const_Congruence_System_t cs`) [related]
- 10.41.2.84 `int ppl_Octagonal_Shape_double_add_constraint` (`ppl_Octagonal_Shape_double_t ph`,
`ppl_const_Constraint_t c`) [related]

- 10.41.2.85** `int ppl_Octagonal_Shape_double_add_constraints (ppl_Octagonal_Shape_double_t ph, ppl_const_Constraint_System_t cs)` [**related**]
- 10.41.2.86** `int ppl_Octagonal_Shape_double_add_recycled_congruences (ppl_Octagonal_Shape_double_t ph, ppl_Congruence_System_t cs)` [**related**]
- 10.41.2.87** `int ppl_Octagonal_Shape_double_add_recycled_constraints (ppl_Octagonal_Shape_double_t ph, ppl_Constraint_System_t cs)` [**related**]
- 10.41.2.88** `int ppl_Octagonal_Shape_double_add_space_dimensions_and_embed (ppl_Octagonal_Shape_double_t ph, ppl_dimension_type d)` [**related**]
- 10.41.2.89** `int ppl_Octagonal_Shape_double_add_space_dimensions_and_project (ppl_Octagonal_Shape_double_t ph, ppl_dimension_type d)` [**related**]
- 10.41.2.90** `int ppl_Octagonal_Shape_double_affine_dimension (ppl_const_Octagonal_Shape_double_t ph, ppl_dimension_type * m)` [**related**]
- 10.41.2.91** `int ppl_Octagonal_Shape_double_affine_image (ppl_Octagonal_Shape_double_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.41.2.92** `int ppl_Octagonal_Shape_double_affine_preimage (ppl_Octagonal_Shape_double_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.41.2.93** `int ppl_Octagonal_Shape_double_BHMZ05_widening_assign (ppl_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y)` [**related**]

- 10.41.2.94 `int ppl_Octagonal_Shape_double_BHMZ05_widening_assign_with_tokens`
 (`ppl_Octagonal_Shape_double_t x`, `ppl_const_Octagonal_Shape_double_t y`, `unsigned * tp`) [`related`]
- 10.41.2.95 `int ppl_Octagonal_Shape_double_bounded_affine_image` (`ppl_Octagonal_Shape_double_t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t lb`, `ppl_const_Linear_Expression_t ub`, `ppl_const_Coefficient_t d`) [`related`]
- 10.41.2.96 `int ppl_Octagonal_Shape_double_bounded_affine_preimage` (`ppl_Octagonal_Shape_double_t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t lb`, `ppl_const_Linear_Expression_t ub`, `ppl_const_Coefficient_t d`) [`related`]
- 10.41.2.97 `int ppl_Octagonal_Shape_double_bounds_from_above` (`ppl_const_Octagonal_Shape_double_t ph`, `ppl_const_Linear_Expression_t le`) [`related`]
- 10.41.2.98 `int ppl_Octagonal_Shape_double_bounds_from_below` (`ppl_const_Octagonal_Shape_double_t ph`, `ppl_const_Linear_Expression_t le`) [`related`]
- 10.41.2.99 `int ppl_Octagonal_Shape_double_CC76_extrapolation_assign`
 (`ppl_Octagonal_Shape_double_t x`, `ppl_const_Octagonal_Shape_double_t y`) [`related`]
- 10.41.2.100 `int ppl_Octagonal_Shape_double_CC76_extrapolation_assign_with_tokens`
 (`ppl_Octagonal_Shape_double_t x`, `ppl_const_Octagonal_Shape_double_t y`, `unsigned * tp`) [`related`]
- 10.41.2.101 `int ppl_Octagonal_Shape_double_CC76_narrowing_assign` (`ppl_Octagonal_Shape_double_t x`, `ppl_const_Octagonal_Shape_double_t y`) [`related`]

- 10.41.2.102 `int ppl_Octagonal_Shape_double_concatenate_assign (ppl_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y)` [related]
- 10.41.2.103 `int ppl_Octagonal_Shape_double_constrains (ppl_Octagonal_Shape_double_t ph, ppl_dimension_type var)` [related]
- 10.41.2.104 `int ppl_Octagonal_Shape_double_contains_integer_point (ppl_const_Octagonal_Shape_double_t ph)` [related]
- 10.41.2.105 `int ppl_Octagonal_Shape_double_contains_Octagonal_Shape_double (ppl_const_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y)` [related]
- 10.41.2.106 `int ppl_Octagonal_Shape_double_difference_assign (ppl_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y)` [related]
- 10.41.2.107 `int ppl_Octagonal_Shape_double_drop_some_non_integer_points (ppl_Octagonal_Shape_double_t ph, int complexity)` [related]
- 10.41.2.108 `int ppl_Octagonal_Shape_double_drop_some_non_integer_points_2 (ppl_Octagonal_Shape_double_t ph, ppl_dimension_type ds[], size_t n, int complexity)` [related]
- 10.41.2.109 `int ppl_Octagonal_Shape_double_equals_Octagonal_Shape_double (ppl_const_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y)` [related]

- 10.41.2.110 `int ppl_Octagonal_Shape_double_expand_space_dimension (ppl_Octagonal_Shape_double_t ph, ppl_dimension_type d, ppl_dimension_type m)` `[related]`
- 10.41.2.111 `int ppl_Octagonal_Shape_double_external_memory_in_bytes (ppl_const_Octagonal_Shape_double_t ps, size_t * sz)` `[related]`
- 10.41.2.112 `int ppl_Octagonal_Shape_double_fold_space_dimensions (ppl_Octagonal_Shape_double_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` `[related]`
- 10.41.2.113 `int ppl_Octagonal_Shape_double_frequency (ppl_const_Octagonal_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)` `[related]`
- 10.41.2.114 `int ppl_Octagonal_Shape_double_generalized_affine_image (ppl_Octagonal_Shape_double_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` `[related]`
- 10.41.2.115 `int ppl_Octagonal_Shape_double_generalized_affine_image_lhs_rhs (ppl_Octagonal_Shape_double_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t rhs)` `[related]`
- 10.41.2.116 `int ppl_Octagonal_Shape_double_generalized_affine_preimage (ppl_Octagonal_Shape_double_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` `[related]`
- 10.41.2.117 `int ppl_Octagonal_Shape_double_generalized_affine_preimage_lhs_rhs (ppl_Octagonal_Shape_double_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t rhs)` `[related]`

- 10.41.2.118** `int ppl_Octagonal_Shape_double_get_congruences (ppl_const-Octagonal_Shape_double_t ph, ppl_const_Congruence_System_t * pcs)`
[related]
- 10.41.2.119** `int ppl_Octagonal_Shape_double_get_constraints (ppl_const-Octagonal_Shape_double_t ph, ppl_const_Constraint_System_t * pcs)`
[related]
- 10.41.2.120** `int ppl_Octagonal_Shape_double_get_minimized_congruences (ppl_const-Octagonal_Shape_double_t ph, ppl_const_Congruence_System_t * pcs)`
[related]
- 10.41.2.121** `int ppl_Octagonal_Shape_double_get_minimized_constraints (ppl_const-Octagonal_Shape_double_t ph, ppl_const_Constraint_System_t * pcs)`
[related]
- 10.41.2.122** `int ppl_Octagonal_Shape_double_intersection_assign (ppl_Octagonal_Shape_double_t x, ppl_const-Octagonal_Shape_double_t y)`
[related]
- 10.41.2.123** `int ppl_Octagonal_Shape_double_is_bounded (ppl_const-Octagonal_Shape_double_t ph)` [related]
- 10.41.2.124** `int ppl_Octagonal_Shape_double_is_discrete (ppl_const-Octagonal_Shape_double_t ph)` [related]
- 10.41.2.125** `int ppl_Octagonal_Shape_double_is_disjoint_from_Octagonal_Shape_double (ppl_const-Octagonal_Shape_double_t x, ppl_const-Octagonal_Shape_double_t y)`
[related]

- 10.41.2.126 `int ppl_Octagonal_Shape_double_is_empty (ppl_const_Octagonal_Shape_double_t ph)` [**related**]
- 10.41.2.127 `int ppl_Octagonal_Shape_double_is_topologically_closed (ppl_const_Octagonal_Shape_double_t ph)` [**related**]
- 10.41.2.128 `int ppl_Octagonal_Shape_double_is_universe (ppl_const_Octagonal_Shape_double_t ph)` [**related**]
- 10.41.2.129 `int ppl_Octagonal_Shape_double_limited_BHMZ05_extrapolation_assign (ppl_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y, ppl_const_Constraint_System_t cs)` [**related**]
- 10.41.2.130 `int ppl_Octagonal_Shape_double_limited_BHMZ05_extrapolation_assign_with_tokens (ppl_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y, ppl_const_Constraint_System_t cs, unsigned * tp)` [**related**]
- 10.41.2.131 `int ppl_Octagonal_Shape_double_limited_CC76_extrapolation_assign (ppl_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y, ppl_const_Constraint_System_t cs)` [**related**]
- 10.41.2.132 `int ppl_Octagonal_Shape_double_limited_CC76_extrapolation_assign_with_tokens (ppl_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y, ppl_const_Constraint_System_t cs, unsigned * tp)` [**related**]
- 10.41.2.133 `int ppl_Octagonal_Shape_double_linear_partition (ppl_const_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y, ppl_Octagonal_Shape_double_t * p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t * p_rest)` [**related**]

- 10.41.2.134 `int ppl_Octagonal_Shape_double_map_space_dimensions (ppl_Octagonal_Shape_double_t ph, ppl_dimension_type maps[], size_t n)` [related]
- 10.41.2.135 `int ppl_Octagonal_Shape_double_maximize (ppl_const_Octagonal_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)` [related]
- 10.41.2.136 `int ppl_Octagonal_Shape_double_maximize_with_point (ppl_const_Octagonal_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` [related]
- 10.41.2.137 `int ppl_Octagonal_Shape_double_minimize (ppl_const_Octagonal_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)` [related]
- 10.41.2.138 `int ppl_Octagonal_Shape_double_minimize_with_point (ppl_const_Octagonal_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` [related]
- 10.41.2.139 `int ppl_Octagonal_Shape_double_OK (ppl_const_Octagonal_Shape_double_t ph)` [related]
- 10.41.2.140 `int ppl_Octagonal_Shape_double_refine_with_congruence (ppl_Octagonal_Shape_double_t ph, ppl_const_Congruence_t c)` [related]
- 10.41.2.141 `int ppl_Octagonal_Shape_double_refine_with_congruences (ppl_Octagonal_Shape_double_t ph, ppl_const_Congruence_System_t cs)` [related]

- 10.41.2.142 `int ppl_Octagonal_Shape_double_refine_with_constraint`
`(ppl_Octagonal_Shape_double_t ph, ppl_const_Constraint_t c)` [`related`]
- 10.41.2.143 `int ppl_Octagonal_Shape_double_refine_with_constraints` (`ppl_`-
`Octagonal_Shape_double_t ph, ppl_const_Constraint_System_t cs`)
`[related]`
- 10.41.2.144 `int ppl_Octagonal_Shape_double_relation_with_Congruence`
`(ppl_const_Octagonal_Shape_double_t ph, ppl_const_Congruence_t c)` [`related`]
- 10.41.2.145 `int ppl_Octagonal_Shape_double_relation_with_Constraint`
`(ppl_const_Octagonal_Shape_double_t ph, ppl_const_Constraint_t c)` [`related`]
- 10.41.2.146 `int ppl_Octagonal_Shape_double_relation_with_Generator`
`(ppl_const_Octagonal_Shape_double_t ph, ppl_const_Generator_t c)` [`related`]
- 10.41.2.147 `int ppl_Octagonal_Shape_double_remove_higher_space_dimensions`
`(ppl_Octagonal_Shape_double_t ph, ppl_dimension_type d)` [`related`]
- 10.41.2.148 `int ppl_Octagonal_Shape_double_remove_space_dimensions`
`(ppl_Octagonal_Shape_double_t ph, ppl_dimension_type ds[], size_t n)`
`[related]`
- 10.41.2.149 `int ppl_Octagonal_Shape_double_simplify_using_context_assign`
`(ppl_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y)`
`[related]`
- 10.41.2.150 `int ppl_Octagonal_Shape_double_space_dimension` (`ppl_const_Octagonal_Shape_`-
`double_t ph, ppl_dimension_type * m`) [`related`]

- 10.41.2.151** `int ppl_Octagonal_Shape_double_strictly_contains_Octagonal_Shape_double`
(`ppl_const_Octagonal_Shape_double_t x`, `ppl_const_Octagonal_Shape_double_t y`)
[related]
- 10.41.2.152** `int ppl_Octagonal_Shape_double_time_elapse_assign` (`ppl_Octagonal_`
`Shape_double_t x`, `ppl_const_Octagonal_Shape_double_t y`)
[related]
- 10.41.2.153** `int ppl_Octagonal_Shape_double_topological_closure_assign`
(`ppl_Octagonal_Shape_double_t ph`) [related]
- 10.41.2.154** `int ppl_Octagonal_Shape_double_total_memory_in_bytes`
(`ppl_const_Octagonal_Shape_double_t ps`, `size_t * sz`) [related]
- 10.41.2.155** `int ppl_Octagonal_Shape_double_unconstrain_space_dimension`
(`ppl_Octagonal_Shape_double_t ph`, `ppl_dimension_type var`) [related]
- 10.41.2.156** `int ppl_Octagonal_Shape_double_unconstrain_space_dimensions`
(`ppl_Octagonal_Shape_double_t ph`, `ppl_dimension_type ds[]`, `size_t n`)
[related]
- 10.41.2.157** `int ppl_Octagonal_Shape_double_upper_bound_assign` (`ppl_`
`Octagonal_Shape_double_t x`, `ppl_const_Octagonal_Shape_double_t y`)
[related]
- 10.41.2.158** `int ppl_Octagonal_Shape_double_upper_bound_assign_if_exact`
(`ppl_Octagonal_Shape_double_t x`, `ppl_const_Octagonal_Shape_double_t y`)
[related]

- 10.41.2.159 `int ppl_Octagonal_Shape_double_widening_assign (ppl_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y) [related]`
- 10.41.2.160 `int ppl_Octagonal_Shape_double_widening_assign_with_tokens (ppl_Octagonal_Shape_double_t x, ppl_const_Octagonal_Shape_double_t y, unsigned * tp) [related]`
- 10.41.2.161 `int ppl_Octagonal_Shape_double_wrap_assign (ppl_Octagonal_Shape_double_t ph, ppl_dimension_type ds[], size_t n, enum ppl_enum_Bounded_Integer_Type_Width w, enum ppl_enum_Bounded_Integer_Type_Representation r, enum ppl_enum_Bounded_Integer_Type_Overflow o, const ppl_const_Constraint_System_t * pcs, unsigned complexity_threshold, int wrap_individually) [related]`
- 10.41.2.162 `int ppl_one_affine_ranking_function_MS_Octagonal_Shape_double (ppl_const_Octagonal_Shape_double_t pset, ppl_Generator_t point) [related]`
- 10.41.2.163 `int ppl_one_affine_ranking_function_MS_Octagonal_Shape_double_2 (ppl_const_Octagonal_Shape_double_t pset_before, ppl_const_Octagonal_Shape_double_t pset_after, ppl_Generator_t point) [related]`
- 10.41.2.164 `int ppl_one_affine_ranking_function_PR_Octagonal_Shape_double (ppl_const_Octagonal_Shape_double_t pset, ppl_Generator_t point) [related]`
- 10.41.2.165 `int ppl_one_affine_ranking_function_PR_Octagonal_Shape_double_2 (ppl_const_Octagonal_Shape_double_t pset_before, ppl_const_Octagonal_Shape_double_t pset_after, ppl_Generator_t point) [related]`
- 10.41.2.166 `int ppl_termination_test_MS_Octagonal_Shape_double (ppl_const_Octagonal_Shape_double_t pset) [related]`

10.41.2.167 `int ppl_termination_test_MS_Octagonal_Shape_double_2 (ppl_const_Octagonal_Shape_double_t pset_before, ppl_const_Octagonal_Shape_double_t pset_after)` **[related]**

10.41.2.168 `int ppl_termination_test_PR_Octagonal_Shape_double (ppl_const_Octagonal_Shape_double_t pset)` **[related]**

10.41.2.169 `int ppl_termination_test_PR_Octagonal_Shape_double_2 (ppl_const_Octagonal_Shape_double_t pset_before, ppl_const_Octagonal_Shape_double_t pset_after)` **[related]**

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.42 ppl_Octagonal_Shape_float_tag Interface Reference

Types and functions for [ppl_Octagonal_Shape_float_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Octagonal_Shape_float (ppl_const_Octagonal_Shape_float_t ph)`
- `int ppl_new_Octagonal_Shape_float_from_space_dimension (ppl_Octagonal_Shape_float_t *pph, ppl_dimension_type d, int empty)`
- `int ppl_new_Octagonal_Shape_float_from_Int8_Box (ppl_Octagonal_Shape_float_t *pph, ppl_const_Int8_Box_t ph)`
- `int ppl_new_Octagonal_Shape_float_from_Int16_Box (ppl_Octagonal_Shape_float_t *pph, ppl_const_Int16_Box_t ph)`
- `int ppl_new_Octagonal_Shape_float_from_Int32_Box (ppl_Octagonal_Shape_float_t *pph, ppl_const_Int32_Box_t ph)`
- `int ppl_new_Octagonal_Shape_float_from_Int64_Box (ppl_Octagonal_Shape_float_t *pph, ppl_const_Int64_Box_t ph)`
- `int ppl_new_Octagonal_Shape_float_from_Uint8_Box (ppl_Octagonal_Shape_float_t *pph, ppl_const_Uint8_Box_t ph)`
- `int ppl_new_Octagonal_Shape_float_from_Uint16_Box (ppl_Octagonal_Shape_float_t *pph, ppl_const_Uint16_Box_t ph)`
- `int ppl_new_Octagonal_Shape_float_from_Uint32_Box (ppl_Octagonal_Shape_float_t *pph, ppl_const_Uint32_Box_t ph)`
- `int ppl_new_Octagonal_Shape_float_from_Uint64_Box (ppl_Octagonal_Shape_float_t *pph, ppl_const_Uint64_Box_t ph)`

- int [ppl_new_Octagonal_Shape_float_from_Z_Box](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Z_Box_t ph)
- int [ppl_new_Octagonal_Shape_float_from_Rational_Box](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Rational_Box_t ph)
- int [ppl_new_Octagonal_Shape_float_from_BD_Shape_int8_t](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_BD_Shape_int8_t_t ph)
- int [ppl_new_Octagonal_Shape_float_from_BD_Shape_int16_t](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_BD_Shape_int16_t_t ph)
- int [ppl_new_Octagonal_Shape_float_from_BD_Shape_int32_t](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_BD_Shape_int32_t_t ph)
- int [ppl_new_Octagonal_Shape_float_from_BD_Shape_int64_t](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_BD_Shape_int64_t_t ph)
- int [ppl_new_Octagonal_Shape_float_from_BD_Shape_mpz_class](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_BD_Shape_mpz_class_t ph)
- int [ppl_new_Octagonal_Shape_float_from_BD_Shape_mpq_class](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_BD_Shape_mpq_class_t ph)
- int [ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_int8_t](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph)
- int [ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_int16_t](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph)
- int [ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_int32_t](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph)
- int [ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_int64_t](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph)
- int [ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_mpz_class](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph)
- int [ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_mpq_class](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph)
- int [ppl_new_Octagonal_Shape_float_from_C_Polyhedron](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Polyhedron_t ph)
- int [ppl_new_Octagonal_Shape_float_from_NNC_Polyhedron](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Polyhedron_t ph)
- int [ppl_new_Octagonal_Shape_float_from_Grid](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Grid_t ph)
- int [ppl_new_Octagonal_Shape_float_from_Float_Box](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Float_Box_t ph)
- int [ppl_new_Octagonal_Shape_float_from_BD_Shape_float](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_BD_Shape_float_t ph)
- int [ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_float](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Octagonal_Shape_float_t ph)
- int [ppl_new_Octagonal_Shape_float_from_Double_Box](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Double_Box_t ph)
- int [ppl_new_Octagonal_Shape_float_from_BD_Shape_double](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_BD_Shape_double_t ph)
- int [ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_double](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Octagonal_Shape_double_t ph)
- int [ppl_new_Octagonal_Shape_float_from_Long_Double_Box](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Long_Double_Box_t ph)
- int [ppl_new_Octagonal_Shape_float_from_BD_Shape_long_double](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_BD_Shape_long_double_t ph)
- int [ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_long_double](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Octagonal_Shape_long_double_t ph)

- int [ppl_new_Octagonal_Shape_float_from_Int8_Box_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Int8_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_float_from_Int16_Box_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Int16_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_float_from_Int32_Box_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Int32_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_float_from_Int64_Box_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Int64_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_float_from_Uint8_Box_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Uint8_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_float_from_Uint16_Box_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Uint16_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_float_from_Uint32_Box_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Uint32_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_float_from_Uint64_Box_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Uint64_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_float_from_Z_Box_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Z_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_float_from_Rational_Box_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Rational_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_float_from_BD_Shape_int8_t_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_float_from_BD_Shape_int16_t_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_float_from_BD_Shape_int32_t_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_float_from_BD_Shape_int64_t_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_float_from_BD_Shape_mpz_class_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_float_from_BD_Shape_mpq_class_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_int8_t_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_int16_t_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_int32_t_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_int64_t_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_mpz_class_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_mpq_class_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_float_from_C_Polyhedron_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_float_from_NNC_Polyhedron_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_float_from_Grid_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Grid_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_float_from_Float_Box_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Float_Box_t ph, int complexity)

- [int ppl_new_Octagonal_Shape_float_from_BD_Shape_float_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_BD_Shape_float_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_float_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_float_from_Double_Box_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Double_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_float_from_BD_Shape_double_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_BD_Shape_double_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_double_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_float_from_Long_Double_Box_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_float_from_BD_Shape_long_double_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_long_double_with_complexity](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_float_from_Constraint_System](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Constraint_System_t cs)
- [int ppl_new_Octagonal_Shape_float_from_Congruence_System](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Congruence_System_t cs)
- [int ppl_new_Octagonal_Shape_float_from_Generator_System](#) (ppl_Octagonal_Shape_float_t *pph, ppl_const_Generator_System_t cs)
- [int ppl_Octagonal_Shape_float_space_dimension](#) (ppl_const_Octagonal_Shape_float_t ph, [ppl_dimension_type](#) *m)
- [int ppl_Octagonal_Shape_float_affine_dimension](#) (ppl_const_Octagonal_Shape_float_t ph, [ppl_dimension_type](#) *m)
- [int ppl_Octagonal_Shape_float_relation_with_Constraint](#) (ppl_const_Octagonal_Shape_float_t ph, ppl_const_Constraint_t c)
- [int ppl_Octagonal_Shape_float_relation_with_Generator](#) (ppl_const_Octagonal_Shape_float_t ph, ppl_const_Generator_t c)
- [int ppl_Octagonal_Shape_float_relation_with_Congruence](#) (ppl_const_Octagonal_Shape_float_t ph, ppl_const_Congruence_t c)
- [int ppl_Octagonal_Shape_float_get_constraints](#) (ppl_const_Octagonal_Shape_float_t ph, ppl_const_Constraint_System_t *pcs)
- [int ppl_Octagonal_Shape_float_get_congruences](#) (ppl_const_Octagonal_Shape_float_t ph, ppl_const_Congruence_System_t *pcs)
- [int ppl_Octagonal_Shape_float_get_minimized_constraints](#) (ppl_const_Octagonal_Shape_float_t ph, ppl_const_Constraint_System_t *pcs)
- [int ppl_Octagonal_Shape_float_get_minimized_congruences](#) (ppl_const_Octagonal_Shape_float_t ph, ppl_const_Congruence_System_t *pcs)
- [int ppl_Octagonal_Shape_float_is_empty](#) (ppl_const_Octagonal_Shape_float_t ph)
- [int ppl_Octagonal_Shape_float_is_universe](#) (ppl_const_Octagonal_Shape_float_t ph)
- [int ppl_Octagonal_Shape_float_is_bounded](#) (ppl_const_Octagonal_Shape_float_t ph)
- [int ppl_Octagonal_Shape_float_contains_integer_point](#) (ppl_const_Octagonal_Shape_float_t ph)
- [int ppl_Octagonal_Shape_float_is_topologically_closed](#) (ppl_const_Octagonal_Shape_float_t ph)
- [int ppl_Octagonal_Shape_float_is_discrete](#) (ppl_const_Octagonal_Shape_float_t ph)
- [int ppl_Octagonal_Shape_float_topological_closure_assign](#) (ppl_Octagonal_Shape_float_t ph)
- [int ppl_Octagonal_Shape_float_bounds_from_above](#) (ppl_const_Octagonal_Shape_float_t ph, ppl_const_Linear_Expression_t le)
- [int ppl_Octagonal_Shape_float_bounds_from_below](#) (ppl_const_Octagonal_Shape_float_t ph, ppl_const_Linear_Expression_t le)

- int [ppl_Octagonal_Shape_float_maximize](#) (ppl_const_Octagonal_Shape_float_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Octagonal_Shape_float_minimize](#) (ppl_const_Octagonal_Shape_float_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Octagonal_Shape_float_maximize_with_point](#) (ppl_const_Octagonal_Shape_float_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Octagonal_Shape_float_minimize_with_point](#) (ppl_const_Octagonal_Shape_float_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Octagonal_Shape_float_frequency](#) (ppl_const_Octagonal_Shape_float_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)
- int [ppl_Octagonal_Shape_float_contains_Octagonal_Shape_float](#) (ppl_const_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y)
- int [ppl_Octagonal_Shape_float_strictly_contains_Octagonal_Shape_float](#) (ppl_const_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y)
- int [ppl_Octagonal_Shape_float_is_disjoint_from_Octagonal_Shape_float](#) (ppl_const_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y)
- int [ppl_Octagonal_Shape_float_equals_Octagonal_Shape_float](#) (ppl_const_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y)
- int [ppl_Octagonal_Shape_float_OK](#) (ppl_const_Octagonal_Shape_float_t ph)
- int [ppl_Octagonal_Shape_float_add_constraint](#) (ppl_Octagonal_Shape_float_t ph, ppl_const_Constraint_t c)
- int [ppl_Octagonal_Shape_float_add_congruence](#) (ppl_Octagonal_Shape_float_t ph, ppl_const_Congruence_t c)
- int [ppl_Octagonal_Shape_float_add_constraints](#) (ppl_Octagonal_Shape_float_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Octagonal_Shape_float_add_congruences](#) (ppl_Octagonal_Shape_float_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Octagonal_Shape_float_refine_with_constraint](#) (ppl_Octagonal_Shape_float_t ph, ppl_const_Constraint_t c)
- int [ppl_Octagonal_Shape_float_refine_with_congruence](#) (ppl_Octagonal_Shape_float_t ph, ppl_const_Congruence_t c)
- int [ppl_Octagonal_Shape_float_refine_with_constraints](#) (ppl_Octagonal_Shape_float_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Octagonal_Shape_float_refine_with_congruences](#) (ppl_Octagonal_Shape_float_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Octagonal_Shape_float_intersection_assign](#) (ppl_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y)
- int [ppl_Octagonal_Shape_float_upper_bound_assign](#) (ppl_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y)
- int [ppl_Octagonal_Shape_float_difference_assign](#) (ppl_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y)
- int [ppl_Octagonal_Shape_float_concatenate_assign](#) (ppl_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y)
- int [ppl_Octagonal_Shape_float_time_elapse_assign](#) (ppl_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y)
- int [ppl_Octagonal_Shape_float_upper_bound_assign_if_exact](#) (ppl_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y)
- int [ppl_Octagonal_Shape_float_simplify_using_context_assign](#) (ppl_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y)

- `int ppl_Octagonal_Shape_float_constrains` (`ppl_Octagonal_Shape_float_t` ph, `ppl_dimension_type` var)
- `int ppl_Octagonal_Shape_float_unconstrain_space_dimension` (`ppl_Octagonal_Shape_float_t` ph, `ppl_dimension_type` var)
- `int ppl_Octagonal_Shape_float_unconstrain_space_dimensions` (`ppl_Octagonal_Shape_float_t` ph, `ppl_dimension_type` ds[], `size_t` n)
- `int ppl_Octagonal_Shape_float_affine_image` (`ppl_Octagonal_Shape_float_t` ph, `ppl_dimension_type` var, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- `int ppl_Octagonal_Shape_float_affine_preimage` (`ppl_Octagonal_Shape_float_t` ph, `ppl_dimension_type` var, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- `int ppl_Octagonal_Shape_float_bounded_affine_image` (`ppl_Octagonal_Shape_float_t` ph, `ppl_dimension_type` var, `ppl_const_Linear_Expression_t` lb, `ppl_const_Linear_Expression_t` ub, `ppl_const_Coefficient_t` d)
- `int ppl_Octagonal_Shape_float_bounded_affine_preimage` (`ppl_Octagonal_Shape_float_t` ph, `ppl_dimension_type` var, `ppl_const_Linear_Expression_t` lb, `ppl_const_Linear_Expression_t` ub, `ppl_const_Coefficient_t` d)
- `int ppl_Octagonal_Shape_float_generalized_affine_image` (`ppl_Octagonal_Shape_float_t` ph, `ppl_dimension_type` var, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- `int ppl_Octagonal_Shape_float_generalized_affine_preimage` (`ppl_Octagonal_Shape_float_t` ph, `ppl_dimension_type` var, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- `int ppl_Octagonal_Shape_float_generalized_affine_image_lhs_rhs` (`ppl_Octagonal_Shape_float_t` ph, `ppl_const_Linear_Expression_t` lhs, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` rhs)
- `int ppl_Octagonal_Shape_float_generalized_affine_preimage_lhs_rhs` (`ppl_Octagonal_Shape_float_t` ph, `ppl_const_Linear_Expression_t` lhs, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` rhs)
- `int ppl_Octagonal_Shape_float_add_space_dimensions_and_embed` (`ppl_Octagonal_Shape_float_t` ph, `ppl_dimension_type` d)
- `int ppl_Octagonal_Shape_float_add_space_dimensions_and_project` (`ppl_Octagonal_Shape_float_t` ph, `ppl_dimension_type` d)
- `int ppl_Octagonal_Shape_float_remove_space_dimensions` (`ppl_Octagonal_Shape_float_t` ph, `ppl_dimension_type` ds[], `size_t` n)
- `int ppl_Octagonal_Shape_float_remove_higher_space_dimensions` (`ppl_Octagonal_Shape_float_t` ph, `ppl_dimension_type` d)
- `int ppl_Octagonal_Shape_float_expand_space_dimension` (`ppl_Octagonal_Shape_float_t` ph, `ppl_dimension_type` d, `ppl_dimension_type` m)
- `int ppl_Octagonal_Shape_float_fold_space_dimensions` (`ppl_Octagonal_Shape_float_t` ph, `ppl_dimension_type` ds[], `size_t` n, `ppl_dimension_type` d)
- `int ppl_Octagonal_Shape_float_map_space_dimensions` (`ppl_Octagonal_Shape_float_t` ph, `ppl_dimension_type` maps[], `size_t` n)
- `int ppl_Octagonal_Shape_float_drop_some_non_integer_points` (`ppl_Octagonal_Shape_float_t` ph, `int` complexity)
- `int ppl_Octagonal_Shape_float_drop_some_non_integer_points_2` (`ppl_Octagonal_Shape_float_t` ph, `ppl_dimension_type` ds[], `size_t` n, `int` complexity)
- `int ppl_Octagonal_Shape_float_external_memory_in_bytes` (`ppl_const_Octagonal_Shape_float_t` ps, `size_t` *sz)
- `int ppl_Octagonal_Shape_float_total_memory_in_bytes` (`ppl_const_Octagonal_Shape_float_t` ps, `size_t` *sz)
- `int ppl_Octagonal_Shape_float_BHMZ05_widening_assign_with_tokens` (`ppl_Octagonal_Shape_float_t` x, `ppl_const_Octagonal_Shape_float_t` y, `unsigned` *tp)

- int [ppl_Octagonal_Shape_float_BHMZ05_widening_assign](#) (ppl_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y)
- int [ppl_Octagonal_Shape_float_widening_assign_with_tokens](#) (ppl_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y, unsigned *tp)
- int [ppl_Octagonal_Shape_float_widening_assign](#) (ppl_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y)
- int [ppl_Octagonal_Shape_float_limited_BHMZ05_extrapolation_assign_with_tokens](#) (ppl_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- int [ppl_Octagonal_Shape_float_limited_CC76_extrapolation_assign_with_tokens](#) (ppl_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- int [ppl_Octagonal_Shape_float_limited_BHMZ05_extrapolation_assign](#) (ppl_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y, ppl_const_Constraint_System_t cs)
- int [ppl_Octagonal_Shape_float_limited_CC76_extrapolation_assign](#) (ppl_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y, ppl_const_Constraint_System_t cs)
- int [ppl_Octagonal_Shape_float_CC76_extrapolation_assign_with_tokens](#) (ppl_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y, unsigned *tp)
- int [ppl_Octagonal_Shape_float_CC76_extrapolation_assign](#) (ppl_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y)
- int [ppl_Octagonal_Shape_float_CC76_narrowing_assign](#) (ppl_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y)
- int [ppl_Octagonal_Shape_float_linear_partition](#) (ppl_const_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y, ppl_Octagonal_Shape_float_t *p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest)
- int [ppl_Octagonal_Shape_float_wrap_assign](#) (ppl_Octagonal_Shape_float_t ph, [ppl_dimension_type](#) ds[], size_t n, enum [ppl_enum_Bounded_Integer_Type_Width](#) w, enum [ppl_enum_Bounded_Integer_Type_Representation](#) r, enum [ppl_enum_Bounded_Integer_Type_Overflow](#) o, const ppl_const_Constraint_System_t *pcs, unsigned complexity_threshold, int wrap_individually)
- int [ppl_new_Octagonal_Shape_float_recycle_Constraint_System](#) (ppl_Octagonal_Shape_float_t *pph, ppl_Constraint_System_t cs)
- int [ppl_new_Octagonal_Shape_float_recycle_Congruence_System](#) (ppl_Octagonal_Shape_float_t *pph, ppl_Congruence_System_t cs)
- int [ppl_new_Octagonal_Shape_float_recycle_Generator_System](#) (ppl_Octagonal_Shape_float_t *pph, ppl_Generator_System_t cs)
- int [ppl_assign_Octagonal_Shape_float_from_Octagonal_Shape_float](#) (ppl_Octagonal_Shape_float_t dst, ppl_const_Octagonal_Shape_float_t src)
- int [ppl_Octagonal_Shape_float_add_recycled_constraints](#) (ppl_Octagonal_Shape_float_t ph, ppl_Constraint_System_t cs)
- int [ppl_Octagonal_Shape_float_add_recycled_congruences](#) (ppl_Octagonal_Shape_float_t ph, ppl_Congruence_System_t cs)
- int [ppl_termination_test_MS_Octagonal_Shape_float](#) (ppl_const_Octagonal_Shape_float_t pset)
- int [ppl_termination_test_PR_Octagonal_Shape_float](#) (ppl_const_Octagonal_Shape_float_t pset)
- int [ppl_one_affine_ranking_function_MS_Octagonal_Shape_float](#) (ppl_const_Octagonal_Shape_float_t pset, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_Octagonal_Shape_float](#) (ppl_const_Octagonal_Shape_float_t pset, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_Octagonal_Shape_float](#) (ppl_const_Octagonal_Shape_float_t pset, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_Octagonal_Shape_float](#) (ppl_const_Octagonal_Shape_float_t pset, ppl_Polyhedron_t ph)

- `int ppl_termination_test_MS_Octagonal_Shape_float_2` (`ppl_const_Octagonal_Shape_float_t pset_before`, `ppl_const_Octagonal_Shape_float_t pset_after`)
- `int ppl_termination_test_PR_Octagonal_Shape_float_2` (`ppl_const_Octagonal_Shape_float_t pset_before`, `ppl_const_Octagonal_Shape_float_t pset_after`)
- `int ppl_one_affine_ranking_function_MS_Octagonal_Shape_float_2` (`ppl_const_Octagonal_Shape_float_t pset_before`, `ppl_const_Octagonal_Shape_float_t pset_after`, `ppl_Generator_t point`)
- `int ppl_one_affine_ranking_function_PR_Octagonal_Shape_float_2` (`ppl_const_Octagonal_Shape_float_t pset_before`, `ppl_const_Octagonal_Shape_float_t pset_after`, `ppl_Generator_t point`)
- `int ppl_all_affine_ranking_functions_MS_Octagonal_Shape_float_2` (`ppl_const_Octagonal_Shape_float_t pset_before`, `ppl_const_Octagonal_Shape_float_t pset_after`, `ppl_Polyhedron_t ph`)
- `int ppl_all_affine_ranking_functions_PR_Octagonal_Shape_float_2` (`ppl_const_Octagonal_Shape_float_t pset_before`, `ppl_const_Octagonal_Shape_float_t pset_after`, `ppl_Polyhedron_t ph`)

10.42.1 Detailed Description

Types and functions for `ppl_Octagonal_Shape_float_tag`.

10.42.2 Friends And Related Function Documentation

- 10.42.2.1** `int ppl_all_affine_ranking_functions_MS_Octagonal_Shape_float`
(`ppl_const_Octagonal_Shape_float_t pset`, `ppl_Polyhedron_t ph`) [**related**]
- 10.42.2.2** `int ppl_all_affine_ranking_functions_MS_Octagonal_Shape_float_2`
(`ppl_const_Octagonal_Shape_float_t pset_before`, `ppl_const_Octagonal_Shape_float_t pset_after`, `ppl_Polyhedron_t ph`) [**related**]
- 10.42.2.3** `int ppl_all_affine_ranking_functions_PR_Octagonal_Shape_float`
(`ppl_const_Octagonal_Shape_float_t pset`, `ppl_Polyhedron_t ph`) [**related**]
- 10.42.2.4** `int ppl_all_affine_ranking_functions_PR_Octagonal_Shape_float_2`
(`ppl_const_Octagonal_Shape_float_t pset_before`, `ppl_const_Octagonal_Shape_float_t pset_after`, `ppl_Polyhedron_t ph`) [**related**]
- 10.42.2.5** `int ppl_assign_Octagonal_Shape_float_from_Octagonal_Shape_float`
(`ppl_Octagonal_Shape_float_t dst`, `ppl_const_Octagonal_Shape_float_t src`)
[**related**]

- 10.42.2.6** `int ppl_delete_Octagonal_Shape_float (ppl_const_Octagonal_Shape_float_t ph)`
[related]
- 10.42.2.7** `int ppl_new_Octagonal_Shape_float_from_BD_Shape_double`
(`ppl_Octagonal_Shape_float_t * pph`, `ppl_const_BD_Shape_double_t ph`) [related]
- 10.42.2.8** `int ppl_new_Octagonal_Shape_float_from_BD_Shape_double_with_complexity`
(`ppl_Octagonal_Shape_float_t * pph`, `ppl_const_BD_Shape_double_t ph`, `int complexity`)
[related]
- 10.42.2.9** `int ppl_new_Octagonal_Shape_float_from_BD_Shape_float (ppl_`
`Octagonal_Shape_float_t * pph`, `ppl_const_BD_Shape_float_t ph`)
[related]
- 10.42.2.10** `int ppl_new_Octagonal_Shape_float_from_BD_Shape_float_with_complexity`
(`ppl_Octagonal_Shape_float_t * pph`, `ppl_const_BD_Shape_float_t ph`, `int complexity`)
[related]
- 10.42.2.11** `int ppl_new_Octagonal_Shape_float_from_BD_Shape_int16_t`
(`ppl_Octagonal_Shape_float_t * pph`, `ppl_const_BD_Shape_int16_t_t ph`)
[related]
- 10.42.2.12** `int ppl_new_Octagonal_Shape_float_from_BD_Shape_int16_t_with_complexity`
(`ppl_Octagonal_Shape_float_t * pph`, `ppl_const_BD_Shape_int16_t_t ph`, `int`
`complexity`) [related]
- 10.42.2.13** `int ppl_new_Octagonal_Shape_float_from_BD_Shape_int32_t`
(`ppl_Octagonal_Shape_float_t * pph`, `ppl_const_BD_Shape_int32_t_t ph`)
[related]

- 10.42.2.14 `int ppl_new_Octagonal_Shape_float_from_BD_Shape_int32_t_with_complexity`
 (`ppl_Octagonal_Shape_float_t * pph`, `ppl_const_BD_Shape_int32_t_t ph`, `int complexity`) [`related`]
- 10.42.2.15 `int ppl_new_Octagonal_Shape_float_from_BD_Shape_int64_t`
 (`ppl_Octagonal_Shape_float_t * pph`, `ppl_const_BD_Shape_int64_t_t ph`)
 [`related`]
- 10.42.2.16 `int ppl_new_Octagonal_Shape_float_from_BD_Shape_int64_t_with_complexity`
 (`ppl_Octagonal_Shape_float_t * pph`, `ppl_const_BD_Shape_int64_t_t ph`, `int complexity`) [`related`]
- 10.42.2.17 `int ppl_new_Octagonal_Shape_float_from_BD_Shape_int8_t`
 (`ppl_Octagonal_Shape_float_t * pph`, `ppl_const_BD_Shape_int8_t_t ph`) [`related`]
- 10.42.2.18 `int ppl_new_Octagonal_Shape_float_from_BD_Shape_int8_t_with_complexity`
 (`ppl_Octagonal_Shape_float_t * pph`, `ppl_const_BD_Shape_int8_t_t ph`, `int complexity`) [`related`]
- 10.42.2.19 `int ppl_new_Octagonal_Shape_float_from_BD_Shape_long_double`
 (`ppl_Octagonal_Shape_float_t * pph`, `ppl_const_BD_Shape_long_double_t ph`)
 [`related`]
- 10.42.2.20 `int ppl_new_Octagonal_Shape_float_from_BD_Shape_long_double_with_complexity`
 (`ppl_Octagonal_Shape_float_t * pph`, `ppl_const_BD_Shape_long_double_t ph`, `int complexity`) [`related`]
- 10.42.2.21 `int ppl_new_Octagonal_Shape_float_from_BD_Shape_mpq_class`
 (`ppl_Octagonal_Shape_float_t * pph`, `ppl_const_BD_Shape_mpq_class_t ph`)
 [`related`]

- 10.42.2.22** `int ppl_new_Octagonal_Shape_float_from_BD_Shape_mpq_class_with_complexity`
 (`ppl_Octagonal_Shape_float_t * pph`, `ppl_const_BD_Shape_mpq_class_t ph`, `int complexity`) [`related`]
- 10.42.2.23** `int ppl_new_Octagonal_Shape_float_from_BD_Shape_mpz_class`
 (`ppl_Octagonal_Shape_float_t * pph`, `ppl_const_BD_Shape_mpz_class_t ph`)
 [`related`]
- 10.42.2.24** `int ppl_new_Octagonal_Shape_float_from_BD_Shape_mpz_class_with_complexity`
 (`ppl_Octagonal_Shape_float_t * pph`, `ppl_const_BD_Shape_mpz_class_t ph`, `int complexity`) [`related`]
- 10.42.2.25** `int ppl_new_Octagonal_Shape_float_from_C_Polyhedron`
 (`ppl_Octagonal_Shape_float_t * pph`, `ppl_const_Polyhedron_t ph`) [`related`]
- 10.42.2.26** `int ppl_new_Octagonal_Shape_float_from_C_Polyhedron_with_complexity`
 (`ppl_Octagonal_Shape_float_t * pph`, `ppl_const_Polyhedron_t ph`, `int complexity`)
 [`related`]
- 10.42.2.27** `int ppl_new_Octagonal_Shape_float_from_Congruence_System`
 (`ppl_Octagonal_Shape_float_t * pph`, `ppl_const_Congruence_System_t cs`)
 [`related`]
- 10.42.2.28** `int ppl_new_Octagonal_Shape_float_from_Constraint_System`
 (`ppl_Octagonal_Shape_float_t * pph`, `ppl_const_Constraint_System_t cs`)
 [`related`]
- 10.42.2.29** `int ppl_new_Octagonal_Shape_float_from_Double_Box` (`ppl_Octagonal_Shape_float_t * pph`, `ppl_const_Double_Box_t ph`) [`related`]

- 10.42.2.30 `int ppl_new_Octagonal_Shape_float_from_Double_Box_with_complexity`
(`ppl_Octagonal_Shape_float_t * pph`, `ppl_const_Double_Box_t ph`, `int complexity`)
[related]
- 10.42.2.31 `int ppl_new_Octagonal_Shape_float_from_Float_Box` (`ppl_Octagonal_Shape_float_t *`
`pph`, `ppl_const_Float_Box_t ph`) [related]
- 10.42.2.32 `int ppl_new_Octagonal_Shape_float_from_Float_Box_with_complexity`
(`ppl_Octagonal_Shape_float_t * pph`, `ppl_const_Float_Box_t ph`, `int complexity`)
[related]
- 10.42.2.33 `int ppl_new_Octagonal_Shape_float_from_Generator_System`
(`ppl_Octagonal_Shape_float_t * pph`, `ppl_const_Generator_System_t cs`)
[related]
- 10.42.2.34 `int ppl_new_Octagonal_Shape_float_from_Grid` (`ppl_Octagonal_Shape_float_t * pph`,
`ppl_const_Grid_t ph`) [related]
- 10.42.2.35 `int ppl_new_Octagonal_Shape_float_from_Grid_with_complexity`
(`ppl_Octagonal_Shape_float_t * pph`, `ppl_const_Grid_t ph`, `int complexity`)
[related]
- 10.42.2.36 `int ppl_new_Octagonal_Shape_float_from_Int16_Box` (`ppl_Octagonal_Shape_float_t *`
`pph`, `ppl_const_Int16_Box_t ph`) [related]
- 10.42.2.37 `int ppl_new_Octagonal_Shape_float_from_Int16_Box_with_complexity`
(`ppl_Octagonal_Shape_float_t * pph`, `ppl_const_Int16_Box_t ph`, `int complexity`)
[related]

10.42.2.38 `int ppl_new_Octagonal_Shape_float_from_Int32_Box (ppl_Octagonal_Shape_float_t * pph, ppl_const_Int32_Box_t ph)` [**related**]

10.42.2.39 `int ppl_new_Octagonal_Shape_float_from_Int32_Box_with_complexity (ppl_Octagonal_Shape_float_t * pph, ppl_const_Int32_Box_t ph, int complexity)` [**related**]

10.42.2.40 `int ppl_new_Octagonal_Shape_float_from_Int64_Box (ppl_Octagonal_Shape_float_t * pph, ppl_const_Int64_Box_t ph)` [**related**]

10.42.2.41 `int ppl_new_Octagonal_Shape_float_from_Int64_Box_with_complexity (ppl_Octagonal_Shape_float_t * pph, ppl_const_Int64_Box_t ph, int complexity)` [**related**]

10.42.2.42 `int ppl_new_Octagonal_Shape_float_from_Int8_Box (ppl_Octagonal_Shape_float_t * pph, ppl_const_Int8_Box_t ph)` [**related**]

10.42.2.43 `int ppl_new_Octagonal_Shape_float_from_Int8_Box_with_complexity (ppl_Octagonal_Shape_float_t * pph, ppl_const_Int8_Box_t ph, int complexity)` [**related**]

10.42.2.44 `int ppl_new_Octagonal_Shape_float_from_Long_Double_Box (ppl_Octagonal_Shape_float_t * pph, ppl_const_Long_Double_Box_t ph)` [**related**]

10.42.2.45 `int ppl_new_Octagonal_Shape_float_from_Long_Double_Box_with_complexity (ppl_Octagonal_Shape_float_t * pph, ppl_const_Long_Double_Box_t ph, int complexity)` [**related**]

- 10.42.2.46 `int ppl_new_Octagonal_Shape_float_from_NNC_Polyhedron`
(`ppl_Octagonal_Shape_float_t *pph`, `ppl_const_Polyhedron_t ph`) [`related`]
- 10.42.2.47 `int ppl_new_Octagonal_Shape_float_from_NNC_Polyhedron_with_complexity`
(`ppl_Octagonal_Shape_float_t *pph`, `ppl_const_Polyhedron_t ph`, `int complexity`)
[`related`]
- 10.42.2.48 `int ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_double`
(`ppl_Octagonal_Shape_float_t *pph`, `ppl_const_Octagonal_Shape_double_t ph`)
[`related`]
- 10.42.2.49 `int ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_double_with_complexity`
(`ppl_Octagonal_Shape_float_t *pph`, `ppl_const_Octagonal_Shape_double_t ph`, `int complexity`) [`related`]
- 10.42.2.50 `int ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_float`
(`ppl_Octagonal_Shape_float_t *pph`, `ppl_const_Octagonal_Shape_float_t ph`)
[`related`]
- 10.42.2.51 `int ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_float_with_complexity`
(`ppl_Octagonal_Shape_float_t *pph`, `ppl_const_Octagonal_Shape_float_t ph`, `int complexity`) [`related`]
- 10.42.2.52 `int ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_int16_t`
(`ppl_Octagonal_Shape_float_t *pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`)
[`related`]
- 10.42.2.53 `int ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_int16_t_with_complexity`
(`ppl_Octagonal_Shape_float_t *pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`, `int complexity`) [`related`]

- 10.42.2.54 `int ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_int32_t`
(`ppl_Octagonal_Shape_float_t *pph`, `ppl_const_Octagonal_Shape_int32_t_t ph`)
[related]
- 10.42.2.55 `int ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_int32_t_with_complexity`
(`ppl_Octagonal_Shape_float_t *pph`, `ppl_const_Octagonal_Shape_int32_t_t ph`, `int complexity`) [related]
- 10.42.2.56 `int ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_int64_t`
(`ppl_Octagonal_Shape_float_t *pph`, `ppl_const_Octagonal_Shape_int64_t_t ph`)
[related]
- 10.42.2.57 `int ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_int64_t_with_complexity`
(`ppl_Octagonal_Shape_float_t *pph`, `ppl_const_Octagonal_Shape_int64_t_t ph`, `int complexity`) [related]
- 10.42.2.58 `int ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_int8_t`
(`ppl_Octagonal_Shape_float_t *pph`, `ppl_const_Octagonal_Shape_int8_t_t ph`)
[related]
- 10.42.2.59 `int ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_int8_t_with_complexity`
(`ppl_Octagonal_Shape_float_t *pph`, `ppl_const_Octagonal_Shape_int8_t_t ph`, `int complexity`) [related]
- 10.42.2.60 `int ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_long_double`
(`ppl_Octagonal_Shape_float_t *pph`, `ppl_const_Octagonal_Shape_long_double_t ph`)
[related]
- 10.42.2.61 `int ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_-`
`long_double_with_complexity` (`ppl_Octagonal_Shape_float_t *pph`,
`ppl_const_Octagonal_Shape_long_double_t ph`, `int complexity`) [related]

- 10.42.2.62 `int ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_mpq_class`
`(ppl_Octagonal_Shape_float_t * pph, ppl_const_Octagonal_Shape_mpq_class_t ph)`
`[related]`
- 10.42.2.63 `int ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_-`
`mpq_class_with_complexity (ppl_Octagonal_Shape_float_t * pph,`
`ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)` `[related]`
- 10.42.2.64 `int ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_mpz_class`
`(ppl_Octagonal_Shape_float_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph)`
`[related]`
- 10.42.2.65 `int ppl_new_Octagonal_Shape_float_from_Octagonal_Shape_-`
`mpz_class_with_complexity (ppl_Octagonal_Shape_float_t * pph,`
`ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)` `[related]`
- 10.42.2.66 `int ppl_new_Octagonal_Shape_float_from_Rational_Box (ppl_-`
`Octagonal_Shape_float_t * pph, ppl_const_Rational_Box_t ph)`
`[related]`
- 10.42.2.67 `int ppl_new_Octagonal_Shape_float_from_Rational_Box_with_complexity`
`(ppl_Octagonal_Shape_float_t * pph, ppl_const_Rational_Box_t ph, int complexity)`
`[related]`
- 10.42.2.68 `int ppl_new_Octagonal_Shape_float_from_space_dimension`
`(ppl_Octagonal_Shape_float_t * pph, ppl_dimension_type d, int empty)` `[related]`
- 10.42.2.69 `int ppl_new_Octagonal_Shape_float_from_Uint16_Box (ppl_Octagonal_Shape_float_t`
`* pph, ppl_const_Uint16_Box_t ph)` `[related]`

- 10.42.2.70** `int ppl_new_Octagonal_Shape_float_from_Uint16_Box_with_complexity`
(`ppl_Octagonal_Shape_float_t *pph`, `ppl_const_Uint16_Box_t ph`, `int complexity`)
[related]
- 10.42.2.71** `int ppl_new_Octagonal_Shape_float_from_Uint32_Box` (`ppl_Octagonal_Shape_float_t`
`*pph`, `ppl_const_Uint32_Box_t ph`) [related]
- 10.42.2.72** `int ppl_new_Octagonal_Shape_float_from_Uint32_Box_with_complexity`
(`ppl_Octagonal_Shape_float_t *pph`, `ppl_const_Uint32_Box_t ph`, `int complexity`)
[related]
- 10.42.2.73** `int ppl_new_Octagonal_Shape_float_from_Uint64_Box` (`ppl_Octagonal_Shape_float_t`
`*pph`, `ppl_const_Uint64_Box_t ph`) [related]
- 10.42.2.74** `int ppl_new_Octagonal_Shape_float_from_Uint64_Box_with_complexity`
(`ppl_Octagonal_Shape_float_t *pph`, `ppl_const_Uint64_Box_t ph`, `int complexity`)
[related]
- 10.42.2.75** `int ppl_new_Octagonal_Shape_float_from_Uint8_Box` (`ppl_Octagonal_Shape_float_t *`
`pph`, `ppl_const_Uint8_Box_t ph`) [related]
- 10.42.2.76** `int ppl_new_Octagonal_Shape_float_from_Uint8_Box_with_complexity`
(`ppl_Octagonal_Shape_float_t *pph`, `ppl_const_Uint8_Box_t ph`, `int complexity`)
[related]
- 10.42.2.77** `int ppl_new_Octagonal_Shape_float_from_Z_Box` (`ppl_Octagonal_Shape_float_t *`
`pph`, `ppl_const_Z_Box_t ph`) [related]

- 10.42.2.78 `int ppl_new_Octagonal_Shape_float_from_Z_Box_with_complexity`
 (`ppl_Octagonal_Shape_float_t *pph`, `ppl_const_Z_Box_t ph`, `int complexity`)
 [related]
- 10.42.2.79 `int ppl_new_Octagonal_Shape_float_recycle_Congruence_System`
 (`ppl_Octagonal_Shape_float_t *pph`, `ppl_Congruence_System_t cs`) [related]
- 10.42.2.80 `int ppl_new_Octagonal_Shape_float_recycle_Constraint_System`
 (`ppl_Octagonal_Shape_float_t *pph`, `ppl_Constraint_System_t cs`) [related]
- 10.42.2.81 `int ppl_new_Octagonal_Shape_float_recycle_Generator_System`
 (`ppl_Octagonal_Shape_float_t *pph`, `ppl_Generator_System_t cs`) [related]
- 10.42.2.82 `int ppl_Octagonal_Shape_float_add_congruence` (`ppl_Octagonal_Shape_float_t ph`,
`ppl_const_Congruence_t c`) [related]
- 10.42.2.83 `int ppl_Octagonal_Shape_float_add_congruences` (`ppl_Octagonal_Shape_float_t ph`,
`ppl_const_Congruence_System_t cs`) [related]
- 10.42.2.84 `int ppl_Octagonal_Shape_float_add_constraint` (`ppl_Octagonal_Shape_float_t ph`,
`ppl_const_Constraint_t c`) [related]
- 10.42.2.85 `int ppl_Octagonal_Shape_float_add_constraints` (`ppl_Octagonal_Shape_float_t ph`,
`ppl_const_Constraint_System_t cs`) [related]
- 10.42.2.86 `int ppl_Octagonal_Shape_float_add_recycled_congruences`
 (`ppl_Octagonal_Shape_float_t ph`, `ppl_Congruence_System_t cs`) [related]

- 10.42.2.87** `int ppl_Octagonal_Shape_float_add_recycled_constraints`
 (`ppl_Octagonal_Shape_float_t ph`, `ppl_Constraint_System_t cs`) [`related`]
- 10.42.2.88** `int ppl_Octagonal_Shape_float_add_space_dimensions_and_embed`
 (`ppl_Octagonal_Shape_float_t ph`, `ppl_dimension_type d`) [`related`]
- 10.42.2.89** `int ppl_Octagonal_Shape_float_add_space_dimensions_and_project`
 (`ppl_Octagonal_Shape_float_t ph`, `ppl_dimension_type d`) [`related`]
- 10.42.2.90** `int ppl_Octagonal_Shape_float_affine_dimension` (`ppl_const_Octagonal_Shape_float_t ph`, `ppl_dimension_type * m`) [`related`]
- 10.42.2.91** `int ppl_Octagonal_Shape_float_affine_image` (`ppl_Octagonal_Shape_float_t ph`,
`ppl_dimension_type var`, `ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`) [`related`]
- 10.42.2.92** `int ppl_Octagonal_Shape_float_affine_preimage` (`ppl_Octagonal_Shape_float_t ph`,
`ppl_dimension_type var`, `ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`) [`related`]
- 10.42.2.93** `int ppl_Octagonal_Shape_float_BHMZ05_widening_assign`
 (`ppl_Octagonal_Shape_float_t x`, `ppl_const_Octagonal_Shape_float_t y`) [`related`]
- 10.42.2.94** `int ppl_Octagonal_Shape_float_BHMZ05_widening_assign_with_tokens`
 (`ppl_Octagonal_Shape_float_t x`, `ppl_const_Octagonal_Shape_float_t y`, `unsigned * tp`)
 [`related`]
- 10.42.2.95** `int ppl_Octagonal_Shape_float_bounded_affine_image` (`ppl_Octagonal_Shape_float_t ph`,
`ppl_dimension_type var`, `ppl_const_Linear_Expression_t lb`,
`ppl_const_Linear_Expression_t ub`, `ppl_const_Coefficient_t d`) [`related`]

- 10.42.2.96 `int ppl_Octagonal_Shape_float_bounded_affine_preimage (ppl_Octagonal_Shape_float_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [**related**]
- 10.42.2.97 `int ppl_Octagonal_Shape_float_bounds_from_above (ppl_const_Octagonal_Shape_float_t ph, ppl_const_Linear_Expression_t le)` [**related**]
- 10.42.2.98 `int ppl_Octagonal_Shape_float_bounds_from_below (ppl_const_Octagonal_Shape_float_t ph, ppl_const_Linear_Expression_t le)` [**related**]
- 10.42.2.99 `int ppl_Octagonal_Shape_float_CC76_extrapolation_assign (ppl_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y)` [**related**]
- 10.42.2.100 `int ppl_Octagonal_Shape_float_CC76_extrapolation_assign_with_tokens (ppl_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y, unsigned *tp)` [**related**]
- 10.42.2.101 `int ppl_Octagonal_Shape_float_CC76_narrowing_assign (ppl_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y)` [**related**]
- 10.42.2.102 `int ppl_Octagonal_Shape_float_concatenate_assign (ppl_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y)` [**related**]
- 10.42.2.103 `int ppl_Octagonal_Shape_float_constrains (ppl_Octagonal_Shape_float_t ph, ppl_dimension_type var)` [**related**]

- 10.42.2.104 `int ppl_Octagonal_Shape_float_contains_integer_point (ppl_const_Octagonal_Shape_float_t ph)` [**related**]
- 10.42.2.105 `int ppl_Octagonal_Shape_float_contains_Octagonal_Shape_float (ppl_const_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y)` [**related**]
- 10.42.2.106 `int ppl_Octagonal_Shape_float_difference_assign (ppl_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y)` [**related**]
- 10.42.2.107 `int ppl_Octagonal_Shape_float_drop_some_non_integer_points (ppl_Octagonal_Shape_float_t ph, int complexity)` [**related**]
- 10.42.2.108 `int ppl_Octagonal_Shape_float_drop_some_non_integer_points_2 (ppl_Octagonal_Shape_float_t ph, ppl_dimension_type ds[], size_t n, int complexity)` [**related**]
- 10.42.2.109 `int ppl_Octagonal_Shape_float_equals_Octagonal_Shape_float (ppl_const_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y)` [**related**]
- 10.42.2.110 `int ppl_Octagonal_Shape_float_expand_space_dimension (ppl_Octagonal_Shape_float_t ph, ppl_dimension_type d, ppl_dimension_type m)` [**related**]
- 10.42.2.111 `int ppl_Octagonal_Shape_float_external_memory_in_bytes (ppl_const_Octagonal_Shape_float_t ps, size_t * sz)` [**related**]
- 10.42.2.112 `int ppl_Octagonal_Shape_float_fold_space_dimensions (ppl_Octagonal_Shape_float_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [**related**]

- 10.42.2.113 `int ppl_Octagonal_Shape_float_frequency (ppl_const_Octagonal_Shape_float_t ph,
ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd,
ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)` [`related`]
- 10.42.2.114 `int ppl_Octagonal_Shape_float_generalized_affine_image (ppl_Octagonal_Shape_
float_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relysym,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.42.2.115 `int ppl_Octagonal_Shape_float_generalized_affine_image_lhs_rhs
(ppl_Octagonal_Shape_float_t ph, ppl_const_Linear_Expression_t lhs, enum
ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t rhs)`
[`related`]
- 10.42.2.116 `int ppl_Octagonal_Shape_float_generalized_affine_preimage (ppl_Octagonal_
Shape_float_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relysym,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.42.2.117 `int ppl_Octagonal_Shape_float_generalized_affine_preimage_lhs_rhs
(ppl_Octagonal_Shape_float_t ph, ppl_const_Linear_Expression_t lhs, enum
ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t rhs)`
[`related`]
- 10.42.2.118 `int ppl_Octagonal_Shape_float_get_congruences (ppl_const_Octagonal_Shape_float_t
ph, ppl_const_Congruence_System_t * pcs)` [`related`]
- 10.42.2.119 `int ppl_Octagonal_Shape_float_get_constraints (ppl_const_Octagonal_Shape_float_t
ph, ppl_const_Constraint_System_t * pcs)` [`related`]
- 10.42.2.120 `int ppl_Octagonal_Shape_float_get_minimized_congruences
(ppl_const_Octagonal_Shape_float_t ph, ppl_const_Congruence_System_t * pcs)`
[`related`]

- 10.42.2.121 `int ppl_Octagonal_Shape_float_get_minimized_constraints (ppl_const-Octagonal_Shape_float_t ph, ppl_const_Constraint_System_t * pcs)`
[related]
- 10.42.2.122 `int ppl_Octagonal_Shape_float_intersection_assign (ppl_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y)` [related]
- 10.42.2.123 `int ppl_Octagonal_Shape_float_is_bounded (ppl_const_Octagonal_Shape_float_t ph)`
[related]
- 10.42.2.124 `int ppl_Octagonal_Shape_float_is_discrete (ppl_const_Octagonal_Shape_float_t ph)`
[related]
- 10.42.2.125 `int ppl_Octagonal_Shape_float_is_disjoint_from_Octagonal_Shape_float (ppl_const_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y)`
[related]
- 10.42.2.126 `int ppl_Octagonal_Shape_float_is_empty (ppl_const_Octagonal_Shape_float_t ph)`
[related]
- 10.42.2.127 `int ppl_Octagonal_Shape_float_is_topologically_closed (ppl_const_Octagonal-Shape_float_t ph)` [related]
- 10.42.2.128 `int ppl_Octagonal_Shape_float_is_universe (ppl_const_Octagonal_Shape_float_t ph)`
[related]
- 10.42.2.129 `int ppl_Octagonal_Shape_float_limited_BHMZ05_extrapolation_assign (ppl_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y, ppl_const_Constraint_System_t cs)` [related]

- 10.42.2.130 `int ppl_Octagonal_Shape_float_limited_BHMZ05_extrapolation_assign_with_tokens`
 (`ppl_Octagonal_Shape_float_t x`, `ppl_const_Octagonal_Shape_float_t y`,
`ppl_const_Constraint_System_t cs`, `unsigned * tp`) [`related`]
- 10.42.2.131 `int ppl_Octagonal_Shape_float_limited_CC76_extrapolation_assign`
 (`ppl_Octagonal_Shape_float_t x`, `ppl_const_Octagonal_Shape_float_t y`,
`ppl_const_Constraint_System_t cs`) [`related`]
- 10.42.2.132 `int ppl_Octagonal_Shape_float_limited_CC76_extrapolation_assign_with_tokens`
 (`ppl_Octagonal_Shape_float_t x`, `ppl_const_Octagonal_Shape_float_t y`,
`ppl_const_Constraint_System_t cs`, `unsigned * tp`) [`related`]
- 10.42.2.133 `int ppl_Octagonal_Shape_float_linear_partition` (`ppl_const_Octagonal_Shape_float_t`
`x`, `ppl_const_Octagonal_Shape_float_t y`, `ppl_Octagonal_Shape_float_t * p_inters`,
`ppl_Pointset_Powerset_NNC_Polyhedron_t * p_rest`) [`related`]
- 10.42.2.134 `int ppl_Octagonal_Shape_float_map_space_dimensions` (`ppl_-`
`Octagonal_Shape_float_t ph`, `ppl_dimension_type maps[ ]`, `size_t n`)
 [`related`]
- 10.42.2.135 `int ppl_Octagonal_Shape_float_maximize` (`ppl_const_Octagonal_Shape_float_t ph`,
`ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`,
`int * poptimum`) [`related`]
- 10.42.2.136 `int ppl_Octagonal_Shape_float_maximize_with_point` (`ppl_const_Octagonal_-`
`Shape_float_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`,
`ppl_Coefficient_t ext_d`, `int * poptimum`, `ppl_Generator_t point`) [`related`]
- 10.42.2.137 `int ppl_Octagonal_Shape_float_minimize` (`ppl_const_Octagonal_Shape_float_t ph`,
`ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`,
`int * poptimum`) [`related`]

- 10.42.2.138 `int ppl_Octagonal_Shape_float_minimize_with_point (ppl_const_Octagonal_Shape_float_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` [related]
- 10.42.2.139 `int ppl_Octagonal_Shape_float_OK (ppl_const_Octagonal_Shape_float_t ph)` [related]
- 10.42.2.140 `int ppl_Octagonal_Shape_float_refine_with_congruence (ppl_Octagonal_Shape_float_t ph, ppl_const_Congruence_t c)` [related]
- 10.42.2.141 `int ppl_Octagonal_Shape_float_refine_with_congruences (ppl_Octagonal_Shape_float_t ph, ppl_const_Congruence_System_t cs)` [related]
- 10.42.2.142 `int ppl_Octagonal_Shape_float_refine_with_constraint (ppl_Octagonal_Shape_float_t ph, ppl_const_Constraint_t c)` [related]
- 10.42.2.143 `int ppl_Octagonal_Shape_float_refine_with_constraints (ppl_Octagonal_Shape_float_t ph, ppl_const_Constraint_System_t cs)` [related]
- 10.42.2.144 `int ppl_Octagonal_Shape_float_relation_with_Congruence (ppl_const_Octagonal_Shape_float_t ph, ppl_const_Congruence_t c)` [related]
- 10.42.2.145 `int ppl_Octagonal_Shape_float_relation_with_Constraint (ppl_const_Octagonal_Shape_float_t ph, ppl_const_Constraint_t c)` [related]
- 10.42.2.146 `int ppl_Octagonal_Shape_float_relation_with_Generator (ppl_const_Octagonal_Shape_float_t ph, ppl_const_Generator_t c)` [related]

- 10.42.2.147 `int ppl_Octagonal_Shape_float_remove_higher_space_dimensions`
`(ppl_Octagonal_Shape_float_t ph, ppl_dimension_type d)` [`related`]
- 10.42.2.148 `int ppl_Octagonal_Shape_float_remove_space_dimensions`
`(ppl_Octagonal_Shape_float_t ph, ppl_dimension_type ds[], size_t n)` [`related`]
- 10.42.2.149 `int ppl_Octagonal_Shape_float_simplify_using_context_assign`
`(ppl_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y)`
`[related]`
- 10.42.2.150 `int ppl_Octagonal_Shape_float_space_dimension` `(ppl_const_Octagonal_Shape_`
`float_t ph, ppl_dimension_type * m)` [`related`]
- 10.42.2.151 `int ppl_Octagonal_Shape_float_strictly_contains_Octagonal_Shape_float`
`(ppl_const_Octagonal_Shape_float_t x, ppl_const_Octagonal_Shape_float_t y)`
`[related]`
- 10.42.2.152 `int ppl_Octagonal_Shape_float_time_elapse_assign` `(ppl_Octagonal_Shape_float_t x,
ppl_const_Octagonal_Shape_float_t y) [related]`
- 10.42.2.153 `int ppl_Octagonal_Shape_float_topological_closure_assign`
`(ppl_Octagonal_Shape_float_t ph)` [`related`]
- 10.42.2.154 `int ppl_Octagonal_Shape_float_total_memory_in_bytes`
`(ppl_const_Octagonal_Shape_float_t ps, size_t * sz)` [`related`]
- 10.42.2.155 `int ppl_Octagonal_Shape_float_unconstrain_space_dimension`
`(ppl_Octagonal_Shape_float_t ph, ppl_dimension_type var)` [`related`]

- 10.42.2.156 `int ppl_Octagonal_Shape_float_unconstrain_space_dimensions`
 (`ppl_Octagonal_Shape_float_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`) [`related`]
- 10.42.2.157 `int ppl_Octagonal_Shape_float_upper_bound_assign` (`ppl_Octagonal_Shape_float_t x`, `ppl_const_Octagonal_Shape_float_t y`) [`related`]
- 10.42.2.158 `int ppl_Octagonal_Shape_float_upper_bound_assign_if_exact`
 (`ppl_Octagonal_Shape_float_t x`, `ppl_const_Octagonal_Shape_float_t y`)
 [`related`]
- 10.42.2.159 `int ppl_Octagonal_Shape_float_widening_assign` (`ppl_Octagonal_Shape_float_t x`,
`ppl_const_Octagonal_Shape_float_t y`) [`related`]
- 10.42.2.160 `int ppl_Octagonal_Shape_float_widening_assign_with_tokens`
 (`ppl_Octagonal_Shape_float_t x`, `ppl_const_Octagonal_Shape_float_t y`, `unsigned * tp`) [`related`]
- 10.42.2.161 `int ppl_Octagonal_Shape_float_wrap_assign` (`ppl_Octagonal_Shape_float_t ph`,
`ppl_dimension_type ds[ ]`, `size_t n`, `enum ppl_enum_Bounded_Integer_Type_Width w`,
`enum ppl_enum_Bounded_Integer_Type_Representation r`, `enum ppl_enum_Bounded_Integer_Type_Overflow o`,
`const ppl_const_Constraint_System_t * pcs`, `unsigned complexity_threshold`, `int wrap_individually`) [`related`]
- 10.42.2.162 `int ppl_one_affine_ranking_function_MS_Octagonal_Shape_float`
 (`ppl_const_Octagonal_Shape_float_t pset`, `ppl_Generator_t point`) [`related`]
- 10.42.2.163 `int ppl_one_affine_ranking_function_MS_Octagonal_Shape_float_2`
 (`ppl_const_Octagonal_Shape_float_t pset_before`, `ppl_const_Octagonal_Shape_float_t pset_after`,
`ppl_Generator_t point`) [`related`]

- 10.42.2.164 `int ppl_one_affine_ranking_function_PR_Octagonal_Shape_float`
`(ppl_const_Octagonal_Shape_float_t pset, ppl_Generator_t point)` [**related**]

- 10.42.2.165 `int ppl_one_affine_ranking_function_PR_Octagonal_Shape_float_2`
`(ppl_const_Octagonal_Shape_float_t pset_before, ppl_const_Octagonal_Shape_float_t`
`pset_after, ppl_Generator_t point)` [**related**]

- 10.42.2.166 `int ppl_termination_test_MS_Octagonal_Shape_float` `(ppl_const_Octagonal_Shape_`
`float_t pset)` [**related**]

- 10.42.2.167 `int ppl_termination_test_MS_Octagonal_Shape_float_2` `(ppl_const_Octagonal_`
`Shape_float_t pset_before, ppl_const_Octagonal_Shape_float_t pset_after)`
[related]

- 10.42.2.168 `int ppl_termination_test_PR_Octagonal_Shape_float` `(ppl_const_Octagonal_Shape_`
`float_t pset)` [**related**]

- 10.42.2.169 `int ppl_termination_test_PR_Octagonal_Shape_float_2` `(ppl_const_Octagonal_`
`Shape_float_t pset_before, ppl_const_Octagonal_Shape_float_t pset_after)`
[related]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.43 `ppl_Octagonal_Shape_int16_t_tag` Interface Reference

Types and functions for [ppl_Octagonal_Shape_int16_t_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl\_delete\_Octagonal\_Shape\_int16\_t` `(ppl_const_Octagonal_Shape_int16_t_t ph)`

- int [ppl_new_Octagonal_Shape_int16_t_from_space_dimension](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_dimension_type d, int empty)
- int [ppl_new_Octagonal_Shape_int16_t_from_Int8_Box](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Int8_Box_t ph)
- int [ppl_new_Octagonal_Shape_int16_t_from_Int16_Box](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Int16_Box_t ph)
- int [ppl_new_Octagonal_Shape_int16_t_from_Int32_Box](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Int32_Box_t ph)
- int [ppl_new_Octagonal_Shape_int16_t_from_Int64_Box](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Int64_Box_t ph)
- int [ppl_new_Octagonal_Shape_int16_t_from_Uint8_Box](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Uint8_Box_t ph)
- int [ppl_new_Octagonal_Shape_int16_t_from_Uint16_Box](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Uint16_Box_t ph)
- int [ppl_new_Octagonal_Shape_int16_t_from_Uint32_Box](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Uint32_Box_t ph)
- int [ppl_new_Octagonal_Shape_int16_t_from_Uint64_Box](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Uint64_Box_t ph)
- int [ppl_new_Octagonal_Shape_int16_t_from_Z_Box](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Z_Box_t ph)
- int [ppl_new_Octagonal_Shape_int16_t_from_Rational_Box](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Rational_Box_t ph)
- int [ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_int8_t](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_BD_Shape_int8_t_t ph)
- int [ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_int16_t](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_BD_Shape_int16_t_t ph)
- int [ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_int32_t](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_BD_Shape_int32_t_t ph)
- int [ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_int64_t](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_BD_Shape_int64_t_t ph)
- int [ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_mpz_class](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_BD_Shape_mpz_class_t ph)
- int [ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_mpq_class](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_BD_Shape_mpq_class_t ph)
- int [ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_int8_t](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph)
- int [ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_int16_t](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph)
- int [ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_int32_t](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph)
- int [ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_int64_t](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph)
- int [ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_mpz_class](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph)
- int [ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_mpq_class](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph)
- int [ppl_new_Octagonal_Shape_int16_t_from_C_Polyhedron](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Polyhedron_t ph)
- int [ppl_new_Octagonal_Shape_int16_t_from_NNC_Polyhedron](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Polyhedron_t ph)
- int [ppl_new_Octagonal_Shape_int16_t_from_Grid](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Grid_t ph)

- [int ppl_new_Octagonal_Shape_int16_t_from_Float_Box](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Float_Box_t ph)
- [int ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_float](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_BD_Shape_float_t ph)
- [int ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_float](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_float_t ph)
- [int ppl_new_Octagonal_Shape_int16_t_from_Double_Box](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Double_Box_t ph)
- [int ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_double](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_BD_Shape_double_t ph)
- [int ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_double](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_double_t ph)
- [int ppl_new_Octagonal_Shape_int16_t_from_Long_Double_Box](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Long_Double_Box_t ph)
- [int ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_long_double](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_BD_Shape_long_double_t ph)
- [int ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_long_double](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_long_double_t ph)
- [int ppl_new_Octagonal_Shape_int16_t_from_Int8_Box_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Int8_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int16_t_from_Int16_Box_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Int16_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int16_t_from_Int32_Box_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Int32_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int16_t_from_Int64_Box_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Int64_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int16_t_from_Uint8_Box_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Uint8_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int16_t_from_Uint16_Box_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Uint16_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int16_t_from_Uint32_Box_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Uint32_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int16_t_from_Uint64_Box_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Uint64_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int16_t_from_Z_Box_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Z_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int16_t_from_Rational_Box_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Rational_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_int8_t_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_int16_t_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_int32_t_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_int64_t_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_mpz_class_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_mpq_class_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_int8_t_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)

- int [ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_int16_t_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_int32_t_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_int64_t_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_mpz_class_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_mpq_class_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int16_t_from_C_Polyhedron_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int16_t_from_NNC_Polyhedron_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int16_t_from_Grid_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Grid_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int16_t_from_Float_Box_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Float_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_float_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_BD_Shape_float_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_float_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int16_t_from_Double_Box_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Double_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_double_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_BD_Shape_double_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_double_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int16_t_from_Long_Double_Box_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_long_double_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_long_double_with_complexity](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int16_t_from_Constraint_System](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Constraint_System_t cs)
- int [ppl_new_Octagonal_Shape_int16_t_from_Congruence_System](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Congruence_System_t cs)
- int [ppl_new_Octagonal_Shape_int16_t_from_Generator_System](#) (ppl_Octagonal_Shape_int16_t_t *pph, ppl_const_Generator_System_t cs)
- int [ppl_Octagonal_Shape_int16_t_space_dimension](#) (ppl_const_Octagonal_Shape_int16_t_t ph, ppl_dimension_type *m)
- int [ppl_Octagonal_Shape_int16_t_affine_dimension](#) (ppl_const_Octagonal_Shape_int16_t_t ph, ppl_dimension_type *m)
- int [ppl_Octagonal_Shape_int16_t_relation_with_Constraint](#) (ppl_const_Octagonal_Shape_int16_t_t ph, ppl_const_Constraint_t c)
- int [ppl_Octagonal_Shape_int16_t_relation_with_Generator](#) (ppl_const_Octagonal_Shape_int16_t_t ph, ppl_const_Generator_t c)

- int [ppl_Octagonal_Shape_int16_t_relation_with_Congruence](#) (ppl_const_Octagonal_Shape_int16_t_t ph, ppl_const_Congruence_t c)
- int [ppl_Octagonal_Shape_int16_t_get_constraints](#) (ppl_const_Octagonal_Shape_int16_t_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_Octagonal_Shape_int16_t_get_congruences](#) (ppl_const_Octagonal_Shape_int16_t_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_Octagonal_Shape_int16_t_get_minimized_constraints](#) (ppl_const_Octagonal_Shape_int16_t_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_Octagonal_Shape_int16_t_get_minimized_congruences](#) (ppl_const_Octagonal_Shape_int16_t_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_Octagonal_Shape_int16_t_is_empty](#) (ppl_const_Octagonal_Shape_int16_t_t ph)
- int [ppl_Octagonal_Shape_int16_t_is_universe](#) (ppl_const_Octagonal_Shape_int16_t_t ph)
- int [ppl_Octagonal_Shape_int16_t_is_bounded](#) (ppl_const_Octagonal_Shape_int16_t_t ph)
- int [ppl_Octagonal_Shape_int16_t_contains_integer_point](#) (ppl_const_Octagonal_Shape_int16_t_t ph)
- int [ppl_Octagonal_Shape_int16_t_is_topologically_closed](#) (ppl_const_Octagonal_Shape_int16_t_t ph)
- int [ppl_Octagonal_Shape_int16_t_is_discrete](#) (ppl_const_Octagonal_Shape_int16_t_t ph)
- int [ppl_Octagonal_Shape_int16_t_topological_closure_assign](#) (ppl_Octagonal_Shape_int16_t_t ph)
- int [ppl_Octagonal_Shape_int16_t_bounds_from_above](#) (ppl_const_Octagonal_Shape_int16_t_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Octagonal_Shape_int16_t_bounds_from_below](#) (ppl_const_Octagonal_Shape_int16_t_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Octagonal_Shape_int16_t_maximize](#) (ppl_const_Octagonal_Shape_int16_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Octagonal_Shape_int16_t_minimize](#) (ppl_const_Octagonal_Shape_int16_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Octagonal_Shape_int16_t_maximize_with_point](#) (ppl_const_Octagonal_Shape_int16_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Octagonal_Shape_int16_t_minimize_with_point](#) (ppl_const_Octagonal_Shape_int16_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Octagonal_Shape_int16_t_frequency](#) (ppl_const_Octagonal_Shape_int16_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)
- int [ppl_Octagonal_Shape_int16_t_contains_Octagonal_Shape_int16_t](#) (ppl_const_Octagonal_Shape_int16_t_t x, ppl_const_Octagonal_Shape_int16_t_t y)
- int [ppl_Octagonal_Shape_int16_t_strictly_contains_Octagonal_Shape_int16_t](#) (ppl_const_Octagonal_Shape_int16_t_t x, ppl_const_Octagonal_Shape_int16_t_t y)
- int [ppl_Octagonal_Shape_int16_t_is_disjoint_from_Octagonal_Shape_int16_t](#) (ppl_const_Octagonal_Shape_int16_t_t x, ppl_const_Octagonal_Shape_int16_t_t y)
- int [ppl_Octagonal_Shape_int16_t_equals_Octagonal_Shape_int16_t](#) (ppl_const_Octagonal_Shape_int16_t_t x, ppl_const_Octagonal_Shape_int16_t_t y)
- int [ppl_Octagonal_Shape_int16_t_OK](#) (ppl_const_Octagonal_Shape_int16_t_t ph)
- int [ppl_Octagonal_Shape_int16_t_add_constraint](#) (ppl_Octagonal_Shape_int16_t_t ph, ppl_const_Constraint_t c)
- int [ppl_Octagonal_Shape_int16_t_add_congruence](#) (ppl_Octagonal_Shape_int16_t_t ph, ppl_const_Congruence_t c)
- int [ppl_Octagonal_Shape_int16_t_add_constraints](#) (ppl_Octagonal_Shape_int16_t_t ph, ppl_const_Constraint_System_t cs)

- int [ppl_Octagonal_Shape_int16_t_add_congruences](#) (ppl_Octagonal_Shape_int16_t_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Octagonal_Shape_int16_t_refine_with_constraint](#) (ppl_Octagonal_Shape_int16_t_t ph, ppl_const_Constraint_t c)
- int [ppl_Octagonal_Shape_int16_t_refine_with_congruence](#) (ppl_Octagonal_Shape_int16_t_t ph, ppl_const_Congruence_t c)
- int [ppl_Octagonal_Shape_int16_t_refine_with_constraints](#) (ppl_Octagonal_Shape_int16_t_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Octagonal_Shape_int16_t_refine_with_congruences](#) (ppl_Octagonal_Shape_int16_t_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Octagonal_Shape_int16_t_intersection_assign](#) (ppl_Octagonal_Shape_int16_t_t x, ppl_const_Octagonal_Shape_int16_t_t y)
- int [ppl_Octagonal_Shape_int16_t_upper_bound_assign](#) (ppl_Octagonal_Shape_int16_t_t x, ppl_const_Octagonal_Shape_int16_t_t y)
- int [ppl_Octagonal_Shape_int16_t_difference_assign](#) (ppl_Octagonal_Shape_int16_t_t x, ppl_const_Octagonal_Shape_int16_t_t y)
- int [ppl_Octagonal_Shape_int16_t_concatenate_assign](#) (ppl_Octagonal_Shape_int16_t_t x, ppl_const_Octagonal_Shape_int16_t_t y)
- int [ppl_Octagonal_Shape_int16_t_time_elapse_assign](#) (ppl_Octagonal_Shape_int16_t_t x, ppl_const_Octagonal_Shape_int16_t_t y)
- int [ppl_Octagonal_Shape_int16_t_upper_bound_assign_if_exact](#) (ppl_Octagonal_Shape_int16_t_t x, ppl_const_Octagonal_Shape_int16_t_t y)
- int [ppl_Octagonal_Shape_int16_t_simplify_using_context_assign](#) (ppl_Octagonal_Shape_int16_t_t x, ppl_const_Octagonal_Shape_int16_t_t y)
- int [ppl_Octagonal_Shape_int16_t_constrains](#) (ppl_Octagonal_Shape_int16_t_t ph, [ppl_dimension_type](#) var)
- int [ppl_Octagonal_Shape_int16_t_unconstrain_space_dimension](#) (ppl_Octagonal_Shape_int16_t_t ph, [ppl_dimension_type](#) var)
- int [ppl_Octagonal_Shape_int16_t_unconstrain_space_dimensions](#) (ppl_Octagonal_Shape_int16_t_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Octagonal_Shape_int16_t_affine_image](#) (ppl_Octagonal_Shape_int16_t_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_int16_t_affine_preimage](#) (ppl_Octagonal_Shape_int16_t_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_int16_t_bounded_affine_image](#) (ppl_Octagonal_Shape_int16_t_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_int16_t_bounded_affine_preimage](#) (ppl_Octagonal_Shape_int16_t_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_int16_t_generalized_affine_image](#) (ppl_Octagonal_Shape_int16_t_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_int16_t_generalized_affine_preimage](#) (ppl_Octagonal_Shape_int16_t_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_int16_t_generalized_affine_image_lhs_rhs](#) (ppl_Octagonal_Shape_int16_t_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Octagonal_Shape_int16_t_generalized_affine_preimage_lhs_rhs](#) (ppl_Octagonal_Shape_int16_t_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)

- [int ppl_Octagonal_Shape_int16_t_add_space_dimensions_and_embed](#) (ppl_Octagonal_Shape_int16_t_t ph, [ppl_dimension_type](#) d)
- [int ppl_Octagonal_Shape_int16_t_add_space_dimensions_and_project](#) (ppl_Octagonal_Shape_int16_t_t ph, [ppl_dimension_type](#) d)
- [int ppl_Octagonal_Shape_int16_t_remove_space_dimensions](#) (ppl_Octagonal_Shape_int16_t_t ph, [ppl_dimension_type](#) ds[], [size_t](#) n)
- [int ppl_Octagonal_Shape_int16_t_remove_higher_space_dimensions](#) (ppl_Octagonal_Shape_int16_t_t ph, [ppl_dimension_type](#) d)
- [int ppl_Octagonal_Shape_int16_t_expand_space_dimension](#) (ppl_Octagonal_Shape_int16_t_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- [int ppl_Octagonal_Shape_int16_t_fold_space_dimensions](#) (ppl_Octagonal_Shape_int16_t_t ph, [ppl_dimension_type](#) ds[], [size_t](#) n, [ppl_dimension_type](#) d)
- [int ppl_Octagonal_Shape_int16_t_map_space_dimensions](#) (ppl_Octagonal_Shape_int16_t_t ph, [ppl_dimension_type](#) maps[], [size_t](#) n)
- [int ppl_Octagonal_Shape_int16_t_drop_some_non_integer_points](#) (ppl_Octagonal_Shape_int16_t_t ph, [int](#) complexity)
- [int ppl_Octagonal_Shape_int16_t_drop_some_non_integer_points_2](#) (ppl_Octagonal_Shape_int16_t_t ph, [ppl_dimension_type](#) ds[], [size_t](#) n, [int](#) complexity)
- [int ppl_Octagonal_Shape_int16_t_external_memory_in_bytes](#) (ppl_const_Octagonal_Shape_int16_t_t ps, [size_t](#) *sz)
- [int ppl_Octagonal_Shape_int16_t_total_memory_in_bytes](#) (ppl_const_Octagonal_Shape_int16_t_t ps, [size_t](#) *sz)
- [int ppl_Octagonal_Shape_int16_t_BHMZ05_widening_assign_with_tokens](#) (ppl_Octagonal_Shape_int16_t_t x, ppl_const_Octagonal_Shape_int16_t_t y, [unsigned](#) *tp)
- [int ppl_Octagonal_Shape_int16_t_BHMZ05_widening_assign](#) (ppl_Octagonal_Shape_int16_t_t x, ppl_const_Octagonal_Shape_int16_t_t y)
- [int ppl_Octagonal_Shape_int16_t_widening_assign_with_tokens](#) (ppl_Octagonal_Shape_int16_t_t x, ppl_const_Octagonal_Shape_int16_t_t y, [unsigned](#) *tp)
- [int ppl_Octagonal_Shape_int16_t_widening_assign](#) (ppl_Octagonal_Shape_int16_t_t x, ppl_const_Octagonal_Shape_int16_t_t y)
- [int ppl_Octagonal_Shape_int16_t_limited_BHMZ05_extrapolation_assign_with_tokens](#) (ppl_Octagonal_Shape_int16_t_t x, ppl_const_Octagonal_Shape_int16_t_t y, ppl_const_Constraint_System_t cs, [unsigned](#) *tp)
- [int ppl_Octagonal_Shape_int16_t_limited_CC76_extrapolation_assign_with_tokens](#) (ppl_Octagonal_Shape_int16_t_t x, ppl_const_Octagonal_Shape_int16_t_t y, ppl_const_Constraint_System_t cs, [unsigned](#) *tp)
- [int ppl_Octagonal_Shape_int16_t_limited_BHMZ05_extrapolation_assign](#) (ppl_Octagonal_Shape_int16_t_t x, ppl_const_Octagonal_Shape_int16_t_t y, ppl_const_Constraint_System_t cs)
- [int ppl_Octagonal_Shape_int16_t_limited_CC76_extrapolation_assign](#) (ppl_Octagonal_Shape_int16_t_t x, ppl_const_Octagonal_Shape_int16_t_t y, ppl_const_Constraint_System_t cs)
- [int ppl_Octagonal_Shape_int16_t_CC76_extrapolation_assign_with_tokens](#) (ppl_Octagonal_Shape_int16_t_t x, ppl_const_Octagonal_Shape_int16_t_t y, [unsigned](#) *tp)
- [int ppl_Octagonal_Shape_int16_t_CC76_extrapolation_assign](#) (ppl_Octagonal_Shape_int16_t_t x, ppl_const_Octagonal_Shape_int16_t_t y)
- [int ppl_Octagonal_Shape_int16_t_CC76_narrowing_assign](#) (ppl_Octagonal_Shape_int16_t_t x, ppl_const_Octagonal_Shape_int16_t_t y)
- [int ppl_Octagonal_Shape_int16_t_linear_partition](#) (ppl_const_Octagonal_Shape_int16_t_t x, ppl_const_Octagonal_Shape_int16_t_t y, ppl_Octagonal_Shape_int16_t_t *p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest)

- `int ppl_Octagonal_Shape_int16_t_wrap_assign` (`ppl_Octagonal_Shape_int16_t_t` ph, `ppl_dimension_type` ds[], `size_t` n, `enum ppl_enum_Bounded_Integer_Type_Width` w, `enum ppl_enum_Bounded_Integer_Type_Representation` r, `enum ppl_enum_Bounded_Integer_Type_Overflow` o, `const ppl_const_Constraint_System_t` *pcs, `unsigned` complexity_threshold, `int` wrap_individually)
- `int ppl_new_Octagonal_Shape_int16_t_recycle_Constraint_System` (`ppl_Octagonal_Shape_int16_t_t` *pph, `ppl_Constraint_System_t` cs)
- `int ppl_new_Octagonal_Shape_int16_t_recycle_Congruence_System` (`ppl_Octagonal_Shape_int16_t_t` *pph, `ppl_Congruence_System_t` cs)
- `int ppl_new_Octagonal_Shape_int16_t_recycle_Generator_System` (`ppl_Octagonal_Shape_int16_t_t` *pph, `ppl_Generator_System_t` cs)
- `int ppl_assign_Octagonal_Shape_int16_t_from_Octagonal_Shape_int16_t` (`ppl_Octagonal_Shape_int16_t_t` dst, `ppl_const_Octagonal_Shape_int16_t_t` src)
- `int ppl_Octagonal_Shape_int16_t_add_recycled_constraints` (`ppl_Octagonal_Shape_int16_t_t` ph, `ppl_Constraint_System_t` cs)
- `int ppl_Octagonal_Shape_int16_t_add_recycled_congruences` (`ppl_Octagonal_Shape_int16_t_t` ph, `ppl_Congruence_System_t` cs)
- `int ppl_termination_test_MS_Octagonal_Shape_int16_t` (`ppl_const_Octagonal_Shape_int16_t_t` pset)
- `int ppl_termination_test_PR_Octagonal_Shape_int16_t` (`ppl_const_Octagonal_Shape_int16_t_t` pset)
- `int ppl_one_affine_ranking_function_MS_Octagonal_Shape_int16_t` (`ppl_const_Octagonal_Shape_int16_t_t` pset, `ppl_Generator_t` point)
- `int ppl_one_affine_ranking_function_PR_Octagonal_Shape_int16_t` (`ppl_const_Octagonal_Shape_int16_t_t` pset, `ppl_Generator_t` point)
- `int ppl_all_affine_ranking_functions_MS_Octagonal_Shape_int16_t` (`ppl_const_Octagonal_Shape_int16_t_t` pset, `ppl_Polyhedron_t` ph)
- `int ppl_all_affine_ranking_functions_PR_Octagonal_Shape_int16_t` (`ppl_const_Octagonal_Shape_int16_t_t` pset, `ppl_Polyhedron_t` ph)
- `int ppl_termination_test_MS_Octagonal_Shape_int16_t_2` (`ppl_const_Octagonal_Shape_int16_t_t` pset_before, `ppl_const_Octagonal_Shape_int16_t_t` pset_after)
- `int ppl_termination_test_PR_Octagonal_Shape_int16_t_2` (`ppl_const_Octagonal_Shape_int16_t_t` pset_before, `ppl_const_Octagonal_Shape_int16_t_t` pset_after)
- `int ppl_one_affine_ranking_function_MS_Octagonal_Shape_int16_t_2` (`ppl_const_Octagonal_Shape_int16_t_t` pset_before, `ppl_const_Octagonal_Shape_int16_t_t` pset_after, `ppl_Generator_t` point)
- `int ppl_one_affine_ranking_function_PR_Octagonal_Shape_int16_t_2` (`ppl_const_Octagonal_Shape_int16_t_t` pset_before, `ppl_const_Octagonal_Shape_int16_t_t` pset_after, `ppl_Generator_t` point)
- `int ppl_all_affine_ranking_functions_MS_Octagonal_Shape_int16_t_2` (`ppl_const_Octagonal_Shape_int16_t_t` pset_before, `ppl_const_Octagonal_Shape_int16_t_t` pset_after, `ppl_Polyhedron_t` ph)
- `int ppl_all_affine_ranking_functions_PR_Octagonal_Shape_int16_t_2` (`ppl_const_Octagonal_Shape_int16_t_t` pset_before, `ppl_const_Octagonal_Shape_int16_t_t` pset_after, `ppl_Polyhedron_t` ph)

10.43.1 Detailed Description

Types and functions for `ppl_Octagonal_Shape_int16_t_tag`.

10.43.2 Friends And Related Function Documentation

- 10.43.2.1** `int ppl_all_affine_ranking_functions_MS_Octagonal_Shape_int16_t`
`(ppl_const_Octagonal_Shape_int16_t_t pset, ppl_Polyhedron_t ph)` [**related**]
- 10.43.2.2** `int ppl_all_affine_ranking_functions_MS_Octagonal_Shape_int16_t_2` `(ppl_const -`
`Octagonal_Shape_int16_t_t pset_before, ppl_const_Octagonal_Shape_int16_t_t`
`pset_after, ppl_Polyhedron_t ph)` [**related**]
- 10.43.2.3** `int ppl_all_affine_ranking_functions_PR_Octagonal_Shape_int16_t`
`(ppl_const_Octagonal_Shape_int16_t_t pset, ppl_Polyhedron_t ph)` [**related**]
- 10.43.2.4** `int ppl_all_affine_ranking_functions_PR_Octagonal_Shape_int16_t_2` `(ppl_const -`
`Octagonal_Shape_int16_t_t pset_before, ppl_const_Octagonal_Shape_int16_t_t`
`pset_after, ppl_Polyhedron_t ph)` [**related**]
- 10.43.2.5** `int ppl_assign_Octagonal_Shape_int16_t_from_Octagonal_Shape_int16_t`
`(ppl_Octagonal_Shape_int16_t_t dst, ppl_const_Octagonal_Shape_int16_t_t src)`
[related]
- 10.43.2.6** `int ppl_delete_Octagonal_Shape_int16_t` `(ppl_const_Octagonal_Shape_int16_t_t ph)`
[related]
- 10.43.2.7** `int ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_double`
`(ppl_Octagonal_Shape_int16_t_t * pph, ppl_const_BD_Shape_double_t ph)`
[related]
- 10.43.2.8** `int ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_double_with_complexity`
`(ppl_Octagonal_Shape_int16_t_t * pph, ppl_const_BD_Shape_double_t ph, int`
`complexity)` [**related**]

- 10.43.2.9 `int ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_float`
(`ppl_Octagonal_Shape_int16_t *pph`, `ppl_const_BD_Shape_float_t ph`) [`related`]
- 10.43.2.10 `int ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_float_with_complexity`
(`ppl_Octagonal_Shape_int16_t_t *pph`, `ppl_const_BD_Shape_float_t ph`, `int complexity`) [`related`]
- 10.43.2.11 `int ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_int16_t`
(`ppl_Octagonal_Shape_int16_t_t *pph`, `ppl_const_BD_Shape_int16_t_t ph`) [`related`]
- 10.43.2.12 `int ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_int16_t_with_complexity`
(`ppl_Octagonal_Shape_int16_t_t *pph`, `ppl_const_BD_Shape_int16_t_t ph`, `int complexity`) [`related`]
- 10.43.2.13 `int ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_int32_t`
(`ppl_Octagonal_Shape_int16_t_t *pph`, `ppl_const_BD_Shape_int32_t_t ph`) [`related`]
- 10.43.2.14 `int ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_int32_t_with_complexity`
(`ppl_Octagonal_Shape_int16_t_t *pph`, `ppl_const_BD_Shape_int32_t_t ph`, `int complexity`) [`related`]
- 10.43.2.15 `int ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_int64_t`
(`ppl_Octagonal_Shape_int16_t_t *pph`, `ppl_const_BD_Shape_int64_t_t ph`) [`related`]
- 10.43.2.16 `int ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_int64_t_with_complexity`
(`ppl_Octagonal_Shape_int16_t_t *pph`, `ppl_const_BD_Shape_int64_t_t ph`, `int complexity`) [`related`]

- 10.43.2.17 `int ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_int8_t`
 (`ppl_Octagonal_Shape_int16_t_t * pph`, `ppl_const_BD_Shape_int8_t_t ph`)
 [related]
- 10.43.2.18 `int ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_int8_t_with_complexity`
 (`ppl_Octagonal_Shape_int16_t_t * pph`, `ppl_const_BD_Shape_int8_t_t ph`, `int complexity`) [related]
- 10.43.2.19 `int ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_long_double`
 (`ppl_Octagonal_Shape_int16_t_t * pph`, `ppl_const_BD_Shape_long_double_t ph`)
 [related]
- 10.43.2.20 `int ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_long_double_with_complexity` (`ppl_Octagonal_Shape_int16_t_t * pph`,
`ppl_const_BD_Shape_long_double_t ph`, `int complexity`) [related]
- 10.43.2.21 `int ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_mpq_class`
 (`ppl_Octagonal_Shape_int16_t_t * pph`, `ppl_const_BD_Shape_mpq_class_t ph`)
 [related]
- 10.43.2.22 `int ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_mpq_class_with_complexity`
 (`ppl_Octagonal_Shape_int16_t_t * pph`, `ppl_const_BD_Shape_mpq_class_t ph`, `int complexity`) [related]
- 10.43.2.23 `int ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_mpz_class`
 (`ppl_Octagonal_Shape_int16_t_t * pph`, `ppl_const_BD_Shape_mpz_class_t ph`)
 [related]
- 10.43.2.24 `int ppl_new_Octagonal_Shape_int16_t_from_BD_Shape_mpz_class_with_complexity`
 (`ppl_Octagonal_Shape_int16_t_t * pph`, `ppl_const_BD_Shape_mpz_class_t ph`, `int complexity`) [related]

- 10.43.2.25 `int ppl_new_Octagonal_Shape_int16_t_from_C_Polyhedron`
(`ppl_Octagonal_Shape_int16_t_t * pph`, `ppl_const_Polyhedron_t ph`) [`related`]
- 10.43.2.26 `int ppl_new_Octagonal_Shape_int16_t_from_C_Polyhedron_with_complexity`
(`ppl_Octagonal_Shape_int16_t_t * pph`, `ppl_const_Polyhedron_t ph`, `int complexity`)
[`related`]
- 10.43.2.27 `int ppl_new_Octagonal_Shape_int16_t_from_Congruence_System`
(`ppl_Octagonal_Shape_int16_t_t * pph`, `ppl_const_Congruence_System_t cs`)
[`related`]
- 10.43.2.28 `int ppl_new_Octagonal_Shape_int16_t_from_Constraint_System`
(`ppl_Octagonal_Shape_int16_t_t * pph`, `ppl_const_Constraint_System_t cs`)
[`related`]
- 10.43.2.29 `int ppl_new_Octagonal_Shape_int16_t_from_Double_Box` (`ppl_Octagonal_Shape_int16_t_t * pph`, `ppl_const_Double_Box_t ph`)
[`related`]
- 10.43.2.30 `int ppl_new_Octagonal_Shape_int16_t_from_Double_Box_with_complexity`
(`ppl_Octagonal_Shape_int16_t_t * pph`, `ppl_const_Double_Box_t ph`, `int complexity`)
[`related`]
- 10.43.2.31 `int ppl_new_Octagonal_Shape_int16_t_from_Float_Box` (`ppl_Octagonal_Shape_int16_t_t * pph`, `ppl_const_Float_Box_t ph`)
[`related`]
- 10.43.2.32 `int ppl_new_Octagonal_Shape_int16_t_from_Float_Box_with_complexity`
(`ppl_Octagonal_Shape_int16_t_t * pph`, `ppl_const_Float_Box_t ph`, `int complexity`)
[`related`]

- 10.43.2.33 `int ppl_new_Octagonal_Shape_int16_t_from_Generator_System`
(`ppl_Octagonal_Shape_int16_t_t * pph`, `ppl_const_Generator_System_t cs`)
[related]
- 10.43.2.34 `int ppl_new_Octagonal_Shape_int16_t_from_Grid` (`ppl_Octagonal_Shape_int16_t_t *`
`pph`, `ppl_const_Grid_t ph`) [related]
- 10.43.2.35 `int ppl_new_Octagonal_Shape_int16_t_from_Grid_with_complexity`
(`ppl_Octagonal_Shape_int16_t_t * pph`, `ppl_const_Grid_t ph`, `int complexity`)
[related]
- 10.43.2.36 `int ppl_new_Octagonal_Shape_int16_t_from_Int16_Box` (`ppl_-`
`Octagonal_Shape_int16_t_t * pph`, `ppl_const_Int16_Box_t ph`)
[related]
- 10.43.2.37 `int ppl_new_Octagonal_Shape_int16_t_from_Int16_Box_with_complexity`
(`ppl_Octagonal_Shape_int16_t_t * pph`, `ppl_const_Int16_Box_t ph`, `int complexity`)
[related]
- 10.43.2.38 `int ppl_new_Octagonal_Shape_int16_t_from_Int32_Box` (`ppl_-`
`Octagonal_Shape_int16_t_t * pph`, `ppl_const_Int32_Box_t ph`)
[related]
- 10.43.2.39 `int ppl_new_Octagonal_Shape_int16_t_from_Int32_Box_with_complexity`
(`ppl_Octagonal_Shape_int16_t_t * pph`, `ppl_const_Int32_Box_t ph`, `int complexity`)
[related]
- 10.43.2.40 `int ppl_new_Octagonal_Shape_int16_t_from_Int64_Box` (`ppl_-`
`Octagonal_Shape_int16_t_t * pph`, `ppl_const_Int64_Box_t ph`)
[related]

- 10.43.2.41** `int ppl_new_Octagonal_Shape_int16_t_from_Int64_Box_with_complexity`
(`ppl_Octagonal_Shape_int16_t_t * pph`, `ppl_const_Int64_Box_t ph`, `int complexity`)
[related]
- 10.43.2.42** `int ppl_new_Octagonal_Shape_int16_t_from_Int8_Box` (`ppl_Octagonal_Shape_int16_t_t * pph`, `ppl_const_Int8_Box_t ph`)
[related]
- 10.43.2.43** `int ppl_new_Octagonal_Shape_int16_t_from_Int8_Box_with_complexity`
(`ppl_Octagonal_Shape_int16_t_t * pph`, `ppl_const_Int8_Box_t ph`, `int complexity`)
[related]
- 10.43.2.44** `int ppl_new_Octagonal_Shape_int16_t_from_Long_Double_Box`
(`ppl_Octagonal_Shape_int16_t_t * pph`, `ppl_const_Long_Double_Box_t ph`)
[related]
- 10.43.2.45** `int ppl_new_Octagonal_Shape_int16_t_from_Long_Double_Box_with_complexity`
(`ppl_Octagonal_Shape_int16_t_t * pph`, `ppl_const_Long_Double_Box_t ph`, `int complexity`) [related]
- 10.43.2.46** `int ppl_new_Octagonal_Shape_int16_t_from_NNC_Polyhedron`
(`ppl_Octagonal_Shape_int16_t_t * pph`, `ppl_const_Polyhedron_t ph`) [related]
- 10.43.2.47** `int ppl_new_Octagonal_Shape_int16_t_from_NNC_Polyhedron_with_complexity`
(`ppl_Octagonal_Shape_int16_t_t * pph`, `ppl_const_Polyhedron_t ph`, `int complexity`)
[related]
- 10.43.2.48** `int ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_double`
(`ppl_Octagonal_Shape_int16_t_t * pph`, `ppl_const_Octagonal_Shape_double_t ph`)
[related]

- 10.43.2.49 `int ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_double_with_complexity (ppl_Octagonal_Shape_int16_t_t * pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)` [**related**]
- 10.43.2.50 `int ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_float (ppl_Octagonal_Shape_int16_t_t * pph, ppl_const_Octagonal_Shape_float_t ph)` [**related**]
- 10.43.2.51 `int ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_float_with_complexity (ppl_Octagonal_Shape_int16_t_t * pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)` [**related**]
- 10.43.2.52 `int ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_int16_t (ppl_Octagonal_Shape_int16_t_t * pph, ppl_const_Octagonal_Shape_int16_t_t ph)` [**related**]
- 10.43.2.53 `int ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_int16_t_with_complexity (ppl_Octagonal_Shape_int16_t_t * pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)` [**related**]
- 10.43.2.54 `int ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_int32_t (ppl_Octagonal_Shape_int16_t_t * pph, ppl_const_Octagonal_Shape_int32_t_t ph)` [**related**]
- 10.43.2.55 `int ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_int32_t_with_complexity (ppl_Octagonal_Shape_int16_t_t * pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)` [**related**]
- 10.43.2.56 `int ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_int64_t (ppl_Octagonal_Shape_int16_t_t * pph, ppl_const_Octagonal_Shape_int64_t_t ph)` [**related**]

- 10.43.2.57 `int ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_int64_t_with_complexity (ppl_Octagonal_Shape_int16_t_t * pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)` [**related**]
- 10.43.2.58 `int ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_int8_t (ppl_Octagonal_Shape_int16_t_t * pph, ppl_const_Octagonal_Shape_int8_t_t ph)` [**related**]
- 10.43.2.59 `int ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_int8_t_with_complexity (ppl_Octagonal_Shape_int16_t_t * pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)` [**related**]
- 10.43.2.60 `int ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_long_double (ppl_Octagonal_Shape_int16_t_t * pph, ppl_const_Octagonal_Shape_long_double_t_t ph)` [**related**]
- 10.43.2.61 `int ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_long_double_with_complexity (ppl_Octagonal_Shape_int16_t_t * pph, ppl_const_Octagonal_Shape_long_double_t_t ph, int complexity)` [**related**]
- 10.43.2.62 `int ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_mpq_class (ppl_Octagonal_Shape_int16_t_t * pph, ppl_const_Octagonal_Shape_mpq_class_t_t ph)` [**related**]
- 10.43.2.63 `int ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_mpq_class_with_complexity (ppl_Octagonal_Shape_int16_t_t * pph, ppl_const_Octagonal_Shape_mpq_class_t_t ph, int complexity)` [**related**]
- 10.43.2.64 `int ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_mpz_class (ppl_Octagonal_Shape_int16_t_t * pph, ppl_const_Octagonal_Shape_mpz_class_t_t ph)` [**related**]

- 10.43.2.65 `int ppl_new_Octagonal_Shape_int16_t_from_Octagonal_Shape_mpz_class_with_complexity (ppl_Octagonal_Shape_int16_t_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)` [related]
- 10.43.2.66 `int ppl_new_Octagonal_Shape_int16_t_from_Rational_Box (ppl_Octagonal_Shape_int16_t_t * pph, ppl_const_Rational_Box_t ph)` [related]
- 10.43.2.67 `int ppl_new_Octagonal_Shape_int16_t_from_Rational_Box_with_complexity (ppl_Octagonal_Shape_int16_t_t * pph, ppl_const_Rational_Box_t ph, int complexity)` [related]
- 10.43.2.68 `int ppl_new_Octagonal_Shape_int16_t_from_space_dimension (ppl_Octagonal_Shape_int16_t_t * pph, ppl_dimension_type d, int empty)` [related]
- 10.43.2.69 `int ppl_new_Octagonal_Shape_int16_t_from_Uint16_Box (ppl_Octagonal_Shape_int16_t_t * pph, ppl_const_Uint16_Box_t ph)` [related]
- 10.43.2.70 `int ppl_new_Octagonal_Shape_int16_t_from_Uint16_Box_with_complexity (ppl_Octagonal_Shape_int16_t_t * pph, ppl_const_Uint16_Box_t ph, int complexity)` [related]
- 10.43.2.71 `int ppl_new_Octagonal_Shape_int16_t_from_Uint32_Box (ppl_Octagonal_Shape_int16_t_t * pph, ppl_const_Uint32_Box_t ph)` [related]
- 10.43.2.72 `int ppl_new_Octagonal_Shape_int16_t_from_Uint32_Box_with_complexity (ppl_Octagonal_Shape_int16_t_t * pph, ppl_const_Uint32_Box_t ph, int complexity)` [related]

- 10.43.2.73** `int ppl_new_Octagonal_Shape_int16_t_from_Uint64_Box (ppl_Octagonal_Shape_int16_t_t * pph, ppl_const_Uint64_Box_t ph)` `[related]`
- 10.43.2.74** `int ppl_new_Octagonal_Shape_int16_t_from_Uint64_Box_with_complexity (ppl_Octagonal_Shape_int16_t_t * pph, ppl_const_Uint64_Box_t ph, int complexity)` `[related]`
- 10.43.2.75** `int ppl_new_Octagonal_Shape_int16_t_from_Uint8_Box (ppl_Octagonal_Shape_int16_t_t * pph, ppl_const_Uint8_Box_t ph)` `[related]`
- 10.43.2.76** `int ppl_new_Octagonal_Shape_int16_t_from_Uint8_Box_with_complexity (ppl_Octagonal_Shape_int16_t_t * pph, ppl_const_Uint8_Box_t ph, int complexity)` `[related]`
- 10.43.2.77** `int ppl_new_Octagonal_Shape_int16_t_from_Z_Box (ppl_Octagonal_Shape_int16_t_t * pph, ppl_const_Z_Box_t ph)` `[related]`
- 10.43.2.78** `int ppl_new_Octagonal_Shape_int16_t_from_Z_Box_with_complexity (ppl_Octagonal_Shape_int16_t_t * pph, ppl_const_Z_Box_t ph, int complexity)` `[related]`
- 10.43.2.79** `int ppl_new_Octagonal_Shape_int16_t_recycle_Congruence_System (ppl_Octagonal_Shape_int16_t_t * pph, ppl_Congruence_System_t cs)` `[related]`
- 10.43.2.80** `int ppl_new_Octagonal_Shape_int16_t_recycle_Constraint_System (ppl_Octagonal_Shape_int16_t_t * pph, ppl_Constraint_System_t cs)` `[related]`

- 10.43.2.81 `int ppl_new_Octagonal_Shape_int16_t_recycle_Generator_System`
`(ppl_Octagonal_Shape_int16_t_t * pph, ppl_Generator_System_t cs)` [`related`]
- 10.43.2.82 `int ppl_Octagonal_Shape_int16_t_add_congruence` `(ppl_Octagonal_Shape_int16_t_t`
`ph, ppl_const_Congruence_t c)` [`related`]
- 10.43.2.83 `int ppl_Octagonal_Shape_int16_t_add_congruences` `(ppl_Octagonal_Shape_int16_t_t`
`ph, ppl_const_Congruence_System_t cs)` [`related`]
- 10.43.2.84 `int ppl_Octagonal_Shape_int16_t_add_constraint` `(ppl_Octagonal_Shape_int16_t_t ph,`
`ppl_const_Constraint_t c)` [`related`]
- 10.43.2.85 `int ppl_Octagonal_Shape_int16_t_add_constraints` `(ppl_Octagonal_Shape_int16_t_t`
`ph, ppl_const_Constraint_System_t cs)` [`related`]
- 10.43.2.86 `int ppl_Octagonal_Shape_int16_t_add_recycled_congruences`
`(ppl_Octagonal_Shape_int16_t_t ph, ppl_Congruence_System_t cs)` [`related`]
- 10.43.2.87 `int ppl_Octagonal_Shape_int16_t_add_recycled_constraints`
`(ppl_Octagonal_Shape_int16_t_t ph, ppl_Constraint_System_t cs)` [`related`]
- 10.43.2.88 `int ppl_Octagonal_Shape_int16_t_add_space_dimensions_and_embed`
`(ppl_Octagonal_Shape_int16_t_t ph, ppl_dimension_type d)` [`related`]
- 10.43.2.89 `int ppl_Octagonal_Shape_int16_t_add_space_dimensions_and_project`
`(ppl_Octagonal_Shape_int16_t_t ph, ppl_dimension_type d)` [`related`]

- 10.43.2.90** `int ppl_Octagonal_Shape_int16_t_affine_dimension (ppl_const_Octagonal_Shape_int16_t_t ph, ppl_dimension_type * m)` [**related**]
- 10.43.2.91** `int ppl_Octagonal_Shape_int16_t_affine_image (ppl_Octagonal_Shape_int16_t_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.43.2.92** `int ppl_Octagonal_Shape_int16_t_affine_preimage (ppl_Octagonal_Shape_int16_t_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.43.2.93** `int ppl_Octagonal_Shape_int16_t_BHMZ05_widening_assign (ppl_Octagonal_Shape_int16_t_t x, ppl_const_Octagonal_Shape_int16_t_t y)` [**related**]
- 10.43.2.94** `int ppl_Octagonal_Shape_int16_t_BHMZ05_widening_assign_with_tokens (ppl_Octagonal_Shape_int16_t_t x, ppl_const_Octagonal_Shape_int16_t_t y, unsigned * tp)` [**related**]
- 10.43.2.95** `int ppl_Octagonal_Shape_int16_t_bounded_affine_image (ppl_Octagonal_Shape_int16_t_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [**related**]
- 10.43.2.96** `int ppl_Octagonal_Shape_int16_t_bounded_affine_preimage (ppl_Octagonal_Shape_int16_t_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [**related**]
- 10.43.2.97** `int ppl_Octagonal_Shape_int16_t_bounds_from_above (ppl_const_Octagonal_Shape_int16_t_t ph, ppl_const_Linear_Expression_t le)` [**related**]

- 10.43.2.98 `int ppl_Octagonal_Shape_int16_t_bounds_from_below (ppl_const-Octagonal_Shape_int16_t_t ph, ppl_const_Linear_Expression_t le)`
[related]
- 10.43.2.99 `int ppl_Octagonal_Shape_int16_t_CC76_extrapolation_assign (ppl_Octagonal_Shape_int16_t_t x, ppl_const_Octagonal_Shape_int16_t_t y)`
[related]
- 10.43.2.100 `int ppl_Octagonal_Shape_int16_t_CC76_extrapolation_assign_with_tokens (ppl_Octagonal_Shape_int16_t_t x, ppl_const_Octagonal_Shape_int16_t_t y, unsigned * tp)` [related]
- 10.43.2.101 `int ppl_Octagonal_Shape_int16_t_CC76_narrowing_assign (ppl_Octagonal_Shape_int16_t_t x, ppl_const_Octagonal_Shape_int16_t_t y)`
[related]
- 10.43.2.102 `int ppl_Octagonal_Shape_int16_t_concatenate_assign (ppl_Octagonal_Shape_int16_t_t x, ppl_const_Octagonal_Shape_int16_t_t y)`
[related]
- 10.43.2.103 `int ppl_Octagonal_Shape_int16_t_constrains (ppl_Octagonal_Shape_int16_t_t ph, ppl_dimension_type var)` [related]
- 10.43.2.104 `int ppl_Octagonal_Shape_int16_t_contains_integer_point (ppl_const_Octagonal_Shape_int16_t_t ph)` [related]
- 10.43.2.105 `int ppl_Octagonal_Shape_int16_t_contains_Octagonal_Shape_int16_t (ppl_const_Octagonal_Shape_int16_t_t x, ppl_const_Octagonal_Shape_int16_t_t y)`
[related]

- 10.43.2.106 `int ppl_Octagonal_Shape_int16_t_difference_assign (ppl_Octagonal_Shape_int16_t_t x, ppl_const_Octagonal_Shape_int16_t_t y)` [**related**]
- 10.43.2.107 `int ppl_Octagonal_Shape_int16_t_drop_some_non_integer_points (ppl_Octagonal_Shape_int16_t_t ph, int complexity)` [**related**]
- 10.43.2.108 `int ppl_Octagonal_Shape_int16_t_drop_some_non_integer_points_2 (ppl_Octagonal_Shape_int16_t_t ph, ppl_dimension_type ds[], size_t n, int complexity)` [**related**]
- 10.43.2.109 `int ppl_Octagonal_Shape_int16_t_equals_Octagonal_Shape_int16_t (ppl_const_Octagonal_Shape_int16_t_t x, ppl_const_Octagonal_Shape_int16_t_t y)` [**related**]
- 10.43.2.110 `int ppl_Octagonal_Shape_int16_t_expand_space_dimension (ppl_Octagonal_Shape_int16_t_t ph, ppl_dimension_type d, ppl_dimension_type m)` [**related**]
- 10.43.2.111 `int ppl_Octagonal_Shape_int16_t_external_memory_in_bytes (ppl_const_Octagonal_Shape_int16_t_t ps, size_t * sz)` [**related**]
- 10.43.2.112 `int ppl_Octagonal_Shape_int16_t_fold_space_dimensions (ppl_Octagonal_Shape_int16_t_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [**related**]
- 10.43.2.113 `int ppl_Octagonal_Shape_int16_t_frequency (ppl_const_Octagonal_Shape_int16_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)` [**related**]

- 10.43.2.114 `int ppl_Octagonal_Shape_int16_t_generalized_affine_image (ppl_Octagonal_Shape_int16_t_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.43.2.115 `int ppl_Octagonal_Shape_int16_t_generalized_affine_image_lhs_rhs (ppl_Octagonal_Shape_int16_t_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` [`related`]
- 10.43.2.116 `int ppl_Octagonal_Shape_int16_t_generalized_affine_preimage (ppl_Octagonal_Shape_int16_t_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.43.2.117 `int ppl_Octagonal_Shape_int16_t_generalized_affine_preimage_lhs_rhs (ppl_Octagonal_Shape_int16_t_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` [`related`]
- 10.43.2.118 `int ppl_Octagonal_Shape_int16_t_get_congruences (ppl_const_Octagonal_Shape_int16_t_t ph, ppl_const_Congruence_System_t * pcs)` [`related`]
- 10.43.2.119 `int ppl_Octagonal_Shape_int16_t_get_constraints (ppl_const_Octagonal_Shape_int16_t_t ph, ppl_const_Constraint_System_t * pcs)` [`related`]
- 10.43.2.120 `int ppl_Octagonal_Shape_int16_t_get_minimized_congruences (ppl_const_Octagonal_Shape_int16_t_t ph, ppl_const_Congruence_System_t * pcs)` [`related`]

- 10.43.2.121 `int ppl_Octagonal_Shape_int16_t_get_minimized_constraints`
(`ppl_const_Octagonal_Shape_int16_t_t ph`, `ppl_const_Constraint_System_t * pcs`)
[related]
- 10.43.2.122 `int ppl_Octagonal_Shape_int16_t_intersection_assign` (`ppl_Octagonal_Shape_int16_t_t x`, `ppl_const_Octagonal_Shape_int16_t_t y`)
[related]
- 10.43.2.123 `int ppl_Octagonal_Shape_int16_t_is_bounded` (`ppl_const_Octagonal_Shape_int16_t_t ph`) [related]
- 10.43.2.124 `int ppl_Octagonal_Shape_int16_t_is_discrete` (`ppl_const_Octagonal_Shape_int16_t_t ph`) [related]
- 10.43.2.125 `int ppl_Octagonal_Shape_int16_t_is_disjoint_from_Octagonal_Shape_int16_t`
(`ppl_const_Octagonal_Shape_int16_t_t x`, `ppl_const_Octagonal_Shape_int16_t_t y`)
[related]
- 10.43.2.126 `int ppl_Octagonal_Shape_int16_t_is_empty` (`ppl_const_Octagonal_Shape_int16_t_t ph`) [related]
- 10.43.2.127 `int ppl_Octagonal_Shape_int16_t_is_topologically_closed`
(`ppl_const_Octagonal_Shape_int16_t_t ph`) [related]
- 10.43.2.128 `int ppl_Octagonal_Shape_int16_t_is_universe` (`ppl_const_Octagonal_Shape_int16_t_t ph`) [related]
- 10.43.2.129 `int ppl_Octagonal_Shape_int16_t_limited_BHMZ05_extrapolation_assign`
(`ppl_Octagonal_Shape_int16_t_t x`, `ppl_const_Octagonal_Shape_int16_t_t y`,
`ppl_const_Constraint_System_t cs`) [related]

- 10.43.2.130 `int ppl_Octagonal_Shape_int16_t_limited_BHMZ05_extrapolation_assign_with_tokens (ppl_Octagonal_Shape_int16_t tx, ppl_const_Octagonal_Shape_int16_t ty, ppl_const_Constraint_System_t cs, unsigned * tp)` [related]
- 10.43.2.131 `int ppl_Octagonal_Shape_int16_t_limited_CC76_extrapolation_assign (ppl_Octagonal_Shape_int16_t tx, ppl_const_Octagonal_Shape_int16_t ty, ppl_const_Constraint_System_t cs)` [related]
- 10.43.2.132 `int ppl_Octagonal_Shape_int16_t_limited_CC76_extrapolation_assign_with_tokens (ppl_Octagonal_Shape_int16_t tx, ppl_const_Octagonal_Shape_int16_t ty, ppl_const_Constraint_System_t cs, unsigned * tp)` [related]
- 10.43.2.133 `int ppl_Octagonal_Shape_int16_t_linear_partition (ppl_const_Octagonal_Shape_int16_t tx, ppl_const_Octagonal_Shape_int16_t ty, ppl_Octagonal_Shape_int16_t * p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t * p_rest)` [related]
- 10.43.2.134 `int ppl_Octagonal_Shape_int16_t_map_space_dimensions (ppl_Octagonal_Shape_int16_t ph, ppl_dimension_type maps[], size_t n)` [related]
- 10.43.2.135 `int ppl_Octagonal_Shape_int16_t_maximize (ppl_const_Octagonal_Shape_int16_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [related]
- 10.43.2.136 `int ppl_Octagonal_Shape_int16_t_maximize_with_point (ppl_const_Octagonal_Shape_int16_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` [related]
- 10.43.2.137 `int ppl_Octagonal_Shape_int16_t_minimize (ppl_const_Octagonal_Shape_int16_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [related]

- 10.43.2.138 `int ppl_Octagonal_Shape_int16_t_minimize_with_point (ppl_const_Octagonal_Shape_int16_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` [related]
- 10.43.2.139 `int ppl_Octagonal_Shape_int16_t_OK (ppl_const_Octagonal_Shape_int16_t_t ph)` [related]
- 10.43.2.140 `int ppl_Octagonal_Shape_int16_t_refine_with_congruence (ppl_Octagonal_Shape_int16_t_t ph, ppl_const_Congruence_t c)` [related]
- 10.43.2.141 `int ppl_Octagonal_Shape_int16_t_refine_with_congruences (ppl_Octagonal_Shape_int16_t_t ph, ppl_const_Congruence_System_t cs)` [related]
- 10.43.2.142 `int ppl_Octagonal_Shape_int16_t_refine_with_constraint (ppl_Octagonal_Shape_int16_t_t ph, ppl_const_Constraint_t c)` [related]
- 10.43.2.143 `int ppl_Octagonal_Shape_int16_t_refine_with_constraints (ppl_Octagonal_Shape_int16_t_t ph, ppl_const_Constraint_System_t cs)` [related]
- 10.43.2.144 `int ppl_Octagonal_Shape_int16_t_relation_with_Congruence (ppl_const_Octagonal_Shape_int16_t_t ph, ppl_const_Congruence_t c)` [related]
- 10.43.2.145 `int ppl_Octagonal_Shape_int16_t_relation_with_Constraint (ppl_const_Octagonal_Shape_int16_t_t ph, ppl_const_Constraint_t c)` [related]
- 10.43.2.146 `int ppl_Octagonal_Shape_int16_t_relation_with_Generator (ppl_const_Octagonal_Shape_int16_t_t ph, ppl_const_Generator_t c)` [related]

- 10.43.2.147 `int ppl_Octagonal_Shape_int16_t_remove_higher_space_dimensions`
 (`ppl_Octagonal_Shape_int16_t_t ph`, `ppl_dimension_type d`) [`related`]
- 10.43.2.148 `int ppl_Octagonal_Shape_int16_t_remove_space_dimensions`
 (`ppl_Octagonal_Shape_int16_t_t ph`, `ppl_dimension_type ds[]`, `size_t n`)
 [`related`]
- 10.43.2.149 `int ppl_Octagonal_Shape_int16_t_simplify_using_context_assign`
 (`ppl_Octagonal_Shape_int16_t_t x`, `ppl_const_Octagonal_Shape_int16_t_t y`)
 [`related`]
- 10.43.2.150 `int ppl_Octagonal_Shape_int16_t_space_dimension` (`ppl_const_-`
`Octagonal_Shape_int16_t_t ph`, `ppl_dimension_type * m`)
 [`related`]
- 10.43.2.151 `int ppl_Octagonal_Shape_int16_t_strictly_contains_Octagonal_Shape_int16_t`
 (`ppl_const_Octagonal_Shape_int16_t_t x`, `ppl_const_Octagonal_Shape_int16_t_t y`)
 [`related`]
- 10.43.2.152 `int ppl_Octagonal_Shape_int16_t_time_elapse_assign` (`ppl_Octagonal_-`
`Shape_int16_t_t x`, `ppl_const_Octagonal_Shape_int16_t_t y`)
 [`related`]
- 10.43.2.153 `int ppl_Octagonal_Shape_int16_t_topological_closure_assign`
 (`ppl_Octagonal_Shape_int16_t_t ph`) [`related`]
- 10.43.2.154 `int ppl_Octagonal_Shape_int16_t_total_memory_in_bytes`
 (`ppl_const_Octagonal_Shape_int16_t_t ps`, `size_t * sz`) [`related`]

- 10.43.2.155 `int ppl_Octagonal_Shape_int16_t_unconstrain_space_dimension`
(`ppl_Octagonal_Shape_int16_t_t ph`, `ppl_dimension_type var`) [`related`]
- 10.43.2.156 `int ppl_Octagonal_Shape_int16_t_unconstrain_space_dimensions`
(`ppl_Octagonal_Shape_int16_t_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`)
[`related`]
- 10.43.2.157 `int ppl_Octagonal_Shape_int16_t_upper_bound_assign` (`ppl_Octagonal_Shape_int16_t_t x`, `ppl_const_Octagonal_Shape_int16_t_t y`)
[`related`]
- 10.43.2.158 `int ppl_Octagonal_Shape_int16_t_upper_bound_assign_if_exact`
(`ppl_Octagonal_Shape_int16_t_t x`, `ppl_const_Octagonal_Shape_int16_t_t y`)
[`related`]
- 10.43.2.159 `int ppl_Octagonal_Shape_int16_t_widening_assign` (`ppl_Octagonal_Shape_int16_t_t x`, `ppl_const_Octagonal_Shape_int16_t_t y`) [`related`]
- 10.43.2.160 `int ppl_Octagonal_Shape_int16_t_widening_assign_with_tokens`
(`ppl_Octagonal_Shape_int16_t_t x`, `ppl_const_Octagonal_Shape_int16_t_t y`,
`unsigned * tp`) [`related`]
- 10.43.2.161 `int ppl_Octagonal_Shape_int16_t_wrap_assign` (`ppl_Octagonal_Shape_int16_t_t ph`,
`ppl_dimension_type ds[ ]`, `size_t n`, `enum ppl_enum_Bounded_Integer_Type_Width w`,
`enum ppl_enum_Bounded_Integer_Type_Representation r`, `enum ppl_enum_Bounded_Integer_Type_Overflow o`,
`const ppl_const_Constraint_System_t * pcs`, `unsigned complexity_threshold`, `int wrap_individually`) [`related`]
- 10.43.2.162 `int ppl_one_affine_ranking_function_MS_Octagonal_Shape_int16_t`
(`ppl_const_Octagonal_Shape_int16_t_t pset`, `ppl_Generator_t point`) [`related`]

- 10.43.2.163 `int ppl_one_affine_ranking_function_MS_Octagonal_Shape_int16_t_2 (ppl_const_Octagonal_Shape_int16_t_t pset_before, ppl_const_Octagonal_Shape_int16_t_t pset_after, ppl_Generator_t point)` `[related]`

- 10.43.2.164 `int ppl_one_affine_ranking_function_PR_Octagonal_Shape_int16_t (ppl_const_Octagonal_Shape_int16_t_t pset, ppl_Generator_t point)` `[related]`

- 10.43.2.165 `int ppl_one_affine_ranking_function_PR_Octagonal_Shape_int16_t_2 (ppl_const_Octagonal_Shape_int16_t_t pset_before, ppl_const_Octagonal_Shape_int16_t_t pset_after, ppl_Generator_t point)` `[related]`

- 10.43.2.166 `int ppl_termination_test_MS_Octagonal_Shape_int16_t (ppl_const_Octagonal_Shape_int16_t_t pset)` `[related]`

- 10.43.2.167 `int ppl_termination_test_MS_Octagonal_Shape_int16_t_2 (ppl_const_Octagonal_Shape_int16_t_t pset_before, ppl_const_Octagonal_Shape_int16_t_t pset_after)` `[related]`

- 10.43.2.168 `int ppl_termination_test_PR_Octagonal_Shape_int16_t (ppl_const_Octagonal_Shape_int16_t_t pset)` `[related]`

- 10.43.2.169 `int ppl_termination_test_PR_Octagonal_Shape_int16_t_2 (ppl_const_Octagonal_Shape_int16_t_t pset_before, ppl_const_Octagonal_Shape_int16_t_t pset_after)` `[related]`

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.44 `ppl_Octagonal_Shape_int32_t_tag` Interface Reference

Types and functions for [ppl_Octagonal_Shape_int32_t_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Octagonal_Shape_int32_t (ppl_const_Octagonal_Shape_int32_t_t ph)`
- `int ppl_new_Octagonal_Shape_int32_t_from_space_dimension (ppl_Octagonal_Shape_int32_t_t *pph, ppl_dimension_type d, int empty)`
- `int ppl_new_Octagonal_Shape_int32_t_from_Int8_Box (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Int8_Box_t ph)`
- `int ppl_new_Octagonal_Shape_int32_t_from_Int16_Box (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Int16_Box_t ph)`
- `int ppl_new_Octagonal_Shape_int32_t_from_Int32_Box (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Int32_Box_t ph)`
- `int ppl_new_Octagonal_Shape_int32_t_from_Int64_Box (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Int64_Box_t ph)`
- `int ppl_new_Octagonal_Shape_int32_t_from_Uint8_Box (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Uint8_Box_t ph)`
- `int ppl_new_Octagonal_Shape_int32_t_from_Uint16_Box (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Uint16_Box_t ph)`
- `int ppl_new_Octagonal_Shape_int32_t_from_Uint32_Box (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Uint32_Box_t ph)`
- `int ppl_new_Octagonal_Shape_int32_t_from_Uint64_Box (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Uint64_Box_t ph)`
- `int ppl_new_Octagonal_Shape_int32_t_from_Z_Box (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Z_Box_t ph)`
- `int ppl_new_Octagonal_Shape_int32_t_from_Rational_Box (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Rational_Box_t ph)`
- `int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_int8_t (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_BD_Shape_int8_t_t ph)`
- `int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_int16_t (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_BD_Shape_int16_t_t ph)`
- `int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_int32_t (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_BD_Shape_int32_t_t ph)`
- `int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_int64_t (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_BD_Shape_int64_t_t ph)`
- `int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_mpz_class (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_BD_Shape_mpz_class_t ph)`
- `int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_mpq_class (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_BD_Shape_mpq_class_t ph)`
- `int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_int8_t (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph)`
- `int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_int16_t (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph)`
- `int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_int32_t (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph)`
- `int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_int64_t (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph)`
- `int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_mpz_class (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph)`
- `int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_mpq_class (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph)`

- [int ppl_new_Octagonal_Shape_int32_t_from_C_Polyhedron](#) (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Polyhedron_t ph)
- [int ppl_new_Octagonal_Shape_int32_t_from_NNC_Polyhedron](#) (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Polyhedron_t ph)
- [int ppl_new_Octagonal_Shape_int32_t_from_Grid](#) (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Grid_t ph)
- [int ppl_new_Octagonal_Shape_int32_t_from_Float_Box](#) (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Float_Box_t ph)
- [int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_float](#) (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_BD_Shape_float_t ph)
- [int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_float](#) (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_float_t ph)
- [int ppl_new_Octagonal_Shape_int32_t_from_Double_Box](#) (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Double_Box_t ph)
- [int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_double](#) (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_BD_Shape_double_t ph)
- [int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_double](#) (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_double_t ph)
- [int ppl_new_Octagonal_Shape_int32_t_from_Long_Double_Box](#) (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Long_Double_Box_t ph)
- [int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_long_double](#) (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_BD_Shape_long_double_t ph)
- [int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_long_double](#) (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_long_double_t ph)
- [int ppl_new_Octagonal_Shape_int32_t_from_Int8_Box_with_complexity](#) (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Int8_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int32_t_from_Int16_Box_with_complexity](#) (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Int16_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int32_t_from_Int32_Box_with_complexity](#) (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Int32_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int32_t_from_Int64_Box_with_complexity](#) (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Int64_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int32_t_from_Uint8_Box_with_complexity](#) (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Uint8_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int32_t_from_Uint16_Box_with_complexity](#) (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Uint16_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int32_t_from_Uint32_Box_with_complexity](#) (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Uint32_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int32_t_from_Uint64_Box_with_complexity](#) (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Uint64_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int32_t_from_Z_Box_with_complexity](#) (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Z_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int32_t_from_Rational_Box_with_complexity](#) (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Rational_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_int8_t_with_complexity](#) (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_int16_t_with_complexity](#) (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_int32_t_with_complexity](#) (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_int64_t_with_complexity](#) (ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)

- `int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_mpz_class_with_complexity` (`ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_mpq_class_with_complexity` (`ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_int8_t_with_complexity` (`ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_int16_t_with_complexity` (`ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_int32_t_with_complexity` (`ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_int64_t_with_complexity` (`ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_mpz_class_with_complexity` (`ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_mpq_class_with_complexity` (`ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_int32_t_from_C_Polyhedron_with_complexity` (`ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Polyhedron_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_int32_t_from_NNC_Polyhedron_with_complexity` (`ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Polyhedron_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_int32_t_from_Grid_with_complexity` (`ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Grid_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_int32_t_from_Float_Box_with_complexity` (`ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Float_Box_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_float_with_complexity` (`ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_BD_Shape_float_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_float_with_complexity` (`ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_int32_t_from_Double_Box_with_complexity` (`ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Double_Box_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_double_with_complexity` (`ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_BD_Shape_double_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_double_with_complexity` (`ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_int32_t_from_Long_Double_Box_with_complexity` (`ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Long_Double_Box_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_long_double_with_complexity` (`ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_long_double_with_complexity` (`ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity`)
- `int ppl_new_Octagonal_Shape_int32_t_from_Constraint_System` (`ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Constraint_System_t cs`)
- `int ppl_new_Octagonal_Shape_int32_t_from_Congruence_System` (`ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Congruence_System_t cs`)
- `int ppl_new_Octagonal_Shape_int32_t_from_Generator_System` (`ppl_Octagonal_Shape_int32_t_t *pph, ppl_const_Generator_System_t cs`)
- `int ppl_Octagonal_Shape_int32_t_space_dimension` (`ppl_const_Octagonal_Shape_int32_t_t ph, ppl_dimension_type *m`)

- int [ppl_Octagonal_Shape_int32_t_affine_dimension](#) (ppl_const_Octagonal_Shape_int32_t_t ph, ppl_dimension_type *m)
- int [ppl_Octagonal_Shape_int32_t_relation_with_Constraint](#) (ppl_const_Octagonal_Shape_int32_t_t ph, ppl_const_Constraint_t c)
- int [ppl_Octagonal_Shape_int32_t_relation_with_Generator](#) (ppl_const_Octagonal_Shape_int32_t_t ph, ppl_const_Generator_t c)
- int [ppl_Octagonal_Shape_int32_t_relation_with_Congruence](#) (ppl_const_Octagonal_Shape_int32_t_t ph, ppl_const_Congruence_t c)
- int [ppl_Octagonal_Shape_int32_t_get_constraints](#) (ppl_const_Octagonal_Shape_int32_t_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_Octagonal_Shape_int32_t_get_congruences](#) (ppl_const_Octagonal_Shape_int32_t_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_Octagonal_Shape_int32_t_get_minimized_constraints](#) (ppl_const_Octagonal_Shape_int32_t_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_Octagonal_Shape_int32_t_get_minimized_congruences](#) (ppl_const_Octagonal_Shape_int32_t_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_Octagonal_Shape_int32_t_is_empty](#) (ppl_const_Octagonal_Shape_int32_t_t ph)
- int [ppl_Octagonal_Shape_int32_t_is_universe](#) (ppl_const_Octagonal_Shape_int32_t_t ph)
- int [ppl_Octagonal_Shape_int32_t_is_bounded](#) (ppl_const_Octagonal_Shape_int32_t_t ph)
- int [ppl_Octagonal_Shape_int32_t_contains_integer_point](#) (ppl_const_Octagonal_Shape_int32_t_t ph)
- int [ppl_Octagonal_Shape_int32_t_is_topologically_closed](#) (ppl_const_Octagonal_Shape_int32_t_t ph)
- int [ppl_Octagonal_Shape_int32_t_is_discrete](#) (ppl_const_Octagonal_Shape_int32_t_t ph)
- int [ppl_Octagonal_Shape_int32_t_topological_closure_assign](#) (ppl_Octagonal_Shape_int32_t_t ph)
- int [ppl_Octagonal_Shape_int32_t_bounds_from_above](#) (ppl_const_Octagonal_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Octagonal_Shape_int32_t_bounds_from_below](#) (ppl_const_Octagonal_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Octagonal_Shape_int32_t_maximize](#) (ppl_const_Octagonal_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Octagonal_Shape_int32_t_minimize](#) (ppl_const_Octagonal_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Octagonal_Shape_int32_t_maximize_with_point](#) (ppl_const_Octagonal_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Octagonal_Shape_int32_t_minimize_with_point](#) (ppl_const_Octagonal_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Octagonal_Shape_int32_t_frequency](#) (ppl_const_Octagonal_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)
- int [ppl_Octagonal_Shape_int32_t_contains_Octagonal_Shape_int32_t](#) (ppl_const_Octagonal_Shape_int32_t_t x, ppl_const_Octagonal_Shape_int32_t_t y)
- int [ppl_Octagonal_Shape_int32_t_strictly_contains_Octagonal_Shape_int32_t](#) (ppl_const_Octagonal_Shape_int32_t_t x, ppl_const_Octagonal_Shape_int32_t_t y)
- int [ppl_Octagonal_Shape_int32_t_is_disjoint_from_Octagonal_Shape_int32_t](#) (ppl_const_Octagonal_Shape_int32_t_t x, ppl_const_Octagonal_Shape_int32_t_t y)
- int [ppl_Octagonal_Shape_int32_t_equals_Octagonal_Shape_int32_t](#) (ppl_const_Octagonal_Shape_int32_t_t x, ppl_const_Octagonal_Shape_int32_t_t y)
- int [ppl_Octagonal_Shape_int32_t_OK](#) (ppl_const_Octagonal_Shape_int32_t_t ph)

- int [ppl_Octagonal_Shape_int32_t_add_constraint](#) (ppl_Octagonal_Shape_int32_t_t ph, ppl_const_Constraint_t c)
- int [ppl_Octagonal_Shape_int32_t_add_congruence](#) (ppl_Octagonal_Shape_int32_t_t ph, ppl_const_Congruence_t c)
- int [ppl_Octagonal_Shape_int32_t_add_constraints](#) (ppl_Octagonal_Shape_int32_t_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Octagonal_Shape_int32_t_add_congruences](#) (ppl_Octagonal_Shape_int32_t_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Octagonal_Shape_int32_t_refine_with_constraint](#) (ppl_Octagonal_Shape_int32_t_t ph, ppl_const_Constraint_t c)
- int [ppl_Octagonal_Shape_int32_t_refine_with_congruence](#) (ppl_Octagonal_Shape_int32_t_t ph, ppl_const_Congruence_t c)
- int [ppl_Octagonal_Shape_int32_t_refine_with_constraints](#) (ppl_Octagonal_Shape_int32_t_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Octagonal_Shape_int32_t_refine_with_congruences](#) (ppl_Octagonal_Shape_int32_t_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Octagonal_Shape_int32_t_intersection_assign](#) (ppl_Octagonal_Shape_int32_t_t x, ppl_const_Octagonal_Shape_int32_t_t y)
- int [ppl_Octagonal_Shape_int32_t_upper_bound_assign](#) (ppl_Octagonal_Shape_int32_t_t x, ppl_const_Octagonal_Shape_int32_t_t y)
- int [ppl_Octagonal_Shape_int32_t_difference_assign](#) (ppl_Octagonal_Shape_int32_t_t x, ppl_const_Octagonal_Shape_int32_t_t y)
- int [ppl_Octagonal_Shape_int32_t_concatenate_assign](#) (ppl_Octagonal_Shape_int32_t_t x, ppl_const_Octagonal_Shape_int32_t_t y)
- int [ppl_Octagonal_Shape_int32_t_time_elapse_assign](#) (ppl_Octagonal_Shape_int32_t_t x, ppl_const_Octagonal_Shape_int32_t_t y)
- int [ppl_Octagonal_Shape_int32_t_upper_bound_assign_if_exact](#) (ppl_Octagonal_Shape_int32_t_t x, ppl_const_Octagonal_Shape_int32_t_t y)
- int [ppl_Octagonal_Shape_int32_t_simplify_using_context_assign](#) (ppl_Octagonal_Shape_int32_t_t x, ppl_const_Octagonal_Shape_int32_t_t y)
- int [ppl_Octagonal_Shape_int32_t_constrains](#) (ppl_Octagonal_Shape_int32_t_t ph, [ppl_dimension_type](#) var)
- int [ppl_Octagonal_Shape_int32_t_unconstrain_space_dimension](#) (ppl_Octagonal_Shape_int32_t_t ph, [ppl_dimension_type](#) var)
- int [ppl_Octagonal_Shape_int32_t_unconstrain_space_dimensions](#) (ppl_Octagonal_Shape_int32_t_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Octagonal_Shape_int32_t_affine_image](#) (ppl_Octagonal_Shape_int32_t_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_int32_t_affine_preimage](#) (ppl_Octagonal_Shape_int32_t_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_int32_t_bounded_affine_image](#) (ppl_Octagonal_Shape_int32_t_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_int32_t_bounded_affine_preimage](#) (ppl_Octagonal_Shape_int32_t_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_int32_t_generalized_affine_image](#) (ppl_Octagonal_Shape_int32_t_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_int32_t_generalized_affine_preimage](#) (ppl_Octagonal_Shape_int32_t_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)

- [int ppl_Octagonal_Shape_int32_t_generalized_affine_image_lhs_rhs](#) (ppl_Octagonal_Shape_int32_t_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- [int ppl_Octagonal_Shape_int32_t_generalized_affine_preimage_lhs_rhs](#) (ppl_Octagonal_Shape_int32_t_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- [int ppl_Octagonal_Shape_int32_t_add_space_dimensions_and_embed](#) (ppl_Octagonal_Shape_int32_t_t ph, [ppl_dimension_type](#) d)
- [int ppl_Octagonal_Shape_int32_t_add_space_dimensions_and_project](#) (ppl_Octagonal_Shape_int32_t_t ph, [ppl_dimension_type](#) d)
- [int ppl_Octagonal_Shape_int32_t_remove_space_dimensions](#) (ppl_Octagonal_Shape_int32_t_t ph, [ppl_dimension_type](#) ds[], size_t n)
- [int ppl_Octagonal_Shape_int32_t_remove_higher_space_dimensions](#) (ppl_Octagonal_Shape_int32_t_t ph, [ppl_dimension_type](#) d)
- [int ppl_Octagonal_Shape_int32_t_expand_space_dimension](#) (ppl_Octagonal_Shape_int32_t_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- [int ppl_Octagonal_Shape_int32_t_fold_space_dimensions](#) (ppl_Octagonal_Shape_int32_t_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- [int ppl_Octagonal_Shape_int32_t_map_space_dimensions](#) (ppl_Octagonal_Shape_int32_t_t ph, [ppl_dimension_type](#) maps[], size_t n)
- [int ppl_Octagonal_Shape_int32_t_drop_some_non_integer_points](#) (ppl_Octagonal_Shape_int32_t_t_t ph, int complexity)
- [int ppl_Octagonal_Shape_int32_t_drop_some_non_integer_points_2](#) (ppl_Octagonal_Shape_int32_t_t_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- [int ppl_Octagonal_Shape_int32_t_external_memory_in_bytes](#) (ppl_const_Octagonal_Shape_int32_t_t ps, size_t *sz)
- [int ppl_Octagonal_Shape_int32_t_total_memory_in_bytes](#) (ppl_const_Octagonal_Shape_int32_t_t_t ps, size_t *sz)
- [int ppl_Octagonal_Shape_int32_t_BHMZ05_widening_assign_with_tokens](#) (ppl_Octagonal_Shape_int32_t_t x, ppl_const_Octagonal_Shape_int32_t_t y, unsigned *tp)
- [int ppl_Octagonal_Shape_int32_t_BHMZ05_widening_assign](#) (ppl_Octagonal_Shape_int32_t_t x, ppl_const_Octagonal_Shape_int32_t_t y)
- [int ppl_Octagonal_Shape_int32_t_widening_assign_with_tokens](#) (ppl_Octagonal_Shape_int32_t_t x, ppl_const_Octagonal_Shape_int32_t_t y, unsigned *tp)
- [int ppl_Octagonal_Shape_int32_t_widening_assign](#) (ppl_Octagonal_Shape_int32_t_t x, ppl_const_Octagonal_Shape_int32_t_t y)
- [int ppl_Octagonal_Shape_int32_t_limited_BHMZ05_extrapolation_assign_with_tokens](#) (ppl_Octagonal_Shape_int32_t_t x, ppl_const_Octagonal_Shape_int32_t_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- [int ppl_Octagonal_Shape_int32_t_limited_CC76_extrapolation_assign_with_tokens](#) (ppl_Octagonal_Shape_int32_t_t x, ppl_const_Octagonal_Shape_int32_t_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- [int ppl_Octagonal_Shape_int32_t_limited_BHMZ05_extrapolation_assign](#) (ppl_Octagonal_Shape_int32_t_t x, ppl_const_Octagonal_Shape_int32_t_t y, ppl_const_Constraint_System_t cs)
- [int ppl_Octagonal_Shape_int32_t_limited_CC76_extrapolation_assign](#) (ppl_Octagonal_Shape_int32_t_t x, ppl_const_Octagonal_Shape_int32_t_t y, ppl_const_Constraint_System_t cs)
- [int ppl_Octagonal_Shape_int32_t_CC76_extrapolation_assign_with_tokens](#) (ppl_Octagonal_Shape_int32_t_t x, ppl_const_Octagonal_Shape_int32_t_t y, unsigned *tp)
- [int ppl_Octagonal_Shape_int32_t_CC76_extrapolation_assign](#) (ppl_Octagonal_Shape_int32_t_t x, ppl_const_Octagonal_Shape_int32_t_t y)

- int [ppl_Octagonal_Shape_int32_t_CC76_narrowing_assign](#) (ppl_Octagonal_Shape_int32_t_t x, ppl_const_Octagonal_Shape_int32_t_t y)
- int [ppl_Octagonal_Shape_int32_t_linear_partition](#) (ppl_const_Octagonal_Shape_int32_t_t x, ppl_const_Octagonal_Shape_int32_t_t y, ppl_Octagonal_Shape_int32_t_t *p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest)
- int [ppl_Octagonal_Shape_int32_t_wrap_assign](#) (ppl_Octagonal_Shape_int32_t_t ph, ppl_dimension_type ds[], size_t n, enum ppl_enum_Bounded_Integer_Type_Width w, enum ppl_enum_Bounded_Integer_Type_Representation r, enum ppl_enum_Bounded_Integer_Type_Overflow o, const ppl_const_Constraint_System_t *pcs, unsigned complexity_threshold, int wrap_individually)
- int [ppl_new_Octagonal_Shape_int32_t_recycle_Constraint_System](#) (ppl_Octagonal_Shape_int32_t_t *pph, ppl_Constraint_System_t cs)
- int [ppl_new_Octagonal_Shape_int32_t_recycle_Congruence_System](#) (ppl_Octagonal_Shape_int32_t_t *pph, ppl_Congruence_System_t cs)
- int [ppl_new_Octagonal_Shape_int32_t_recycle_Generator_System](#) (ppl_Octagonal_Shape_int32_t_t *pph, ppl_Generator_System_t cs)
- int [ppl_assign_Octagonal_Shape_int32_t_from_Octagonal_Shape_int32_t](#) (ppl_Octagonal_Shape_int32_t_t dst, ppl_const_Octagonal_Shape_int32_t_t src)
- int [ppl_Octagonal_Shape_int32_t_add_recycled_constraints](#) (ppl_Octagonal_Shape_int32_t_t ph, ppl_Constraint_System_t cs)
- int [ppl_Octagonal_Shape_int32_t_add_recycled_congruences](#) (ppl_Octagonal_Shape_int32_t_t ph, ppl_Congruence_System_t cs)
- int [ppl_termination_test_MS_Octagonal_Shape_int32_t](#) (ppl_const_Octagonal_Shape_int32_t_t pset)
- int [ppl_termination_test_PR_Octagonal_Shape_int32_t](#) (ppl_const_Octagonal_Shape_int32_t_t pset)
- int [ppl_one_affine_ranking_function_MS_Octagonal_Shape_int32_t](#) (ppl_const_Octagonal_Shape_int32_t_t pset, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_Octagonal_Shape_int32_t](#) (ppl_const_Octagonal_Shape_int32_t_t pset, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_Octagonal_Shape_int32_t](#) (ppl_const_Octagonal_Shape_int32_t_t pset, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_Octagonal_Shape_int32_t](#) (ppl_const_Octagonal_Shape_int32_t_t pset, ppl_Polyhedron_t ph)
- int [ppl_termination_test_MS_Octagonal_Shape_int32_t_2](#) (ppl_const_Octagonal_Shape_int32_t_t pset_before, ppl_const_Octagonal_Shape_int32_t_t pset_after)
- int [ppl_termination_test_PR_Octagonal_Shape_int32_t_2](#) (ppl_const_Octagonal_Shape_int32_t_t pset_before, ppl_const_Octagonal_Shape_int32_t_t pset_after)
- int [ppl_one_affine_ranking_function_MS_Octagonal_Shape_int32_t_2](#) (ppl_const_Octagonal_Shape_int32_t_t pset_before, ppl_const_Octagonal_Shape_int32_t_t pset_after, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_Octagonal_Shape_int32_t_2](#) (ppl_const_Octagonal_Shape_int32_t_t pset_before, ppl_const_Octagonal_Shape_int32_t_t pset_after, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_Octagonal_Shape_int32_t_2](#) (ppl_const_Octagonal_Shape_int32_t_t pset_before, ppl_const_Octagonal_Shape_int32_t_t pset_after, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_Octagonal_Shape_int32_t_2](#) (ppl_const_Octagonal_Shape_int32_t_t pset_before, ppl_const_Octagonal_Shape_int32_t_t pset_after, ppl_Polyhedron_t ph)

10.44.1 Detailed Description

Types and functions for [ppl_Octagonal_Shape_int32_t_tag](#).

10.44.2 Friends And Related Function Documentation

10.44.2.1 `int ppl_all_affine_ranking_functions_MS_Octagonal_Shape_int32_t`
`(ppl_const_Octagonal_Shape_int32_t_t pset, ppl_Polyhedron_t ph)` [[related](#)]

10.44.2.2 `int ppl_all_affine_ranking_functions_MS_Octagonal_Shape_int32_t_2` `(ppl_const_Octagonal_Shape_int32_t_t pset_before, ppl_const_Octagonal_Shape_int32_t_t pset_after, ppl_Polyhedron_t ph)` [[related](#)]

10.44.2.3 `int ppl_all_affine_ranking_functions_PR_Octagonal_Shape_int32_t`
`(ppl_const_Octagonal_Shape_int32_t_t pset, ppl_Polyhedron_t ph)` [[related](#)]

10.44.2.4 `int ppl_all_affine_ranking_functions_PR_Octagonal_Shape_int32_t_2` `(ppl_const_Octagonal_Shape_int32_t_t pset_before, ppl_const_Octagonal_Shape_int32_t_t pset_after, ppl_Polyhedron_t ph)` [[related](#)]

10.44.2.5 `int ppl_assign_Octagonal_Shape_int32_t_from_Octagonal_Shape_int32_t`
`(ppl_Octagonal_Shape_int32_t_t dst, ppl_const_Octagonal_Shape_int32_t_t src)`
[\[related\]](#)

10.44.2.6 `int ppl_delete_Octagonal_Shape_int32_t` `(ppl_const_Octagonal_Shape_int32_t_t ph)`
[\[related\]](#)

10.44.2.7 `int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_double`
`(ppl_Octagonal_Shape_int32_t_t * pph, ppl_const_BD_Shape_double_t ph)`
[\[related\]](#)

- 10.44.2.8** `int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_double_with_complexity`
(`ppl_Octagonal_Shape_int32_t * pph`, `ppl_const_BD_Shape_double_t ph`, `int complexity`) [`related`]
- 10.44.2.9** `int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_float`
(`ppl_Octagonal_Shape_int32_t * pph`, `ppl_const_BD_Shape_float_t ph`) [`related`]
- 10.44.2.10** `int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_float_with_complexity`
(`ppl_Octagonal_Shape_int32_t * pph`, `ppl_const_BD_Shape_float_t ph`, `int complexity`) [`related`]
- 10.44.2.11** `int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_int16_t`
(`ppl_Octagonal_Shape_int32_t * pph`, `ppl_const_BD_Shape_int16_t_t ph`) [`related`]
- 10.44.2.12** `int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_int16_t_with_complexity`
(`ppl_Octagonal_Shape_int32_t * pph`, `ppl_const_BD_Shape_int16_t_t ph`, `int complexity`) [`related`]
- 10.44.2.13** `int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_int32_t`
(`ppl_Octagonal_Shape_int32_t * pph`, `ppl_const_BD_Shape_int32_t_t ph`) [`related`]
- 10.44.2.14** `int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_int32_t_with_complexity`
(`ppl_Octagonal_Shape_int32_t * pph`, `ppl_const_BD_Shape_int32_t_t ph`, `int complexity`) [`related`]
- 10.44.2.15** `int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_int64_t`
(`ppl_Octagonal_Shape_int32_t * pph`, `ppl_const_BD_Shape_int64_t_t ph`) [`related`]

- 10.44.2.16 `int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_int64_t_with_complexity`
(`ppl_Octagonal_Shape_int32_t_t * pph`, `ppl_const_BD_Shape_int64_t_t ph`, `int complexity`) [`related`]
- 10.44.2.17 `int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_int8_t`
(`ppl_Octagonal_Shape_int32_t_t * pph`, `ppl_const_BD_Shape_int8_t_t ph`)
[`related`]
- 10.44.2.18 `int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_int8_t_with_complexity`
(`ppl_Octagonal_Shape_int32_t_t * pph`, `ppl_const_BD_Shape_int8_t_t ph`, `int complexity`) [`related`]
- 10.44.2.19 `int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_long_double`
(`ppl_Octagonal_Shape_int32_t_t * pph`, `ppl_const_BD_Shape_long_double_t_t ph`)
[`related`]
- 10.44.2.20 `int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_long_double_with_complexity`
(`ppl_Octagonal_Shape_int32_t_t * pph`, `ppl_const_BD_Shape_long_double_t_t ph`, `int complexity`) [`related`]
- 10.44.2.21 `int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_mpq_class`
(`ppl_Octagonal_Shape_int32_t_t * pph`, `ppl_const_BD_Shape_mpq_class_t_t ph`)
[`related`]
- 10.44.2.22 `int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_mpq_class_with_complexity`
(`ppl_Octagonal_Shape_int32_t_t * pph`, `ppl_const_BD_Shape_mpq_class_t_t ph`, `int complexity`) [`related`]
- 10.44.2.23 `int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_mpz_class`
(`ppl_Octagonal_Shape_int32_t_t * pph`, `ppl_const_BD_Shape_mpz_class_t_t ph`)
[`related`]

- 10.44.2.24 `int ppl_new_Octagonal_Shape_int32_t_from_BD_Shape_mpz_class_with_complexity`
(`ppl_Octagonal_Shape_int32_t_t * pph`, `ppl_const_BD_Shape_mpz_class_t ph`, `int complexity`) [`related`]
- 10.44.2.25 `int ppl_new_Octagonal_Shape_int32_t_from_C_Polyhedron`
(`ppl_Octagonal_Shape_int32_t_t * pph`, `ppl_const_Polyhedron_t ph`) [`related`]
- 10.44.2.26 `int ppl_new_Octagonal_Shape_int32_t_from_C_Polyhedron_with_complexity`
(`ppl_Octagonal_Shape_int32_t_t * pph`, `ppl_const_Polyhedron_t ph`, `int complexity`)
[`related`]
- 10.44.2.27 `int ppl_new_Octagonal_Shape_int32_t_from_Congruence_System`
(`ppl_Octagonal_Shape_int32_t_t * pph`, `ppl_const_Congruence_System_t cs`)
[`related`]
- 10.44.2.28 `int ppl_new_Octagonal_Shape_int32_t_from_Constraint_System`
(`ppl_Octagonal_Shape_int32_t_t * pph`, `ppl_const_Constraint_System_t cs`)
[`related`]
- 10.44.2.29 `int ppl_new_Octagonal_Shape_int32_t_from_Double_Box` (`ppl_Octagonal_Shape_int32_t_t * pph`, `ppl_const_Double_Box_t ph`)
[`related`]
- 10.44.2.30 `int ppl_new_Octagonal_Shape_int32_t_from_Double_Box_with_complexity`
(`ppl_Octagonal_Shape_int32_t_t * pph`, `ppl_const_Double_Box_t ph`, `int complexity`)
[`related`]
- 10.44.2.31 `int ppl_new_Octagonal_Shape_int32_t_from_Float_Box` (`ppl_Octagonal_Shape_int32_t_t * pph`, `ppl_const_Float_Box_t ph`)
[`related`]

- 10.44.2.32 `int ppl_new_Octagonal_Shape_int32_t_from_Float_Box_with_complexity`
`(ppl_Octagonal_Shape_int32_t_t * pph, ppl_const_Float_Box_t ph, int complexity)`
`[related]`

- 10.44.2.33 `int ppl_new_Octagonal_Shape_int32_t_from_Generator_System`
`(ppl_Octagonal_Shape_int32_t_t * pph, ppl_const_Generator_System_t cs)`
`[related]`

- 10.44.2.34 `int ppl_new_Octagonal_Shape_int32_t_from_Grid` `(ppl_Octagonal_Shape_int32_t_t *`
`pph, ppl_const_Grid_t ph)` `[related]`

- 10.44.2.35 `int ppl_new_Octagonal_Shape_int32_t_from_Grid_with_complexity`
`(ppl_Octagonal_Shape_int32_t_t * pph, ppl_const_Grid_t ph, int complexity)`
`[related]`

- 10.44.2.36 `int ppl_new_Octagonal_Shape_int32_t_from_Int16_Box` `(ppl_`
`Octagonal_Shape_int32_t_t * pph, ppl_const_Int16_Box_t ph)`
`[related]`

- 10.44.2.37 `int ppl_new_Octagonal_Shape_int32_t_from_Int16_Box_with_complexity`
`(ppl_Octagonal_Shape_int32_t_t * pph, ppl_const_Int16_Box_t ph, int complexity)`
`[related]`

- 10.44.2.38 `int ppl_new_Octagonal_Shape_int32_t_from_Int32_Box` `(ppl_`
`Octagonal_Shape_int32_t_t * pph, ppl_const_Int32_Box_t ph)`
`[related]`

- 10.44.2.39 `int ppl_new_Octagonal_Shape_int32_t_from_Int32_Box_with_complexity`
`(ppl_Octagonal_Shape_int32_t_t * pph, ppl_const_Int32_Box_t ph, int complexity)`
`[related]`

- 10.44.2.40** `int ppl_new_Octagonal_Shape_int32_t_from_Int64_Box (ppl_Octagonal_Shape_int32_t_t * pph, ppl_const_Int64_Box_t ph)`
[related]
- 10.44.2.41** `int ppl_new_Octagonal_Shape_int32_t_from_Int64_Box_with_complexity (ppl_Octagonal_Shape_int32_t_t * pph, ppl_const_Int64_Box_t ph, int complexity)`
[related]
- 10.44.2.42** `int ppl_new_Octagonal_Shape_int32_t_from_Int8_Box (ppl_Octagonal_Shape_int32_t_t * pph, ppl_const_Int8_Box_t ph)`
[related]
- 10.44.2.43** `int ppl_new_Octagonal_Shape_int32_t_from_Int8_Box_with_complexity (ppl_Octagonal_Shape_int32_t_t * pph, ppl_const_Int8_Box_t ph, int complexity)`
[related]
- 10.44.2.44** `int ppl_new_Octagonal_Shape_int32_t_from_Long_Double_Box (ppl_Octagonal_Shape_int32_t_t * pph, ppl_const_Long_Double_Box_t ph)`
[related]
- 10.44.2.45** `int ppl_new_Octagonal_Shape_int32_t_from_Long_Double_Box_with_complexity (ppl_Octagonal_Shape_int32_t_t * pph, ppl_const_Long_Double_Box_t ph, int complexity)` [related]
- 10.44.2.46** `int ppl_new_Octagonal_Shape_int32_t_from_NNC_Polyhedron (ppl_Octagonal_Shape_int32_t_t * pph, ppl_const_Polyhedron_t ph)` [related]
- 10.44.2.47** `int ppl_new_Octagonal_Shape_int32_t_from_NNC_Polyhedron_with_complexity (ppl_Octagonal_Shape_int32_t_t * pph, ppl_const_Polyhedron_t ph, int complexity)`
[related]

- 10.44.2.48 `int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_double`
`(ppl_Octagonal_Shape_int32_t_t * pph, ppl_const_Octagonal_Shape_double_t ph)`
`[related]`
- 10.44.2.49 `int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_-`
`double_with_complexity (ppl_Octagonal_Shape_int32_t_t * pph,`
`ppl_const_Octagonal_Shape_double_t ph, int complexity) [related]`
- 10.44.2.50 `int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_float`
`(ppl_Octagonal_Shape_int32_t_t * pph, ppl_const_Octagonal_Shape_float_t ph)`
`[related]`
- 10.44.2.51 `int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_float_with_complexity`
`(ppl_Octagonal_Shape_int32_t_t * pph, ppl_const_Octagonal_Shape_float_t ph, int`
`complexity) [related]`
- 10.44.2.52 `int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_int16_t`
`(ppl_Octagonal_Shape_int32_t_t * pph, ppl_const_Octagonal_Shape_int16_t_t ph)`
`[related]`
- 10.44.2.53 `int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_-`
`int16_t_with_complexity (ppl_Octagonal_Shape_int32_t_t * pph,`
`ppl_const_Octagonal_Shape_int16_t_t ph, int complexity) [related]`
- 10.44.2.54 `int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_int32_t`
`(ppl_Octagonal_Shape_int32_t_t * pph, ppl_const_Octagonal_Shape_int32_t_t ph)`
`[related]`
- 10.44.2.55 `int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_-`
`int32_t_with_complexity (ppl_Octagonal_Shape_int32_t_t * pph,`
`ppl_const_Octagonal_Shape_int32_t_t ph, int complexity) [related]`

- 10.44.2.56 `int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_int64_t`
`(ppl_Octagonal_Shape_int32_t_t * pph, ppl_const_Octagonal_Shape_int64_t_t ph)`
`[related]`
- 10.44.2.57 `int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_-`
`int64_t_with_complexity (ppl_Octagonal_Shape_int32_t_t * pph,`
`ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)` `[related]`
- 10.44.2.58 `int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_int8_t`
`(ppl_Octagonal_Shape_int32_t_t * pph, ppl_const_Octagonal_Shape_int8_t_t ph)`
`[related]`
- 10.44.2.59 `int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_-`
`int8_t_with_complexity (ppl_Octagonal_Shape_int32_t_t * pph,`
`ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)` `[related]`
- 10.44.2.60 `int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_long_double`
`(ppl_Octagonal_Shape_int32_t_t * pph, ppl_const_Octagonal_Shape_long_double_t`
`ph)` `[related]`
- 10.44.2.61 `int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_-`
`long_double_with_complexity (ppl_Octagonal_Shape_int32_t_t * pph,`
`ppl_const_Octagonal_Shape_long_double_t_t ph, int complexity)` `[related]`
- 10.44.2.62 `int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_mpq_class`
`(ppl_Octagonal_Shape_int32_t_t * pph, ppl_const_Octagonal_Shape_mpq_class_t_t ph)`
`[related]`
- 10.44.2.63 `int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_-`
`mpq_class_with_complexity (ppl_Octagonal_Shape_int32_t_t * pph,`
`ppl_const_Octagonal_Shape_mpq_class_t_t ph, int complexity)` `[related]`

- 10.44.2.64 `int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_mpz_class`
`(ppl_Octagonal_Shape_int32_t_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph)`
`[related]`
- 10.44.2.65 `int ppl_new_Octagonal_Shape_int32_t_from_Octagonal_Shape_-`
`mpz_class_with_complexity (ppl_Octagonal_Shape_int32_t_t * pph,`
`ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)` `[related]`
- 10.44.2.66 `int ppl_new_Octagonal_Shape_int32_t_from_Rational_Box`
`(ppl_Octagonal_Shape_int32_t_t * pph, ppl_const_Rational_Box_t ph)` `[related]`
- 10.44.2.67 `int ppl_new_Octagonal_Shape_int32_t_from_Rational_Box_with_complexity`
`(ppl_Octagonal_Shape_int32_t_t * pph, ppl_const_Rational_Box_t ph, int complexity)`
`[related]`
- 10.44.2.68 `int ppl_new_Octagonal_Shape_int32_t_from_space_dimension`
`(ppl_Octagonal_Shape_int32_t_t * pph, ppl_dimension_type d, int empty)`
`[related]`
- 10.44.2.69 `int ppl_new_Octagonal_Shape_int32_t_from_Uint16_Box (ppl_-`
`Octagonal_Shape_int32_t_t * pph, ppl_const_Uint16_Box_t ph)`
`[related]`
- 10.44.2.70 `int ppl_new_Octagonal_Shape_int32_t_from_Uint16_Box_with_complexity`
`(ppl_Octagonal_Shape_int32_t_t * pph, ppl_const_Uint16_Box_t ph, int complexity)`
`[related]`
- 10.44.2.71 `int ppl_new_Octagonal_Shape_int32_t_from_Uint32_Box (ppl_-`
`Octagonal_Shape_int32_t_t * pph, ppl_const_Uint32_Box_t ph)`
`[related]`

- 10.44.2.72** `int ppl_new_Octagonal_Shape_int32_t_from_Uint32_Box_with_complexity`
 (`ppl_Octagonal_Shape_int32_t_t * pph`, `ppl_const_Uint32_Box_t ph`, `int complexity`)
 [related]
- 10.44.2.73** `int ppl_new_Octagonal_Shape_int32_t_from_Uint64_Box` (`ppl_-`
`Octagonal_Shape_int32_t_t * pph`, `ppl_const_Uint64_Box_t ph`)
 [related]
- 10.44.2.74** `int ppl_new_Octagonal_Shape_int32_t_from_Uint64_Box_with_complexity`
 (`ppl_Octagonal_Shape_int32_t_t * pph`, `ppl_const_Uint64_Box_t ph`, `int complexity`)
 [related]
- 10.44.2.75** `int ppl_new_Octagonal_Shape_int32_t_from_Uint8_Box` (`ppl_-`
`Octagonal_Shape_int32_t_t * pph`, `ppl_const_Uint8_Box_t ph`)
 [related]
- 10.44.2.76** `int ppl_new_Octagonal_Shape_int32_t_from_Uint8_Box_with_complexity`
 (`ppl_Octagonal_Shape_int32_t_t * pph`, `ppl_const_Uint8_Box_t ph`, `int complexity`)
 [related]
- 10.44.2.77** `int ppl_new_Octagonal_Shape_int32_t_from_Z_Box` (`ppl_Octagonal_Shape_int32_t_t`
`* pph`, `ppl_const_Z_Box_t ph`) [related]
- 10.44.2.78** `int ppl_new_Octagonal_Shape_int32_t_from_Z_Box_with_complexity`
 (`ppl_Octagonal_Shape_int32_t_t * pph`, `ppl_const_Z_Box_t ph`, `int complexity`)
 [related]
- 10.44.2.79** `int ppl_new_Octagonal_Shape_int32_t_recycle_Congruence_System`
 (`ppl_Octagonal_Shape_int32_t_t * pph`, `ppl_Congruence_System_t cs`) [related]

- 10.44.2.80 `int ppl_new_Octagonal_Shape_int32_t_recycle_Constraint_System`
`(ppl_Octagonal_Shape_int32_t_t * pph, ppl_Constraint_System_t cs)` [`related`]

- 10.44.2.81 `int ppl_new_Octagonal_Shape_int32_t_recycle_Generator_System`
`(ppl_Octagonal_Shape_int32_t_t * pph, ppl_Generator_System_t cs)` [`related`]

- 10.44.2.82 `int ppl_Octagonal_Shape_int32_t_add_congruence` (`ppl_Octagonal_Shape_int32_t_t`
`ph, ppl_const_Congruence_t c`) [`related`]

- 10.44.2.83 `int ppl_Octagonal_Shape_int32_t_add_congruences` (`ppl_Octagonal_Shape_int32_t_t`
`ph, ppl_const_Congruence_System_t cs`) [`related`]

- 10.44.2.84 `int ppl_Octagonal_Shape_int32_t_add_constraint` (`ppl_Octagonal_Shape_int32_t_t`
`ph, ppl_const_Constraint_t c`) [`related`]

- 10.44.2.85 `int ppl_Octagonal_Shape_int32_t_add_constraints` (`ppl_Octagonal_Shape_int32_t_t`
`ph, ppl_const_Constraint_System_t cs`) [`related`]

- 10.44.2.86 `int ppl_Octagonal_Shape_int32_t_add_recycled_congruences`
`(ppl_Octagonal_Shape_int32_t_t ph, ppl_Congruence_System_t cs)` [`related`]

- 10.44.2.87 `int ppl_Octagonal_Shape_int32_t_add_recycled_constraints`
`(ppl_Octagonal_Shape_int32_t_t ph, ppl_Constraint_System_t cs)` [`related`]

- 10.44.2.88 `int ppl_Octagonal_Shape_int32_t_add_space_dimensions_and_embed`
`(ppl_Octagonal_Shape_int32_t_t ph, ppl_dimension_type d)` [`related`]

- 10.44.2.89 `int ppl_Octagonal_Shape_int32_t_add_space_dimensions_and_project`
(`ppl_Octagonal_Shape_int32_t_t ph`, `ppl_dimension_type d`) [`related`]
- 10.44.2.90 `int ppl_Octagonal_Shape_int32_t_affine_dimension` (`ppl_const_Octagonal_Shape_int32_t_t ph`, `ppl_dimension_type * m`) [`related`]
- 10.44.2.91 `int ppl_Octagonal_Shape_int32_t_affine_image` (`ppl_Octagonal_Shape_int32_t_t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`) [`related`]
- 10.44.2.92 `int ppl_Octagonal_Shape_int32_t_affine_preimage` (`ppl_Octagonal_Shape_int32_t_t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`) [`related`]
- 10.44.2.93 `int ppl_Octagonal_Shape_int32_t_BHMZ05_widening_assign`
(`ppl_Octagonal_Shape_int32_t_t x`, `ppl_const_Octagonal_Shape_int32_t_t y`) [`related`]
- 10.44.2.94 `int ppl_Octagonal_Shape_int32_t_BHMZ05_widening_assign_with_tokens`
(`ppl_Octagonal_Shape_int32_t_t x`, `ppl_const_Octagonal_Shape_int32_t_t y`, `unsigned * tp`) [`related`]
- 10.44.2.95 `int ppl_Octagonal_Shape_int32_t_bounded_affine_image` (`ppl_Octagonal_Shape_int32_t_t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t lb`, `ppl_const_Linear_Expression_t ub`, `ppl_const_Coefficient_t d`) [`related`]
- 10.44.2.96 `int ppl_Octagonal_Shape_int32_t_bounded_affine_preimage` (`ppl_Octagonal_Shape_int32_t_t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t lb`, `ppl_const_Linear_Expression_t ub`, `ppl_const_Coefficient_t d`) [`related`]

- 10.44.2.97 `int ppl_Octagonal_Shape_int32_t_bounds_from_above (ppl_const-Octagonal_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le)`
[related]
- 10.44.2.98 `int ppl_Octagonal_Shape_int32_t_bounds_from_below (ppl_const-Octagonal_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le)`
[related]
- 10.44.2.99 `int ppl_Octagonal_Shape_int32_t_CC76_extrapolation_assign (ppl_Octagonal_Shape_int32_t_t x, ppl_const_Octagonal_Shape_int32_t_t y)`
[related]
- 10.44.2.100 `int ppl_Octagonal_Shape_int32_t_CC76_extrapolation_assign_with_tokens (ppl_Octagonal_Shape_int32_t_t x, ppl_const_Octagonal_Shape_int32_t_t y, unsigned * tp)` [related]
- 10.44.2.101 `int ppl_Octagonal_Shape_int32_t_CC76_narrowing_assign (ppl_Octagonal_Shape_int32_t_t x, ppl_const_Octagonal_Shape_int32_t_t y)`
[related]
- 10.44.2.102 `int ppl_Octagonal_Shape_int32_t_concatenate_assign (ppl_Octagonal_Shape_int32_t_t x, ppl_const_Octagonal_Shape_int32_t_t y)`
[related]
- 10.44.2.103 `int ppl_Octagonal_Shape_int32_t_constrains (ppl_Octagonal_Shape_int32_t_t ph, ppl_dimension_type var)` [related]
- 10.44.2.104 `int ppl_Octagonal_Shape_int32_t_contains_integer_point (ppl_const_Octagonal_Shape_int32_t_t ph)` [related]

- 10.44.2.105 `int ppl_Octagonal_Shape_int32_t_contains_Octagonal_Shape_int32_t`
 (`ppl_const_Octagonal_Shape_int32_t_t x`, `ppl_const_Octagonal_Shape_int32_t_t y`)
 [`related`]
- 10.44.2.106 `int ppl_Octagonal_Shape_int32_t_difference_assign` (`ppl_Octagonal_Shape_int32_t_t`
`x`, `ppl_const_Octagonal_Shape_int32_t_t y`) [`related`]
- 10.44.2.107 `int ppl_Octagonal_Shape_int32_t_drop_some_non_integer_points`
 (`ppl_Octagonal_Shape_int32_t_t ph`, `int complexity`) [`related`]
- 10.44.2.108 `int ppl_Octagonal_Shape_int32_t_drop_some_non_integer_points_2`
 (`ppl_Octagonal_Shape_int32_t_t ph`, `ppl_dimension_type ds[]`, `size_t n`, `int`
`complexity`) [`related`]
- 10.44.2.109 `int ppl_Octagonal_Shape_int32_t_equals_Octagonal_Shape_int32_t`
 (`ppl_const_Octagonal_Shape_int32_t_t x`, `ppl_const_Octagonal_Shape_int32_t_t y`)
 [`related`]
- 10.44.2.110 `int ppl_Octagonal_Shape_int32_t_expand_space_dimension` (`ppl_Octagonal_-`
`Shape_int32_t_t ph`, `ppl_dimension_type d`, `ppl_dimension_type m`)
 [`related`]
- 10.44.2.111 `int ppl_Octagonal_Shape_int32_t_external_memory_in_bytes`
 (`ppl_const_Octagonal_Shape_int32_t_t ps`, `size_t * sz`) [`related`]
- 10.44.2.112 `int ppl_Octagonal_Shape_int32_t_fold_space_dimensions` (`ppl_Octagonal_-`
`Shape_int32_t_t ph`, `ppl_dimension_type ds[]`, `size_t n`, `ppl_dimension_type d`)
 [`related`]

- 10.44.2.113 `int ppl_Octagonal_Shape_int32_t frequency (ppl_const_Octagonal_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)` [`related`]
- 10.44.2.114 `int ppl_Octagonal_Shape_int32_t generalized_affine_image (ppl_Octagonal_Shape_int32_t_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.44.2.115 `int ppl_Octagonal_Shape_int32_t generalized_affine_image_lhs_rhs (ppl_Octagonal_Shape_int32_t_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` [`related`]
- 10.44.2.116 `int ppl_Octagonal_Shape_int32_t generalized_affine_preimage (ppl_Octagonal_Shape_int32_t_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.44.2.117 `int ppl_Octagonal_Shape_int32_t generalized_affine_preimage_lhs_rhs (ppl_Octagonal_Shape_int32_t_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` [`related`]
- 10.44.2.118 `int ppl_Octagonal_Shape_int32_t get_congruences (ppl_const_Octagonal_Shape_int32_t_t ph, ppl_const_Congruence_System_t * pcs)` [`related`]
- 10.44.2.119 `int ppl_Octagonal_Shape_int32_t get_constraints (ppl_const_Octagonal_Shape_int32_t_t ph, ppl_const_Constraint_System_t * pcs)` [`related`]

- 10.44.2.120 `int ppl_Octagonal_Shape_int32_t_get_minimized_congruences`
(`ppl_const_Octagonal_Shape_int32_t_t ph`, `ppl_const_Congruence_System_t * pcs`)
[related]
- 10.44.2.121 `int ppl_Octagonal_Shape_int32_t_get_minimized_constraints`
(`ppl_const_Octagonal_Shape_int32_t_t ph`, `ppl_const_Constraint_System_t * pcs`)
[related]
- 10.44.2.122 `int ppl_Octagonal_Shape_int32_t_intersection_assign` (`ppl_Octagonal_Shape_int32_t_t x`, `ppl_const_Octagonal_Shape_int32_t_t y`)
[related]
- 10.44.2.123 `int ppl_Octagonal_Shape_int32_t_is_bounded` (`ppl_const_Octagonal_Shape_int32_t_t ph`) [related]
- 10.44.2.124 `int ppl_Octagonal_Shape_int32_t_is_discrete` (`ppl_const_Octagonal_Shape_int32_t_t ph`) [related]
- 10.44.2.125 `int ppl_Octagonal_Shape_int32_t_is_disjoint_from_Octagonal_Shape_int32_t`
(`ppl_const_Octagonal_Shape_int32_t_t x`, `ppl_const_Octagonal_Shape_int32_t_t y`)
[related]
- 10.44.2.126 `int ppl_Octagonal_Shape_int32_t_is_empty` (`ppl_const_Octagonal_Shape_int32_t_t ph`) [related]
- 10.44.2.127 `int ppl_Octagonal_Shape_int32_t_is_topologically_closed`
(`ppl_const_Octagonal_Shape_int32_t_t ph`) [related]
- 10.44.2.128 `int ppl_Octagonal_Shape_int32_t_is_universe` (`ppl_const_Octagonal_Shape_int32_t_t ph`) [related]

- 10.44.2.129 `int ppl_Octagonal_Shape_int32_t_limited_BHMZ05_extrapolation_assign`
`(ppl_Octagonal_Shape_int32_t tx, ppl_const_Octagonal_Shape_int32_t ty,`
`ppl_const_Constraint_System_t cs) [related]`
- 10.44.2.130 `int ppl_Octagonal_Shape_int32_t_limited_BHMZ05_extrapolation_assign_with_`
`tokens (ppl_Octagonal_Shape_int32_t tx, ppl_const_Octagonal_Shape_int32_t ty,`
`ppl_const_Constraint_System_t cs, unsigned * tp) [related]`
- 10.44.2.131 `int ppl_Octagonal_Shape_int32_t_limited_CC76_extrapolation_assign`
`(ppl_Octagonal_Shape_int32_t tx, ppl_const_Octagonal_Shape_int32_t ty,`
`ppl_const_Constraint_System_t cs) [related]`
- 10.44.2.132 `int ppl_Octagonal_Shape_int32_t_limited_CC76_extrapolation_assign_with_tokens`
`(ppl_Octagonal_Shape_int32_t tx, ppl_const_Octagonal_Shape_int32_t ty,`
`ppl_const_Constraint_System_t cs, unsigned * tp) [related]`
- 10.44.2.133 `int ppl_Octagonal_Shape_int32_t_linear_partition (ppl_const_Octagonal_Shape_`
`int32_t tx, ppl_const_Octagonal_Shape_int32_t ty, ppl_Octagonal_Shape_int32_t`
`* p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t * p_rest) [related]`
- 10.44.2.134 `int ppl_Octagonal_Shape_int32_t_map_space_dimensions (ppl_`
`Octagonal_Shape_int32_t ph, ppl_dimension_type maps[], size_t n)`
`[related]`
- 10.44.2.135 `int ppl_Octagonal_Shape_int32_t_maximize (ppl_const_Octagonal_Shape_int32_t`
`ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t`
`ext_d, int * poptimum) [related]`
- 10.44.2.136 `int ppl_Octagonal_Shape_int32_t_maximize_with_point (ppl_const_Octagonal_`
`Shape_int32_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n,`
`ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point) [related]`

- 10.44.2.137 `int ppl_Octagonal_Shape_int32_t_minimize (ppl_const_Octagonal_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)` [related]
- 10.44.2.138 `int ppl_Octagonal_Shape_int32_t_minimize_with_point (ppl_const_Octagonal_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` [related]
- 10.44.2.139 `int ppl_Octagonal_Shape_int32_t_OK (ppl_const_Octagonal_Shape_int32_t_t ph)` [related]
- 10.44.2.140 `int ppl_Octagonal_Shape_int32_t_refine_with_congruence (ppl_Octagonal_Shape_int32_t_t ph, ppl_const_Congruence_t c)` [related]
- 10.44.2.141 `int ppl_Octagonal_Shape_int32_t_refine_with_congruences (ppl_Octagonal_Shape_int32_t_t ph, ppl_const_Congruence_System_t cs)` [related]
- 10.44.2.142 `int ppl_Octagonal_Shape_int32_t_refine_with_constraint (ppl_Octagonal_Shape_int32_t_t ph, ppl_const_Constraint_t c)` [related]
- 10.44.2.143 `int ppl_Octagonal_Shape_int32_t_refine_with_constraints (ppl_Octagonal_Shape_int32_t_t ph, ppl_const_Constraint_System_t cs)` [related]
- 10.44.2.144 `int ppl_Octagonal_Shape_int32_t_relation_with_Congruence (ppl_const_Octagonal_Shape_int32_t_t ph, ppl_const_Congruence_t c)` [related]
- 10.44.2.145 `int ppl_Octagonal_Shape_int32_t_relation_with_Constraint (ppl_const_Octagonal_Shape_int32_t_t ph, ppl_const_Constraint_t c)` [related]

- 10.44.2.146 `int ppl_Octagonal_Shape_int32_t_relation_with_Generator`
`(ppl_const_Octagonal_Shape_int32_t_t ph, ppl_const_Generator_t c)` [`related`]
- 10.44.2.147 `int ppl_Octagonal_Shape_int32_t_remove_higher_space_dimensions`
`(ppl_Octagonal_Shape_int32_t_t ph, ppl_dimension_type d)` [`related`]
- 10.44.2.148 `int ppl_Octagonal_Shape_int32_t_remove_space_dimensions`
`(ppl_Octagonal_Shape_int32_t_t ph, ppl_dimension_type ds[], size_t n)`
`[related]`
- 10.44.2.149 `int ppl_Octagonal_Shape_int32_t_simplify_using_context_assign`
`(ppl_Octagonal_Shape_int32_t_t x, ppl_const_Octagonal_Shape_int32_t_t y)`
`[related]`
- 10.44.2.150 `int ppl_Octagonal_Shape_int32_t_space_dimension` `(ppl_const_`
`Octagonal_Shape_int32_t_t ph, ppl_dimension_type * m)`
`[related]`
- 10.44.2.151 `int ppl_Octagonal_Shape_int32_t_strictly_contains_Octagonal_Shape_int32_t`
`(ppl_const_Octagonal_Shape_int32_t_t x, ppl_const_Octagonal_Shape_int32_t_t y)`
`[related]`
- 10.44.2.152 `int ppl_Octagonal_Shape_int32_t_time_elapse_assign` `(ppl_Octagonal_`
`Shape_int32_t_t x, ppl_const_Octagonal_Shape_int32_t_t y)`
`[related]`
- 10.44.2.153 `int ppl_Octagonal_Shape_int32_t_topological_closure_assign`
`(ppl_Octagonal_Shape_int32_t_t ph)` [`related`]

- 10.44.2.154 `int ppl_Octagonal_Shape_int32_t_total_memory_in_bytes`
 (`ppl_const_Octagonal_Shape_int32_t_t ps`, `size_t * sz`) [`related`]
- 10.44.2.155 `int ppl_Octagonal_Shape_int32_t_unconstrain_space_dimension`
 (`ppl_Octagonal_Shape_int32_t_t ph`, `ppl_dimension_type var`) [`related`]
- 10.44.2.156 `int ppl_Octagonal_Shape_int32_t_unconstrain_space_dimensions`
 (`ppl_Octagonal_Shape_int32_t_t ph`, `ppl_dimension_type ds[]`, `size_t n`)
 [`related`]
- 10.44.2.157 `int ppl_Octagonal_Shape_int32_t_upper_bound_assign` (`ppl_-`
`Octagonal_Shape_int32_t_t x`, `ppl_const_Octagonal_Shape_int32_t_t y`)
 [`related`]
- 10.44.2.158 `int ppl_Octagonal_Shape_int32_t_upper_bound_assign_if_exact`
 (`ppl_Octagonal_Shape_int32_t_t x`, `ppl_const_Octagonal_Shape_int32_t_t y`)
 [`related`]
- 10.44.2.159 `int ppl_Octagonal_Shape_int32_t_widening_assign` (`ppl_Octagonal_Shape_int32_t_t`
`x`, `ppl_const_Octagonal_Shape_int32_t_t y`) [`related`]
- 10.44.2.160 `int ppl_Octagonal_Shape_int32_t_widening_assign_with_tokens`
 (`ppl_Octagonal_Shape_int32_t_t x`, `ppl_const_Octagonal_Shape_int32_t_t y`,
`unsigned * tp`) [`related`]
- 10.44.2.161 `int ppl_Octagonal_Shape_int32_t_wrap_assign` (`ppl_Octagonal_Shape_int32_t_t ph`,
`ppl_dimension_type ds[]`, `size_t n`, `enum ppl_enum_Bounded_Integer_Type_Width`
`w`, `enum ppl_enum_Bounded_Integer_Type_Representation r`, `enum`
`ppl_enum_Bounded_Integer_Type_Overflow o`, `const ppl_const_Constraint_System_t`
`* pcs`, `unsigned complexity_threshold`, `int wrap_individually`) [`related`]

- 10.44.2.162 `int ppl_one_affine_ranking_function_MS_Octagonal_Shape_int32_t`
`(ppl_const_Octagonal_Shape_int32_t_t pset, ppl_Generator_t point)` [`related`]

- 10.44.2.163 `int ppl_one_affine_ranking_function_MS_Octagonal_Shape_int32_t_2` (`ppl_const_Octagonal_Shape_int32_t_t pset_before`, `ppl_const_Octagonal_Shape_int32_t_t pset_after`, `ppl_Generator_t point`) [`related`]

- 10.44.2.164 `int ppl_one_affine_ranking_function_PR_Octagonal_Shape_int32_t`
`(ppl_const_Octagonal_Shape_int32_t_t pset, ppl_Generator_t point)` [`related`]

- 10.44.2.165 `int ppl_one_affine_ranking_function_PR_Octagonal_Shape_int32_t_2` (`ppl_const_Octagonal_Shape_int32_t_t pset_before`, `ppl_const_Octagonal_Shape_int32_t_t pset_after`, `ppl_Generator_t point`) [`related`]

- 10.44.2.166 `int ppl_termination_test_MS_Octagonal_Shape_int32_t`
`(ppl_const_Octagonal_Shape_int32_t_t pset)` [`related`]

- 10.44.2.167 `int ppl_termination_test_MS_Octagonal_Shape_int32_t_2` (`ppl_const_Octagonal_Shape_int32_t_t pset_before`, `ppl_const_Octagonal_Shape_int32_t_t pset_after`) [`related`]

- 10.44.2.168 `int ppl_termination_test_PR_Octagonal_Shape_int32_t`
`(ppl_const_Octagonal_Shape_int32_t_t pset)` [`related`]

- 10.44.2.169 `int ppl_termination_test_PR_Octagonal_Shape_int32_t_2` (`ppl_const_Octagonal_Shape_int32_t_t pset_before`, `ppl_const_Octagonal_Shape_int32_t_t pset_after`) [`related`]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.45 ppl_Octagonal_Shape_int64_t_tag Interface Reference

Types and functions for `ppl_Octagonal_Shape_int64_t_tag`.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Octagonal_Shape_int64_t (ppl_const_Octagonal_Shape_int64_t_t ph)`
- `int ppl_new_Octagonal_Shape_int64_t_from_space_dimension (ppl_Octagonal_Shape_int64_t_t *pph, ppl_dimension_type d, int empty)`
- `int ppl_new_Octagonal_Shape_int64_t_from_Int8_Box (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Int8_Box_t ph)`
- `int ppl_new_Octagonal_Shape_int64_t_from_Int16_Box (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Int16_Box_t ph)`
- `int ppl_new_Octagonal_Shape_int64_t_from_Int32_Box (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Int32_Box_t ph)`
- `int ppl_new_Octagonal_Shape_int64_t_from_Int64_Box (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Int64_Box_t ph)`
- `int ppl_new_Octagonal_Shape_int64_t_from_Uint8_Box (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Uint8_Box_t ph)`
- `int ppl_new_Octagonal_Shape_int64_t_from_Uint16_Box (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Uint16_Box_t ph)`
- `int ppl_new_Octagonal_Shape_int64_t_from_Uint32_Box (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Uint32_Box_t ph)`
- `int ppl_new_Octagonal_Shape_int64_t_from_Uint64_Box (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Uint64_Box_t ph)`
- `int ppl_new_Octagonal_Shape_int64_t_from_Z_Box (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Z_Box_t ph)`
- `int ppl_new_Octagonal_Shape_int64_t_from_Rational_Box (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Rational_Box_t ph)`
- `int ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_int8_t (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_BD_Shape_int8_t_t ph)`
- `int ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_int16_t (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_BD_Shape_int16_t_t ph)`
- `int ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_int32_t (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_BD_Shape_int32_t_t ph)`
- `int ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_int64_t (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_BD_Shape_int64_t_t ph)`
- `int ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_mpz_class (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_BD_Shape_mpz_class_t ph)`
- `int ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_mpq_class (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_BD_Shape_mpq_class_t ph)`
- `int ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_int8_t (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph)`
- `int ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_int16_t (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph)`
- `int ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_int32_t (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph)`

- [int ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_int64_t](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph)
- [int ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_mpz_class](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph)
- [int ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_mpq_class](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph)
- [int ppl_new_Octagonal_Shape_int64_t_from_C_Polyhedron](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Polyhedron_t ph)
- [int ppl_new_Octagonal_Shape_int64_t_from_NNC_Polyhedron](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Polyhedron_t ph)
- [int ppl_new_Octagonal_Shape_int64_t_from_Grid](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Grid_t ph)
- [int ppl_new_Octagonal_Shape_int64_t_from_Float_Box](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Float_Box_t ph)
- [int ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_float](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_BD_Shape_float_t ph)
- [int ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_float](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Octagonal_Shape_float_t ph)
- [int ppl_new_Octagonal_Shape_int64_t_from_Double_Box](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Double_Box_t ph)
- [int ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_double](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_BD_Shape_double_t ph)
- [int ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_double](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Octagonal_Shape_double_t ph)
- [int ppl_new_Octagonal_Shape_int64_t_from_Long_Double_Box](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Long_Double_Box_t ph)
- [int ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_long_double](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_BD_Shape_long_double_t ph)
- [int ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_long_double](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Octagonal_Shape_long_double_t ph)
- [int ppl_new_Octagonal_Shape_int64_t_from_Int8_Box_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Int8_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int64_t_from_Int16_Box_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Int16_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int64_t_from_Int32_Box_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Int32_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int64_t_from_Int64_Box_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Int64_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int64_t_from_Uint8_Box_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Uint8_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int64_t_from_Uint16_Box_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Uint16_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int64_t_from_Uint32_Box_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Uint32_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int64_t_from_Uint64_Box_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Uint64_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int64_t_from_Z_Box_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Z_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int64_t_from_Rational_Box_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Rational_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_int8_t_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)

- int [ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_int16_t_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_int32_t_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_int64_t_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_mpz_class_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_mpq_class_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_int8_t_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_int16_t_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_int32_t_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_int64_t_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_mpz_class_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_mpq_class_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int64_t_from_C_Polyhedron_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int64_t_from_NNC_Polyhedron_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int64_t_from_Grid_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Grid_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int64_t_from_Float_Box_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Float_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_float_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_BD_Shape_float_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_float_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int64_t_from_Double_Box_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Double_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_double_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_BD_Shape_double_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_double_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int64_t_from_Long_Double_Box_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_long_double_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_long_double_with_complexity](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int64_t_from_Constraint_System](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Constraint_System_t cs)

- int [ppl_new_Octagonal_Shape_int64_t_from_Congruence_System](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Congruence_System_t cs)
- int [ppl_new_Octagonal_Shape_int64_t_from_Generator_System](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_const_Generator_System_t cs)
- int [ppl_Octagonal_Shape_int64_t_space_dimension](#) (ppl_const_Octagonal_Shape_int64_t_t ph, ppl_dimension_type *m)
- int [ppl_Octagonal_Shape_int64_t_affine_dimension](#) (ppl_const_Octagonal_Shape_int64_t_t ph, ppl_dimension_type *m)
- int [ppl_Octagonal_Shape_int64_t_relation_with_Constraint](#) (ppl_const_Octagonal_Shape_int64_t_t ph, ppl_const_Constraint_t c)
- int [ppl_Octagonal_Shape_int64_t_relation_with_Generator](#) (ppl_const_Octagonal_Shape_int64_t_t ph, ppl_const_Generator_t c)
- int [ppl_Octagonal_Shape_int64_t_relation_with_Congruence](#) (ppl_const_Octagonal_Shape_int64_t_t ph, ppl_const_Congruence_t c)
- int [ppl_Octagonal_Shape_int64_t_get_constraints](#) (ppl_const_Octagonal_Shape_int64_t_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_Octagonal_Shape_int64_t_get_congruences](#) (ppl_const_Octagonal_Shape_int64_t_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_Octagonal_Shape_int64_t_get_minimized_constraints](#) (ppl_const_Octagonal_Shape_int64_t_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_Octagonal_Shape_int64_t_get_minimized_congruences](#) (ppl_const_Octagonal_Shape_int64_t_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_Octagonal_Shape_int64_t_is_empty](#) (ppl_const_Octagonal_Shape_int64_t_t ph)
- int [ppl_Octagonal_Shape_int64_t_is_universe](#) (ppl_const_Octagonal_Shape_int64_t_t ph)
- int [ppl_Octagonal_Shape_int64_t_is_bounded](#) (ppl_const_Octagonal_Shape_int64_t_t ph)
- int [ppl_Octagonal_Shape_int64_t_contains_integer_point](#) (ppl_const_Octagonal_Shape_int64_t_t ph)
- int [ppl_Octagonal_Shape_int64_t_is_topologically_closed](#) (ppl_const_Octagonal_Shape_int64_t_t ph)
- int [ppl_Octagonal_Shape_int64_t_is_discrete](#) (ppl_const_Octagonal_Shape_int64_t_t ph)
- int [ppl_Octagonal_Shape_int64_t_topological_closure_assign](#) (ppl_Octagonal_Shape_int64_t_t ph)
- int [ppl_Octagonal_Shape_int64_t_bounds_from_above](#) (ppl_const_Octagonal_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Octagonal_Shape_int64_t_bounds_from_below](#) (ppl_const_Octagonal_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Octagonal_Shape_int64_t_maximize](#) (ppl_const_Octagonal_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Octagonal_Shape_int64_t_minimize](#) (ppl_const_Octagonal_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Octagonal_Shape_int64_t_maximize_with_point](#) (ppl_const_Octagonal_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Octagonal_Shape_int64_t_minimize_with_point](#) (ppl_const_Octagonal_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Octagonal_Shape_int64_t_frequency](#) (ppl_const_Octagonal_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)
- int [ppl_Octagonal_Shape_int64_t_contains_Octagonal_Shape_int64_t](#) (ppl_const_Octagonal_Shape_int64_t_t x, ppl_const_Octagonal_Shape_int64_t_t y)
- int [ppl_Octagonal_Shape_int64_t_strictly_contains_Octagonal_Shape_int64_t](#) (ppl_const_Octagonal_Shape_int64_t_t x, ppl_const_Octagonal_Shape_int64_t_t y)

- int [ppl_Octagonal_Shape_int64_t_is_disjoint_from_Octagonal_Shape_int64_t](#) (ppl_const_Octagonal_Shape_int64_t x, ppl_const_Octagonal_Shape_int64_t y)
- int [ppl_Octagonal_Shape_int64_t_equals_Octagonal_Shape_int64_t](#) (ppl_const_Octagonal_Shape_int64_t x, ppl_const_Octagonal_Shape_int64_t y)
- int [ppl_Octagonal_Shape_int64_t_OK](#) (ppl_const_Octagonal_Shape_int64_t ph)
- int [ppl_Octagonal_Shape_int64_t_add_constraint](#) (ppl_Octagonal_Shape_int64_t ph, ppl_const_Constraint_t c)
- int [ppl_Octagonal_Shape_int64_t_add_congruence](#) (ppl_Octagonal_Shape_int64_t ph, ppl_const_Congruence_t c)
- int [ppl_Octagonal_Shape_int64_t_add_constraints](#) (ppl_Octagonal_Shape_int64_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Octagonal_Shape_int64_t_add_congruences](#) (ppl_Octagonal_Shape_int64_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Octagonal_Shape_int64_t_refine_with_constraint](#) (ppl_Octagonal_Shape_int64_t ph, ppl_const_Constraint_t c)
- int [ppl_Octagonal_Shape_int64_t_refine_with_congruence](#) (ppl_Octagonal_Shape_int64_t ph, ppl_const_Congruence_t c)
- int [ppl_Octagonal_Shape_int64_t_refine_with_constraints](#) (ppl_Octagonal_Shape_int64_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Octagonal_Shape_int64_t_refine_with_congruences](#) (ppl_Octagonal_Shape_int64_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Octagonal_Shape_int64_t_intersection_assign](#) (ppl_Octagonal_Shape_int64_t x, ppl_const_Octagonal_Shape_int64_t y)
- int [ppl_Octagonal_Shape_int64_t_upper_bound_assign](#) (ppl_Octagonal_Shape_int64_t x, ppl_const_Octagonal_Shape_int64_t y)
- int [ppl_Octagonal_Shape_int64_t_difference_assign](#) (ppl_Octagonal_Shape_int64_t x, ppl_const_Octagonal_Shape_int64_t y)
- int [ppl_Octagonal_Shape_int64_t_concatenate_assign](#) (ppl_Octagonal_Shape_int64_t x, ppl_const_Octagonal_Shape_int64_t y)
- int [ppl_Octagonal_Shape_int64_t_time_elapse_assign](#) (ppl_Octagonal_Shape_int64_t x, ppl_const_Octagonal_Shape_int64_t y)
- int [ppl_Octagonal_Shape_int64_t_upper_bound_assign_if_exact](#) (ppl_Octagonal_Shape_int64_t x, ppl_const_Octagonal_Shape_int64_t y)
- int [ppl_Octagonal_Shape_int64_t_simplify_using_context_assign](#) (ppl_Octagonal_Shape_int64_t x, ppl_const_Octagonal_Shape_int64_t y)
- int [ppl_Octagonal_Shape_int64_t_constrains](#) (ppl_Octagonal_Shape_int64_t ph, [ppl_dimension_type](#) var)
- int [ppl_Octagonal_Shape_int64_t_unconstrain_space_dimension](#) (ppl_Octagonal_Shape_int64_t ph, [ppl_dimension_type](#) var)
- int [ppl_Octagonal_Shape_int64_t_unconstrain_space_dimensions](#) (ppl_Octagonal_Shape_int64_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Octagonal_Shape_int64_t_affine_image](#) (ppl_Octagonal_Shape_int64_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_int64_t_affine_preimage](#) (ppl_Octagonal_Shape_int64_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_int64_t_bounded_affine_image](#) (ppl_Octagonal_Shape_int64_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_int64_t_bounded_affine_preimage](#) (ppl_Octagonal_Shape_int64_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)

- `int ppl_Octagonal_Shape_int64_t_generalized_affine_image` (`ppl_Octagonal_Shape_int64_t_t` ph, `ppl_dimension_type` var, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- `int ppl_Octagonal_Shape_int64_t_generalized_affine_preimage` (`ppl_Octagonal_Shape_int64_t_t` ph, `ppl_dimension_type` var, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- `int ppl_Octagonal_Shape_int64_t_generalized_affine_image_lhs_rhs` (`ppl_Octagonal_Shape_int64_t_t` ph, `ppl_const_Linear_Expression_t` lhs, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` rhs)
- `int ppl_Octagonal_Shape_int64_t_generalized_affine_preimage_lhs_rhs` (`ppl_Octagonal_Shape_int64_t_t` ph, `ppl_const_Linear_Expression_t` lhs, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` rhs)
- `int ppl_Octagonal_Shape_int64_t_add_space_dimensions_and_embed` (`ppl_Octagonal_Shape_int64_t_t` ph, `ppl_dimension_type` d)
- `int ppl_Octagonal_Shape_int64_t_add_space_dimensions_and_project` (`ppl_Octagonal_Shape_int64_t_t` ph, `ppl_dimension_type` d)
- `int ppl_Octagonal_Shape_int64_t_remove_space_dimensions` (`ppl_Octagonal_Shape_int64_t_t` ph, `ppl_dimension_type` ds[], `size_t` n)
- `int ppl_Octagonal_Shape_int64_t_remove_higher_space_dimensions` (`ppl_Octagonal_Shape_int64_t_t` ph, `ppl_dimension_type` d)
- `int ppl_Octagonal_Shape_int64_t_expand_space_dimension` (`ppl_Octagonal_Shape_int64_t_t` ph, `ppl_dimension_type` d, `ppl_dimension_type` m)
- `int ppl_Octagonal_Shape_int64_t_fold_space_dimensions` (`ppl_Octagonal_Shape_int64_t_t` ph, `ppl_dimension_type` ds[], `size_t` n, `ppl_dimension_type` d)
- `int ppl_Octagonal_Shape_int64_t_map_space_dimensions` (`ppl_Octagonal_Shape_int64_t_t` ph, `ppl_dimension_type` maps[], `size_t` n)
- `int ppl_Octagonal_Shape_int64_t_drop_some_non_integer_points` (`ppl_Octagonal_Shape_int64_t_t` ph, `int` complexity)
- `int ppl_Octagonal_Shape_int64_t_drop_some_non_integer_points_2` (`ppl_Octagonal_Shape_int64_t_t` ph, `ppl_dimension_type` ds[], `size_t` n, `int` complexity)
- `int ppl_Octagonal_Shape_int64_t_external_memory_in_bytes` (`ppl_const_Octagonal_Shape_int64_t_t` ps, `size_t` *sz)
- `int ppl_Octagonal_Shape_int64_t_total_memory_in_bytes` (`ppl_const_Octagonal_Shape_int64_t_t` ps, `size_t` *sz)
- `int ppl_Octagonal_Shape_int64_t_BHMZ05_widening_assign_with_tokens` (`ppl_Octagonal_Shape_int64_t_t` x, `ppl_const_Octagonal_Shape_int64_t_t` y, `unsigned` *tp)
- `int ppl_Octagonal_Shape_int64_t_BHMZ05_widening_assign` (`ppl_Octagonal_Shape_int64_t_t` x, `ppl_const_Octagonal_Shape_int64_t_t` y)
- `int ppl_Octagonal_Shape_int64_t_widening_assign_with_tokens` (`ppl_Octagonal_Shape_int64_t_t` x, `ppl_const_Octagonal_Shape_int64_t_t` y, `unsigned` *tp)
- `int ppl_Octagonal_Shape_int64_t_widening_assign` (`ppl_Octagonal_Shape_int64_t_t` x, `ppl_const_Octagonal_Shape_int64_t_t` y)
- `int ppl_Octagonal_Shape_int64_t_limited_BHMZ05_extrapolation_assign_with_tokens` (`ppl_Octagonal_Shape_int64_t_t` x, `ppl_const_Octagonal_Shape_int64_t_t` y, `ppl_const_Constraint_System_t` cs, `unsigned` *tp)
- `int ppl_Octagonal_Shape_int64_t_limited_CC76_extrapolation_assign_with_tokens` (`ppl_Octagonal_Shape_int64_t_t` x, `ppl_const_Octagonal_Shape_int64_t_t` y, `ppl_const_Constraint_System_t` cs, `unsigned` *tp)
- `int ppl_Octagonal_Shape_int64_t_limited_BHMZ05_extrapolation_assign` (`ppl_Octagonal_Shape_int64_t_t` x, `ppl_const_Octagonal_Shape_int64_t_t` y, `ppl_const_Constraint_System_t` cs)

- int [ppl_Octagonal_Shape_int64_t_limited_CC76_extrapolation_assign](#) (ppl_Octagonal_Shape_int64_t_t x, ppl_const_Octagonal_Shape_int64_t_t y, ppl_const_Constraint_System_t cs)
- int [ppl_Octagonal_Shape_int64_t_CC76_extrapolation_assign_with_tokens](#) (ppl_Octagonal_Shape_int64_t_t x, ppl_const_Octagonal_Shape_int64_t_t y, unsigned *tp)
- int [ppl_Octagonal_Shape_int64_t_CC76_extrapolation_assign](#) (ppl_Octagonal_Shape_int64_t_t x, ppl_const_Octagonal_Shape_int64_t_t y)
- int [ppl_Octagonal_Shape_int64_t_CC76_narrowing_assign](#) (ppl_Octagonal_Shape_int64_t_t x, ppl_const_Octagonal_Shape_int64_t_t y)
- int [ppl_Octagonal_Shape_int64_t_linear_partition](#) (ppl_const_Octagonal_Shape_int64_t_t x, ppl_const_Octagonal_Shape_int64_t_t y, ppl_Octagonal_Shape_int64_t_t *p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest)
- int [ppl_Octagonal_Shape_int64_t_wrap_assign](#) (ppl_Octagonal_Shape_int64_t_t ph, [ppl_dimension_type](#) ds[], size_t n, enum [ppl_enum_Bounded_Integer_Type_Width](#) w, enum [ppl_enum_Bounded_Integer_Type_Representation](#) r, enum [ppl_enum_Bounded_Integer_Type_Overflow](#) o, const ppl_const_Constraint_System_t *pcs, unsigned complexity_threshold, int wrap_individually)
- int [ppl_new_Octagonal_Shape_int64_t_recycle_Constraint_System](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_Constraint_System_t cs)
- int [ppl_new_Octagonal_Shape_int64_t_recycle_Congruence_System](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_Congruence_System_t cs)
- int [ppl_new_Octagonal_Shape_int64_t_recycle_Generator_System](#) (ppl_Octagonal_Shape_int64_t_t *pph, ppl_Generator_System_t cs)
- int [ppl_assign_Octagonal_Shape_int64_t_from_Octagonal_Shape_int64_t](#) (ppl_Octagonal_Shape_int64_t_t dst, ppl_const_Octagonal_Shape_int64_t_t src)
- int [ppl_Octagonal_Shape_int64_t_add_recycled_constraints](#) (ppl_Octagonal_Shape_int64_t_t ph, ppl_Constraint_System_t cs)
- int [ppl_Octagonal_Shape_int64_t_add_recycled_congruences](#) (ppl_Octagonal_Shape_int64_t_t ph, ppl_Congruence_System_t cs)
- int [ppl_termination_test_MS_Octagonal_Shape_int64_t](#) (ppl_const_Octagonal_Shape_int64_t_t pset)
- int [ppl_termination_test_PR_Octagonal_Shape_int64_t](#) (ppl_const_Octagonal_Shape_int64_t_t pset)
- int [ppl_one_affine_ranking_function_MS_Octagonal_Shape_int64_t](#) (ppl_const_Octagonal_Shape_int64_t_t pset, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_Octagonal_Shape_int64_t](#) (ppl_const_Octagonal_Shape_int64_t_t pset, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_Octagonal_Shape_int64_t](#) (ppl_const_Octagonal_Shape_int64_t_t pset, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_Octagonal_Shape_int64_t](#) (ppl_const_Octagonal_Shape_int64_t_t pset, ppl_Polyhedron_t ph)
- int [ppl_termination_test_MS_Octagonal_Shape_int64_t_2](#) (ppl_const_Octagonal_Shape_int64_t_t pset_before, ppl_const_Octagonal_Shape_int64_t_t pset_after)
- int [ppl_termination_test_PR_Octagonal_Shape_int64_t_2](#) (ppl_const_Octagonal_Shape_int64_t_t pset_before, ppl_const_Octagonal_Shape_int64_t_t pset_after)
- int [ppl_one_affine_ranking_function_MS_Octagonal_Shape_int64_t_2](#) (ppl_const_Octagonal_Shape_int64_t_t pset_before, ppl_const_Octagonal_Shape_int64_t_t pset_after, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_Octagonal_Shape_int64_t_2](#) (ppl_const_Octagonal_Shape_int64_t_t pset_before, ppl_const_Octagonal_Shape_int64_t_t pset_after, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_Octagonal_Shape_int64_t_2](#) (ppl_const_Octagonal_Shape_int64_t_t pset_before, ppl_const_Octagonal_Shape_int64_t_t pset_after, ppl_Polyhedron_t ph)

- int [ppl_all_affine_ranking_functions_PR_Octagonal_Shape_int64_t_2](#) (ppl_const_Octagonal_Shape_int64_t_t pset_before, ppl_const_Octagonal_Shape_int64_t_t pset_after, ppl_Polyhedron_t ph)

10.45.1 Detailed Description

Types and functions for [ppl_Octagonal_Shape_int64_t_tag](#).

10.45.2 Friends And Related Function Documentation

- 10.45.2.1** int [ppl_all_affine_ranking_functions_MS_Octagonal_Shape_int64_t](#) (ppl_const_Octagonal_Shape_int64_t_t pset, ppl_Polyhedron_t ph) [[related](#)]
- 10.45.2.2** int [ppl_all_affine_ranking_functions_MS_Octagonal_Shape_int64_t_2](#) (ppl_const_Octagonal_Shape_int64_t_t pset_before, ppl_const_Octagonal_Shape_int64_t_t pset_after, ppl_Polyhedron_t ph) [[related](#)]
- 10.45.2.3** int [ppl_all_affine_ranking_functions_PR_Octagonal_Shape_int64_t](#) (ppl_const_Octagonal_Shape_int64_t_t pset, ppl_Polyhedron_t ph) [[related](#)]
- 10.45.2.4** int [ppl_all_affine_ranking_functions_PR_Octagonal_Shape_int64_t_2](#) (ppl_const_Octagonal_Shape_int64_t_t pset_before, ppl_const_Octagonal_Shape_int64_t_t pset_after, ppl_Polyhedron_t ph) [[related](#)]
- 10.45.2.5** int [ppl_assign_Octagonal_Shape_int64_t_from_Octagonal_Shape_int64_t](#) (ppl_Octagonal_Shape_int64_t_t dst, ppl_const_Octagonal_Shape_int64_t_t src) [[related](#)]
- 10.45.2.6** int [ppl_delete_Octagonal_Shape_int64_t](#) (ppl_const_Octagonal_Shape_int64_t_t ph) [[related](#)]
- 10.45.2.7** int [ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_double](#) (ppl_Octagonal_Shape_int64_t_t * pph, ppl_const_BD_Shape_double_t ph) [[related](#)]

- 10.45.2.8** `int ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_double_with_complexity`
(`ppl_Octagonal_Shape_int64_t * pph`, `ppl_const_BD_Shape_double_t ph`, `int complexity`) [`related`]
- 10.45.2.9** `int ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_float`
(`ppl_Octagonal_Shape_int64_t * pph`, `ppl_const_BD_Shape_float_t ph`) [`related`]
- 10.45.2.10** `int ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_float_with_complexity`
(`ppl_Octagonal_Shape_int64_t * pph`, `ppl_const_BD_Shape_float_t ph`, `int complexity`) [`related`]
- 10.45.2.11** `int ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_int16_t`
(`ppl_Octagonal_Shape_int64_t * pph`, `ppl_const_BD_Shape_int16_t_t ph`) [`related`]
- 10.45.2.12** `int ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_int16_t_with_complexity`
(`ppl_Octagonal_Shape_int64_t * pph`, `ppl_const_BD_Shape_int16_t_t ph`, `int complexity`) [`related`]
- 10.45.2.13** `int ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_int32_t`
(`ppl_Octagonal_Shape_int64_t * pph`, `ppl_const_BD_Shape_int32_t_t ph`) [`related`]
- 10.45.2.14** `int ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_int32_t_with_complexity`
(`ppl_Octagonal_Shape_int64_t * pph`, `ppl_const_BD_Shape_int32_t_t ph`, `int complexity`) [`related`]
- 10.45.2.15** `int ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_int64_t`
(`ppl_Octagonal_Shape_int64_t * pph`, `ppl_const_BD_Shape_int64_t_t ph`) [`related`]

- 10.45.2.16 `int ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_int64_t_with_complexity`
(`ppl_Octagonal_Shape_int64_t_t * pph`, `ppl_const_BD_Shape_int64_t_t ph`, `int complexity`) [`related`]
- 10.45.2.17 `int ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_int8_t`
(`ppl_Octagonal_Shape_int64_t_t * pph`, `ppl_const_BD_Shape_int8_t_t ph`)
[`related`]
- 10.45.2.18 `int ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_int8_t_with_complexity`
(`ppl_Octagonal_Shape_int64_t_t * pph`, `ppl_const_BD_Shape_int8_t_t ph`, `int complexity`) [`related`]
- 10.45.2.19 `int ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_long_double`
(`ppl_Octagonal_Shape_int64_t_t * pph`, `ppl_const_BD_Shape_long_double_t ph`)
[`related`]
- 10.45.2.20 `int ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_long_double_with_complexity`
(`ppl_Octagonal_Shape_int64_t_t * pph`, `ppl_const_BD_Shape_long_double_t ph`, `int complexity`) [`related`]
- 10.45.2.21 `int ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_mpq_class`
(`ppl_Octagonal_Shape_int64_t_t * pph`, `ppl_const_BD_Shape_mpq_class_t ph`)
[`related`]
- 10.45.2.22 `int ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_mpq_class_with_complexity`
(`ppl_Octagonal_Shape_int64_t_t * pph`, `ppl_const_BD_Shape_mpq_class_t ph`, `int complexity`) [`related`]
- 10.45.2.23 `int ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_mpz_class`
(`ppl_Octagonal_Shape_int64_t_t * pph`, `ppl_const_BD_Shape_mpz_class_t ph`)
[`related`]

- 10.45.2.24 `int ppl_new_Octagonal_Shape_int64_t_from_BD_Shape_mpz_class_with_complexity`
(`ppl_Octagonal_Shape_int64_t_t * pph`, `ppl_const_BD_Shape_mpz_class_t ph`, `int complexity`) [`related`]
- 10.45.2.25 `int ppl_new_Octagonal_Shape_int64_t_from_C_Polyhedron`
(`ppl_Octagonal_Shape_int64_t_t * pph`, `ppl_const_Polyhedron_t ph`) [`related`]
- 10.45.2.26 `int ppl_new_Octagonal_Shape_int64_t_from_C_Polyhedron_with_complexity`
(`ppl_Octagonal_Shape_int64_t_t * pph`, `ppl_const_Polyhedron_t ph`, `int complexity`)
[`related`]
- 10.45.2.27 `int ppl_new_Octagonal_Shape_int64_t_from_Congruence_System`
(`ppl_Octagonal_Shape_int64_t_t * pph`, `ppl_const_Congruence_System_t cs`)
[`related`]
- 10.45.2.28 `int ppl_new_Octagonal_Shape_int64_t_from_Constraint_System`
(`ppl_Octagonal_Shape_int64_t_t * pph`, `ppl_const_Constraint_System_t cs`)
[`related`]
- 10.45.2.29 `int ppl_new_Octagonal_Shape_int64_t_from_Double_Box` (`ppl_-`
`Octagonal_Shape_int64_t_t * pph`, `ppl_const_Double_Box_t ph`)
[`related`]
- 10.45.2.30 `int ppl_new_Octagonal_Shape_int64_t_from_Double_Box_with_complexity`
(`ppl_Octagonal_Shape_int64_t_t * pph`, `ppl_const_Double_Box_t ph`, `int complexity`)
[`related`]
- 10.45.2.31 `int ppl_new_Octagonal_Shape_int64_t_from_Float_Box` (`ppl_-`
`Octagonal_Shape_int64_t_t * pph`, `ppl_const_Float_Box_t ph`)
[`related`]

- 10.45.2.32 `int ppl_new_Octagonal_Shape_int64_t_from_Float_Box_with_complexity`
 (`ppl_Octagonal_Shape_int64_t_t * pph`, `ppl_const_Float_Box_t ph`, `int complexity`)
 [related]
- 10.45.2.33 `int ppl_new_Octagonal_Shape_int64_t_from_Generator_System`
 (`ppl_Octagonal_Shape_int64_t_t * pph`, `ppl_const_Generator_System_t cs`)
 [related]
- 10.45.2.34 `int ppl_new_Octagonal_Shape_int64_t_from_Grid` (`ppl_Octagonal_Shape_int64_t_t *`
`pph`, `ppl_const_Grid_t ph`) [related]
- 10.45.2.35 `int ppl_new_Octagonal_Shape_int64_t_from_Grid_with_complexity`
 (`ppl_Octagonal_Shape_int64_t_t * pph`, `ppl_const_Grid_t ph`, `int complexity`)
 [related]
- 10.45.2.36 `int ppl_new_Octagonal_Shape_int64_t_from_Int16_Box` (`ppl_-`
`Octagonal_Shape_int64_t_t * pph`, `ppl_const_Int16_Box_t ph`)
 [related]
- 10.45.2.37 `int ppl_new_Octagonal_Shape_int64_t_from_Int16_Box_with_complexity`
 (`ppl_Octagonal_Shape_int64_t_t * pph`, `ppl_const_Int16_Box_t ph`, `int complexity`)
 [related]
- 10.45.2.38 `int ppl_new_Octagonal_Shape_int64_t_from_Int32_Box` (`ppl_-`
`Octagonal_Shape_int64_t_t * pph`, `ppl_const_Int32_Box_t ph`)
 [related]
- 10.45.2.39 `int ppl_new_Octagonal_Shape_int64_t_from_Int32_Box_with_complexity`
 (`ppl_Octagonal_Shape_int64_t_t * pph`, `ppl_const_Int32_Box_t ph`, `int complexity`)
 [related]

- 10.45.2.40** `int ppl_new_Octagonal_Shape_int64_t_from_Int64_Box (ppl_Octagonal_Shape_int64_t_t * pph, ppl_const_Int64_Box_t ph)`
[related]
- 10.45.2.41** `int ppl_new_Octagonal_Shape_int64_t_from_Int64_Box_with_complexity (ppl_Octagonal_Shape_int64_t_t * pph, ppl_const_Int64_Box_t ph, int complexity)`
[related]
- 10.45.2.42** `int ppl_new_Octagonal_Shape_int64_t_from_Int8_Box (ppl_Octagonal_Shape_int64_t_t * pph, ppl_const_Int8_Box_t ph)`
[related]
- 10.45.2.43** `int ppl_new_Octagonal_Shape_int64_t_from_Int8_Box_with_complexity (ppl_Octagonal_Shape_int64_t_t * pph, ppl_const_Int8_Box_t ph, int complexity)`
[related]
- 10.45.2.44** `int ppl_new_Octagonal_Shape_int64_t_from_Long_Double_Box (ppl_Octagonal_Shape_int64_t_t * pph, ppl_const_Long_Double_Box_t ph)`
[related]
- 10.45.2.45** `int ppl_new_Octagonal_Shape_int64_t_from_Long_Double_Box_with_complexity (ppl_Octagonal_Shape_int64_t_t * pph, ppl_const_Long_Double_Box_t ph, int complexity)` [related]
- 10.45.2.46** `int ppl_new_Octagonal_Shape_int64_t_from_NNC_Polyhedron (ppl_Octagonal_Shape_int64_t_t * pph, ppl_const_Polyhedron_t ph)` [related]
- 10.45.2.47** `int ppl_new_Octagonal_Shape_int64_t_from_NNC_Polyhedron_with_complexity (ppl_Octagonal_Shape_int64_t_t * pph, ppl_const_Polyhedron_t ph, int complexity)`
[related]

- 10.45.2.48 `int ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_double`
`(ppl_Octagonal_Shape_int64_t_t * pph, ppl_const_Octagonal_Shape_double_t ph)`
`[related]`
- 10.45.2.49 `int ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_-`
`double_with_complexity (ppl_Octagonal_Shape_int64_t_t * pph,`
`ppl_const_Octagonal_Shape_double_t ph, int complexity) [related]`
- 10.45.2.50 `int ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_float`
`(ppl_Octagonal_Shape_int64_t_t * pph, ppl_const_Octagonal_Shape_float_t ph)`
`[related]`
- 10.45.2.51 `int ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_float_with_complexity`
`(ppl_Octagonal_Shape_int64_t_t * pph, ppl_const_Octagonal_Shape_float_t ph, int`
`complexity) [related]`
- 10.45.2.52 `int ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_int16_t`
`(ppl_Octagonal_Shape_int64_t_t * pph, ppl_const_Octagonal_Shape_int16_t_t ph)`
`[related]`
- 10.45.2.53 `int ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_-`
`int16_t_with_complexity (ppl_Octagonal_Shape_int64_t_t * pph,`
`ppl_const_Octagonal_Shape_int16_t_t ph, int complexity) [related]`
- 10.45.2.54 `int ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_int32_t`
`(ppl_Octagonal_Shape_int64_t_t * pph, ppl_const_Octagonal_Shape_int32_t_t ph)`
`[related]`
- 10.45.2.55 `int ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_-`
`int32_t_with_complexity (ppl_Octagonal_Shape_int64_t_t * pph,`
`ppl_const_Octagonal_Shape_int32_t_t ph, int complexity) [related]`

- 10.45.2.56 `int ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_int64_t`
`(ppl_Octagonal_Shape_int64_t_t * pph, ppl_const_Octagonal_Shape_int64_t_t ph)`
`[related]`
- 10.45.2.57 `int ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_-`
`int64_t_with_complexity (ppl_Octagonal_Shape_int64_t_t * pph,`
`ppl_const_Octagonal_Shape_int64_t_t ph, int complexity) [related]`
- 10.45.2.58 `int ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_int8_t`
`(ppl_Octagonal_Shape_int64_t_t * pph, ppl_const_Octagonal_Shape_int8_t_t ph)`
`[related]`
- 10.45.2.59 `int ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_-`
`int8_t_with_complexity (ppl_Octagonal_Shape_int64_t_t * pph,`
`ppl_const_Octagonal_Shape_int8_t_t ph, int complexity) [related]`
- 10.45.2.60 `int ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_long_double`
`(ppl_Octagonal_Shape_int64_t_t * pph, ppl_const_Octagonal_Shape_long_double_t`
`ph) [related]`
- 10.45.2.61 `int ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_-`
`long_double_with_complexity (ppl_Octagonal_Shape_int64_t_t * pph,`
`ppl_const_Octagonal_Shape_long_double_t_t ph, int complexity) [related]`
- 10.45.2.62 `int ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_mpq_class`
`(ppl_Octagonal_Shape_int64_t_t * pph, ppl_const_Octagonal_Shape_mpq_class_t_t ph)`
`[related]`
- 10.45.2.63 `int ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_-`
`mpq_class_with_complexity (ppl_Octagonal_Shape_int64_t_t * pph,`
`ppl_const_Octagonal_Shape_mpq_class_t_t ph, int complexity) [related]`

- 10.45.2.64** `int ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_mpz_class`
`(ppl_Octagonal_Shape_int64_t_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph)`
`[related]`
- 10.45.2.65** `int ppl_new_Octagonal_Shape_int64_t_from_Octagonal_Shape_-`
`mpz_class_with_complexity (ppl_Octagonal_Shape_int64_t_t * pph,`
`ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)` `[related]`
- 10.45.2.66** `int ppl_new_Octagonal_Shape_int64_t_from_Rational_Box`
`(ppl_Octagonal_Shape_int64_t_t * pph, ppl_const_Rational_Box_t ph)` `[related]`
- 10.45.2.67** `int ppl_new_Octagonal_Shape_int64_t_from_Rational_Box_with_complexity`
`(ppl_Octagonal_Shape_int64_t_t * pph, ppl_const_Rational_Box_t ph, int complexity)`
`[related]`
- 10.45.2.68** `int ppl_new_Octagonal_Shape_int64_t_from_space_dimension`
`(ppl_Octagonal_Shape_int64_t_t * pph, ppl_dimension_type d, int empty)`
`[related]`
- 10.45.2.69** `int ppl_new_Octagonal_Shape_int64_t_from_Uint16_Box (ppl_-`
`Octagonal_Shape_int64_t_t * pph, ppl_const_Uint16_Box_t ph)`
`[related]`
- 10.45.2.70** `int ppl_new_Octagonal_Shape_int64_t_from_Uint16_Box_with_complexity`
`(ppl_Octagonal_Shape_int64_t_t * pph, ppl_const_Uint16_Box_t ph, int complexity)`
`[related]`
- 10.45.2.71** `int ppl_new_Octagonal_Shape_int64_t_from_Uint32_Box (ppl_-`
`Octagonal_Shape_int64_t_t * pph, ppl_const_Uint32_Box_t ph)`
`[related]`

- 10.45.2.72** int ppl_new_Octagonal_Shape_int64_t_from_Uint32_Box_with_complexity
(ppl_Octagonal_Shape_int64_t_t * *pph*, ppl_const_Uint32_Box_t *ph*, int *complexity*)
[related]
- 10.45.2.73** int ppl_new_Octagonal_Shape_int64_t_from_Uint64_Box (ppl_
Octagonal_Shape_int64_t_t * *pph*, ppl_const_Uint64_Box_t *ph*)
[related]
- 10.45.2.74** int ppl_new_Octagonal_Shape_int64_t_from_Uint64_Box_with_complexity
(ppl_Octagonal_Shape_int64_t_t * *pph*, ppl_const_Uint64_Box_t *ph*, int *complexity*)
[related]
- 10.45.2.75** int ppl_new_Octagonal_Shape_int64_t_from_Uint8_Box (ppl_
Octagonal_Shape_int64_t_t * *pph*, ppl_const_Uint8_Box_t *ph*)
[related]
- 10.45.2.76** int ppl_new_Octagonal_Shape_int64_t_from_Uint8_Box_with_complexity
(ppl_Octagonal_Shape_int64_t_t * *pph*, ppl_const_Uint8_Box_t *ph*, int *complexity*)
[related]
- 10.45.2.77** int ppl_new_Octagonal_Shape_int64_t_from_Z_Box (ppl_Octagonal_Shape_int64_t_t
* *pph*, ppl_const_Z_Box_t *ph*) [related]
- 10.45.2.78** int ppl_new_Octagonal_Shape_int64_t_from_Z_Box_with_complexity
(ppl_Octagonal_Shape_int64_t_t * *pph*, ppl_const_Z_Box_t *ph*, int *complexity*)
[related]
- 10.45.2.79** int ppl_new_Octagonal_Shape_int64_t_recycle_Congruence_System
(ppl_Octagonal_Shape_int64_t_t * *pph*, ppl_Congruence_System_t *cs*) [related]

- 10.45.2.80** `int ppl_new_Octagonal_Shape_int64_t_recycle_Constraint_System`
`(ppl_Octagonal_Shape_int64_t_t * pph, ppl_Constraint_System_t cs)` [**related**]
- 10.45.2.81** `int ppl_new_Octagonal_Shape_int64_t_recycle_Generator_System`
`(ppl_Octagonal_Shape_int64_t_t * pph, ppl_Generator_System_t cs)` [**related**]
- 10.45.2.82** `int ppl_Octagonal_Shape_int64_t_add_congruence` (`ppl_Octagonal_Shape_int64_t_t`
`ph, ppl_const_Congruence_t c`) [**related**]
- 10.45.2.83** `int ppl_Octagonal_Shape_int64_t_add_congruences` (`ppl_Octagonal_Shape_int64_t_t`
`ph, ppl_const_Congruence_System_t cs`) [**related**]
- 10.45.2.84** `int ppl_Octagonal_Shape_int64_t_add_constraint` (`ppl_Octagonal_Shape_int64_t_t`
`ph, ppl_const_Constraint_t c`) [**related**]
- 10.45.2.85** `int ppl_Octagonal_Shape_int64_t_add_constraints` (`ppl_Octagonal_Shape_int64_t_t`
`ph, ppl_const_Constraint_System_t cs`) [**related**]
- 10.45.2.86** `int ppl_Octagonal_Shape_int64_t_add_recycled_congruences`
`(ppl_Octagonal_Shape_int64_t_t ph, ppl_Congruence_System_t cs)` [**related**]
- 10.45.2.87** `int ppl_Octagonal_Shape_int64_t_add_recycled_constraints`
`(ppl_Octagonal_Shape_int64_t_t ph, ppl_Constraint_System_t cs)` [**related**]
- 10.45.2.88** `int ppl_Octagonal_Shape_int64_t_add_space_dimensions_and_embed`
`(ppl_Octagonal_Shape_int64_t_t ph, ppl_dimension_type d)` [**related**]

- 10.45.2.89 `int ppl_Octagonal_Shape_int64_t_add_space_dimensions_and_project`
(`ppl_Octagonal_Shape_int64_t_t ph`, `ppl_dimension_type d`) [`related`]
- 10.45.2.90 `int ppl_Octagonal_Shape_int64_t_affine_dimension` (`ppl_const_Octagonal_Shape_int64_t_t ph`, `ppl_dimension_type * m`) [`related`]
- 10.45.2.91 `int ppl_Octagonal_Shape_int64_t_affine_image` (`ppl_Octagonal_Shape_int64_t_t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`) [`related`]
- 10.45.2.92 `int ppl_Octagonal_Shape_int64_t_affine_preimage` (`ppl_Octagonal_Shape_int64_t_t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`) [`related`]
- 10.45.2.93 `int ppl_Octagonal_Shape_int64_t_BHMZ05_widening_assign`
(`ppl_Octagonal_Shape_int64_t_t x`, `ppl_const_Octagonal_Shape_int64_t_t y`) [`related`]
- 10.45.2.94 `int ppl_Octagonal_Shape_int64_t_BHMZ05_widening_assign_with_tokens`
(`ppl_Octagonal_Shape_int64_t_t x`, `ppl_const_Octagonal_Shape_int64_t_t y`, `unsigned * tp`) [`related`]
- 10.45.2.95 `int ppl_Octagonal_Shape_int64_t_bounded_affine_image` (`ppl_Octagonal_Shape_int64_t_t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t lb`, `ppl_const_Linear_Expression_t ub`, `ppl_const_Coefficient_t d`) [`related`]
- 10.45.2.96 `int ppl_Octagonal_Shape_int64_t_bounded_affine_preimage` (`ppl_Octagonal_Shape_int64_t_t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t lb`, `ppl_const_Linear_Expression_t ub`, `ppl_const_Coefficient_t d`) [`related`]

- 10.45.2.97 `int ppl_Octagonal_Shape_int64_t_bounds_from_above (ppl_const_Octagonal_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le)`
[related]
- 10.45.2.98 `int ppl_Octagonal_Shape_int64_t_bounds_from_below (ppl_const_Octagonal_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le)`
[related]
- 10.45.2.99 `int ppl_Octagonal_Shape_int64_t_CC76_extrapolation_assign (ppl_Octagonal_Shape_int64_t_t x, ppl_const_Octagonal_Shape_int64_t_t y)`
[related]
- 10.45.2.100 `int ppl_Octagonal_Shape_int64_t_CC76_extrapolation_assign_with_tokens (ppl_Octagonal_Shape_int64_t_t x, ppl_const_Octagonal_Shape_int64_t_t y, unsigned * tp)` [related]
- 10.45.2.101 `int ppl_Octagonal_Shape_int64_t_CC76_narrowing_assign (ppl_Octagonal_Shape_int64_t_t x, ppl_const_Octagonal_Shape_int64_t_t y)`
[related]
- 10.45.2.102 `int ppl_Octagonal_Shape_int64_t_concatenate_assign (ppl_Octagonal_Shape_int64_t_t x, ppl_const_Octagonal_Shape_int64_t_t y)`
[related]
- 10.45.2.103 `int ppl_Octagonal_Shape_int64_t_constrains (ppl_Octagonal_Shape_int64_t_t ph, ppl_dimension_type var)` [related]
- 10.45.2.104 `int ppl_Octagonal_Shape_int64_t_contains_integer_point (ppl_const_Octagonal_Shape_int64_t_t ph)` [related]

- 10.45.2.105 `int ppl_Octagonal_Shape_int64_t_contains_Octagonal_Shape_int64_t`
 (`ppl_const_Octagonal_Shape_int64_t_t x`, `ppl_const_Octagonal_Shape_int64_t_t y`)
 [`related`]
- 10.45.2.106 `int ppl_Octagonal_Shape_int64_t_difference_assign` (`ppl_Octagonal_Shape_int64_t_t`
`x`, `ppl_const_Octagonal_Shape_int64_t_t y`) [`related`]
- 10.45.2.107 `int ppl_Octagonal_Shape_int64_t_drop_some_non_integer_points`
 (`ppl_Octagonal_Shape_int64_t_t ph`, `int complexity`) [`related`]
- 10.45.2.108 `int ppl_Octagonal_Shape_int64_t_drop_some_non_integer_points_2`
 (`ppl_Octagonal_Shape_int64_t_t ph`, `ppl_dimension_type ds[]`, `size_t n`, `int`
`complexity`) [`related`]
- 10.45.2.109 `int ppl_Octagonal_Shape_int64_t_equals_Octagonal_Shape_int64_t`
 (`ppl_const_Octagonal_Shape_int64_t_t x`, `ppl_const_Octagonal_Shape_int64_t_t y`)
 [`related`]
- 10.45.2.110 `int ppl_Octagonal_Shape_int64_t_expand_space_dimension` (`ppl_Octagonal_-`
`Shape_int64_t_t ph`, `ppl_dimension_type d`, `ppl_dimension_type m`)
 [`related`]
- 10.45.2.111 `int ppl_Octagonal_Shape_int64_t_external_memory_in_bytes`
 (`ppl_const_Octagonal_Shape_int64_t_t ps`, `size_t * sz`) [`related`]
- 10.45.2.112 `int ppl_Octagonal_Shape_int64_t_fold_space_dimensions` (`ppl_Octagonal_-`
`Shape_int64_t_t ph`, `ppl_dimension_type ds[]`, `size_t n`, `ppl_dimension_type d`)
 [`related`]

- 10.45.2.113 `int ppl_Octagonal_Shape_int64_t frequency (ppl_const_Octagonal_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)` [`related`]
- 10.45.2.114 `int ppl_Octagonal_Shape_int64_t generalized_affine_image (ppl_Octagonal_Shape_int64_t_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.45.2.115 `int ppl_Octagonal_Shape_int64_t generalized_affine_image_lhs_rhs (ppl_Octagonal_Shape_int64_t_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` [`related`]
- 10.45.2.116 `int ppl_Octagonal_Shape_int64_t generalized_affine_preimage (ppl_Octagonal_Shape_int64_t_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.45.2.117 `int ppl_Octagonal_Shape_int64_t generalized_affine_preimage_lhs_rhs (ppl_Octagonal_Shape_int64_t_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` [`related`]
- 10.45.2.118 `int ppl_Octagonal_Shape_int64_t get_congruences (ppl_const_Octagonal_Shape_int64_t_t ph, ppl_const_Congruence_System_t * pcs)` [`related`]
- 10.45.2.119 `int ppl_Octagonal_Shape_int64_t get_constraints (ppl_const_Octagonal_Shape_int64_t_t ph, ppl_const_Constraint_System_t * pcs)` [`related`]

- 10.45.2.120 `int ppl_Octagonal_Shape_int64_t_get_minimized_congruences`
(`ppl_const_Octagonal_Shape_int64_t_t` *ph*, `ppl_const_Congruence_System_t` * *pcs*)
[related]
- 10.45.2.121 `int ppl_Octagonal_Shape_int64_t_get_minimized_constraints`
(`ppl_const_Octagonal_Shape_int64_t_t` *ph*, `ppl_const_Constraint_System_t` * *pcs*)
[related]
- 10.45.2.122 `int ppl_Octagonal_Shape_int64_t_intersection_assign` (`ppl_Octagonal_Shape_int64_t_t` *x*, `ppl_const_Octagonal_Shape_int64_t_t` *y*)
[related]
- 10.45.2.123 `int ppl_Octagonal_Shape_int64_t_is_bounded` (`ppl_const_Octagonal_Shape_int64_t_t` *ph*) [related]
- 10.45.2.124 `int ppl_Octagonal_Shape_int64_t_is_discrete` (`ppl_const_Octagonal_Shape_int64_t_t` *ph*) [related]
- 10.45.2.125 `int ppl_Octagonal_Shape_int64_t_is_disjoint_from_Octagonal_Shape_int64_t`
(`ppl_const_Octagonal_Shape_int64_t_t` *x*, `ppl_const_Octagonal_Shape_int64_t_t` *y*)
[related]
- 10.45.2.126 `int ppl_Octagonal_Shape_int64_t_is_empty` (`ppl_const_Octagonal_Shape_int64_t_t` *ph*) [related]
- 10.45.2.127 `int ppl_Octagonal_Shape_int64_t_is_topologically_closed`
(`ppl_const_Octagonal_Shape_int64_t_t` *ph*) [related]
- 10.45.2.128 `int ppl_Octagonal_Shape_int64_t_is_universe` (`ppl_const_Octagonal_Shape_int64_t_t` *ph*) [related]

- 10.45.2.129 `int ppl_Octagonal_Shape_int64_t_limited_BHMZ05_extrapolation_assign`
 (`ppl_Octagonal_Shape_int64_t tx`, `ppl_const_Octagonal_Shape_int64_t ty`,
`ppl_const_Constraint_System_t cs`) [`related`]
- 10.45.2.130 `int ppl_Octagonal_Shape_int64_t_limited_BHMZ05_extrapolation_assign_with_`
`tokens` (`ppl_Octagonal_Shape_int64_t tx`, `ppl_const_Octagonal_Shape_int64_t ty`,
`ppl_const_Constraint_System_t cs`, `unsigned * tp`) [`related`]
- 10.45.2.131 `int ppl_Octagonal_Shape_int64_t_limited_CC76_extrapolation_assign`
 (`ppl_Octagonal_Shape_int64_t tx`, `ppl_const_Octagonal_Shape_int64_t ty`,
`ppl_const_Constraint_System_t cs`) [`related`]
- 10.45.2.132 `int ppl_Octagonal_Shape_int64_t_limited_CC76_extrapolation_assign_with_tokens`
 (`ppl_Octagonal_Shape_int64_t tx`, `ppl_const_Octagonal_Shape_int64_t ty`,
`ppl_const_Constraint_System_t cs`, `unsigned * tp`) [`related`]
- 10.45.2.133 `int ppl_Octagonal_Shape_int64_t_linear_partition` (`ppl_const_Octagonal_Shape_`
`int64_t tx`, `ppl_const_Octagonal_Shape_int64_t ty`, `ppl_Octagonal_Shape_int64_t t`
`* p_inters`, `ppl_Pointset_Powerset_NNC_Polyhedron_t * p_rest`) [`related`]
- 10.45.2.134 `int ppl_Octagonal_Shape_int64_t_map_space_dimensions` (`ppl_`
`Octagonal_Shape_int64_t t ph`, `ppl_dimension_type maps[]`, `size_t n`)
 [`related`]
- 10.45.2.135 `int ppl_Octagonal_Shape_int64_t_maximize` (`ppl_const_Octagonal_Shape_int64_t t`
`ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t`
`ext_d`, `int * poptimum`) [`related`]
- 10.45.2.136 `int ppl_Octagonal_Shape_int64_t_maximize_with_point` (`ppl_const_Octagonal_`
`Shape_int64_t t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`,
`ppl_Coefficient_t ext_d`, `int * poptimum`, `ppl_Generator_t point`) [`related`]

- 10.45.2.137 `int ppl_Octagonal_Shape_int64_t_minimize (ppl_const_Octagonal_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)` [related]
- 10.45.2.138 `int ppl_Octagonal_Shape_int64_t_minimize_with_point (ppl_const_Octagonal_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` [related]
- 10.45.2.139 `int ppl_Octagonal_Shape_int64_t_OK (ppl_const_Octagonal_Shape_int64_t_t ph)` [related]
- 10.45.2.140 `int ppl_Octagonal_Shape_int64_t_refine_with_congruence (ppl_Octagonal_Shape_int64_t_t ph, ppl_const_Congruence_t c)` [related]
- 10.45.2.141 `int ppl_Octagonal_Shape_int64_t_refine_with_congruences (ppl_Octagonal_Shape_int64_t_t ph, ppl_const_Congruence_System_t cs)` [related]
- 10.45.2.142 `int ppl_Octagonal_Shape_int64_t_refine_with_constraint (ppl_Octagonal_Shape_int64_t_t ph, ppl_const_Constraint_t c)` [related]
- 10.45.2.143 `int ppl_Octagonal_Shape_int64_t_refine_with_constraints (ppl_Octagonal_Shape_int64_t_t ph, ppl_const_Constraint_System_t cs)` [related]
- 10.45.2.144 `int ppl_Octagonal_Shape_int64_t_relation_with_Congruence (ppl_const_Octagonal_Shape_int64_t_t ph, ppl_const_Congruence_t c)` [related]
- 10.45.2.145 `int ppl_Octagonal_Shape_int64_t_relation_with_Constraint (ppl_const_Octagonal_Shape_int64_t_t ph, ppl_const_Constraint_t c)` [related]

- 10.45.2.146 `int ppl_Octagonal_Shape_int64_t_relation_with_Generator`
`(ppl_const_Octagonal_Shape_int64_t_t ph, ppl_const_Generator_t c)` [`related`]
- 10.45.2.147 `int ppl_Octagonal_Shape_int64_t_remove_higher_space_dimensions`
`(ppl_Octagonal_Shape_int64_t_t ph, ppl_dimension_type d)` [`related`]
- 10.45.2.148 `int ppl_Octagonal_Shape_int64_t_remove_space_dimensions`
`(ppl_Octagonal_Shape_int64_t_t ph, ppl_dimension_type ds[], size_t n)`
`[related]`
- 10.45.2.149 `int ppl_Octagonal_Shape_int64_t_simplify_using_context_assign`
`(ppl_Octagonal_Shape_int64_t_t x, ppl_const_Octagonal_Shape_int64_t_t y)`
`[related]`
- 10.45.2.150 `int ppl_Octagonal_Shape_int64_t_space_dimension` `(ppl_const_ -`
`Octagonal_Shape_int64_t_t ph, ppl_dimension_type * m)`
`[related]`
- 10.45.2.151 `int ppl_Octagonal_Shape_int64_t_strictly_contains_Octagonal_Shape_int64_t`
`(ppl_const_Octagonal_Shape_int64_t_t x, ppl_const_Octagonal_Shape_int64_t_t y)`
`[related]`
- 10.45.2.152 `int ppl_Octagonal_Shape_int64_t_time_elapse_assign` `(ppl_Octagonal_ -`
`Shape_int64_t_t x, ppl_const_Octagonal_Shape_int64_t_t y)`
`[related]`
- 10.45.2.153 `int ppl_Octagonal_Shape_int64_t_topological_closure_assign`
`(ppl_Octagonal_Shape_int64_t_t ph)` [`related`]

- 10.45.2.154 `int ppl_Octagonal_Shape_int64_t_total_memory_in_bytes`
(`ppl_const_Octagonal_Shape_int64_t_t ps`, `size_t * sz`) [`related`]
- 10.45.2.155 `int ppl_Octagonal_Shape_int64_t_unconstrain_space_dimension`
(`ppl_Octagonal_Shape_int64_t_t ph`, `ppl_dimension_type var`) [`related`]
- 10.45.2.156 `int ppl_Octagonal_Shape_int64_t_unconstrain_space_dimensions`
(`ppl_Octagonal_Shape_int64_t_t ph`, `ppl_dimension_type ds[]`, `size_t n`)
[`related`]
- 10.45.2.157 `int ppl_Octagonal_Shape_int64_t_upper_bound_assign` (`ppl_-`
`Octagonal_Shape_int64_t_t x`, `ppl_const_Octagonal_Shape_int64_t_t y`)
[`related`]
- 10.45.2.158 `int ppl_Octagonal_Shape_int64_t_upper_bound_assign_if_exact`
(`ppl_Octagonal_Shape_int64_t_t x`, `ppl_const_Octagonal_Shape_int64_t_t y`)
[`related`]
- 10.45.2.159 `int ppl_Octagonal_Shape_int64_t_widening_assign` (`ppl_Octagonal_Shape_int64_t_t`
`x`, `ppl_const_Octagonal_Shape_int64_t_t y`) [`related`]
- 10.45.2.160 `int ppl_Octagonal_Shape_int64_t_widening_assign_with_tokens`
(`ppl_Octagonal_Shape_int64_t_t x`, `ppl_const_Octagonal_Shape_int64_t_t y`,
`unsigned * tp`) [`related`]
- 10.45.2.161 `int ppl_Octagonal_Shape_int64_t_wrap_assign` (`ppl_Octagonal_Shape_int64_t_t ph`,
`ppl_dimension_type ds[]`, `size_t n`, `enum ppl_enum_Bounded_Integer_Type_Width`
`w`, `enum ppl_enum_Bounded_Integer_Type_Representation r`, `enum`
`ppl_enum_Bounded_Integer_Type_Overflow o`, `const ppl_const_Constraint_System_t`
`* pcs`, `unsigned complexity_threshold`, `int wrap_individually`) [`related`]

- 10.45.2.162 `int ppl_one_affine_ranking_function_MS_Octagonal_Shape_int64_t`
`(ppl_const_Octagonal_Shape_int64_t_t pset, ppl_Generator_t point)` [`related`]
- 10.45.2.163 `int ppl_one_affine_ranking_function_MS_Octagonal_Shape_int64_t_2` (`ppl_const_`
`Octagonal_Shape_int64_t_t pset_before`, `ppl_const_Octagonal_Shape_int64_t_t`
`pset_after`, `ppl_Generator_t point`) [`related`]
- 10.45.2.164 `int ppl_one_affine_ranking_function_PR_Octagonal_Shape_int64_t`
`(ppl_const_Octagonal_Shape_int64_t_t pset, ppl_Generator_t point)` [`related`]
- 10.45.2.165 `int ppl_one_affine_ranking_function_PR_Octagonal_Shape_int64_t_2` (`ppl_const_`
`Octagonal_Shape_int64_t_t pset_before`, `ppl_const_Octagonal_Shape_int64_t_t`
`pset_after`, `ppl_Generator_t point`) [`related`]
- 10.45.2.166 `int ppl_termination_test_MS_Octagonal_Shape_int64_t`
`(ppl_const_Octagonal_Shape_int64_t_t pset)` [`related`]
- 10.45.2.167 `int ppl_termination_test_MS_Octagonal_Shape_int64_t_2` (`ppl_const_Octagonal_`
`Shape_int64_t_t pset_before`, `ppl_const_Octagonal_Shape_int64_t_t pset_after`)
[`related`]
- 10.45.2.168 `int ppl_termination_test_PR_Octagonal_Shape_int64_t`
`(ppl_const_Octagonal_Shape_int64_t_t pset)` [`related`]
- 10.45.2.169 `int ppl_termination_test_PR_Octagonal_Shape_int64_t_2` (`ppl_const_Octagonal_`
`Shape_int64_t_t pset_before`, `ppl_const_Octagonal_Shape_int64_t_t pset_after`)
[`related`]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.46 ppl_Octagonal_Shape_int8_t_tag Interface Reference

Types and functions for [ppl_Octagonal_Shape_int8_t_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- [int ppl_delete_Octagonal_Shape_int8_t](#) (ppl_const_Octagonal_Shape_int8_t_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_space_dimension](#) (ppl_Octagonal_Shape_int8_t_t *pph, [ppl_dimension_type](#) d, int empty)
- [int ppl_new_Octagonal_Shape_int8_t_from_Int8_Box](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Int8_Box_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_Int16_Box](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Int16_Box_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_Int32_Box](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Int32_Box_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_Int64_Box](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Int64_Box_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_Uint8_Box](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Uint8_Box_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_Uint16_Box](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Uint16_Box_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_Uint32_Box](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Uint32_Box_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_Uint64_Box](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Uint64_Box_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_Z_Box](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Z_Box_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_Rational_Box](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Rational_Box_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_int8_t](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_BD_Shape_int8_t_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_int16_t](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_BD_Shape_int16_t_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_int32_t](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_BD_Shape_int32_t_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_int64_t](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_BD_Shape_int64_t_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_mpz_class](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_BD_Shape_mpz_class_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_mpq_class](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_BD_Shape_mpq_class_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_int8_t](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_int16_t](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_int32_t](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph)

- [int ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_int64_t](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_mpz_class](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_mpq_class](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_C_Polyhedron](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Polyhedron_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_NNC_Polyhedron](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Polyhedron_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_Grid](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Grid_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_Float_Box](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Float_Box_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_float](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_BD_Shape_float_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_float](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_float_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_Double_Box](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Double_Box_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_double](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_BD_Shape_double_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_double](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_double_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_Long_Double_Box](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Long_Double_Box_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_long_double](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_BD_Shape_long_double_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_long_double](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_long_double_t ph)
- [int ppl_new_Octagonal_Shape_int8_t_from_Int8_Box_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Int8_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int8_t_from_Int16_Box_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Int16_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int8_t_from_Int32_Box_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Int32_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int8_t_from_Int64_Box_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Int64_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int8_t_from_Uint8_Box_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Uint8_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int8_t_from_Uint16_Box_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Uint16_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int8_t_from_Uint32_Box_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Uint32_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int8_t_from_Uint64_Box_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Uint64_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int8_t_from_Z_Box_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Z_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int8_t_from_Rational_Box_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Rational_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_int8_t_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)

- int [ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_int16_t_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_int32_t_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_int64_t_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_mpz_class_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_mpq_class_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_int8_t_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_int16_t_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_int32_t_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_int64_t_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_mpz_class_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_mpq_class_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int8_t_from_C_Polyhedron_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int8_t_from_NNC_Polyhedron_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int8_t_from_Grid_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Grid_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int8_t_from_Float_Box_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Float_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_float_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_BD_Shape_float_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_float_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int8_t_from_Double_Box_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Double_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_double_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_BD_Shape_double_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_double_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int8_t_from_Long_Double_Box_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_long_double_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_long_double_with_complexity](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_int8_t_from_Constraint_System](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Constraint_System_t cs)
- int [ppl_new_Octagonal_Shape_int8_t_from_Congruence_System](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_const_Congruence_System_t cs)

- `int ppl_new_Octagonal_Shape_int8_t_from_Generator_System` (`ppl_Octagonal_Shape_int8_t` `t` `*pph`, `ppl_const_Generator_System_t` `cs`)
- `int ppl_Octagonal_Shape_int8_t_space_dimension` (`ppl_const_Octagonal_Shape_int8_t` `ph`, `ppl_dimension_type` `*m`)
- `int ppl_Octagonal_Shape_int8_t_affine_dimension` (`ppl_const_Octagonal_Shape_int8_t` `ph`, `ppl_dimension_type` `*m`)
- `int ppl_Octagonal_Shape_int8_t_relation_with_Constraint` (`ppl_const_Octagonal_Shape_int8_t` `t` `ph`, `ppl_const_Constraint_t` `c`)
- `int ppl_Octagonal_Shape_int8_t_relation_with_Generator` (`ppl_const_Octagonal_Shape_int8_t` `t` `ph`, `ppl_const_Generator_t` `c`)
- `int ppl_Octagonal_Shape_int8_t_relation_with_Congruence` (`ppl_const_Octagonal_Shape_int8_t` `t` `ph`, `ppl_const_Congruence_t` `c`)
- `int ppl_Octagonal_Shape_int8_t_get_constraints` (`ppl_const_Octagonal_Shape_int8_t` `t` `ph`, `ppl_const_Constraint_System_t` `*pcs`)
- `int ppl_Octagonal_Shape_int8_t_get_congruences` (`ppl_const_Octagonal_Shape_int8_t` `t` `ph`, `ppl_const_Congruence_System_t` `*pcs`)
- `int ppl_Octagonal_Shape_int8_t_get_minimized_constraints` (`ppl_const_Octagonal_Shape_int8_t` `t` `ph`, `ppl_const_Constraint_System_t` `*pcs`)
- `int ppl_Octagonal_Shape_int8_t_get_minimized_congruences` (`ppl_const_Octagonal_Shape_int8_t` `t` `ph`, `ppl_const_Congruence_System_t` `*pcs`)
- `int ppl_Octagonal_Shape_int8_t_is_empty` (`ppl_const_Octagonal_Shape_int8_t` `t` `ph`)
- `int ppl_Octagonal_Shape_int8_t_is_universe` (`ppl_const_Octagonal_Shape_int8_t` `t` `ph`)
- `int ppl_Octagonal_Shape_int8_t_is_bounded` (`ppl_const_Octagonal_Shape_int8_t` `t` `ph`)
- `int ppl_Octagonal_Shape_int8_t_contains_integer_point` (`ppl_const_Octagonal_Shape_int8_t` `t` `ph`)
- `int ppl_Octagonal_Shape_int8_t_is_topologically_closed` (`ppl_const_Octagonal_Shape_int8_t` `t` `ph`)
- `int ppl_Octagonal_Shape_int8_t_is_discrete` (`ppl_const_Octagonal_Shape_int8_t` `t` `ph`)
- `int ppl_Octagonal_Shape_int8_t_topological_closure_assign` (`ppl_Octagonal_Shape_int8_t` `t` `ph`)
- `int ppl_Octagonal_Shape_int8_t_bounds_from_above` (`ppl_const_Octagonal_Shape_int8_t` `t` `ph`, `ppl_const_Linear_Expression_t` `le`)
- `int ppl_Octagonal_Shape_int8_t_bounds_from_below` (`ppl_const_Octagonal_Shape_int8_t` `t` `ph`, `ppl_const_Linear_Expression_t` `le`)
- `int ppl_Octagonal_Shape_int8_t_maximize` (`ppl_const_Octagonal_Shape_int8_t` `t` `ph`, `ppl_const_Linear_Expression_t` `le`, `ppl_Coefficient_t` `ext_n`, `ppl_Coefficient_t` `ext_d`, `int` `*poptimum`)
- `int ppl_Octagonal_Shape_int8_t_minimize` (`ppl_const_Octagonal_Shape_int8_t` `t` `ph`, `ppl_const_Linear_Expression_t` `le`, `ppl_Coefficient_t` `ext_n`, `ppl_Coefficient_t` `ext_d`, `int` `*poptimum`)
- `int ppl_Octagonal_Shape_int8_t_maximize_with_point` (`ppl_const_Octagonal_Shape_int8_t` `t` `ph`, `ppl_const_Linear_Expression_t` `le`, `ppl_Coefficient_t` `ext_n`, `ppl_Coefficient_t` `ext_d`, `int` `*poptimum`, `ppl_Generator_t` `point`)
- `int ppl_Octagonal_Shape_int8_t_minimize_with_point` (`ppl_const_Octagonal_Shape_int8_t` `t` `ph`, `ppl_const_Linear_Expression_t` `le`, `ppl_Coefficient_t` `ext_n`, `ppl_Coefficient_t` `ext_d`, `int` `*poptimum`, `ppl_Generator_t` `point`)
- `int ppl_Octagonal_Shape_int8_t_frequency` (`ppl_const_Octagonal_Shape_int8_t` `t` `ph`, `ppl_const_Linear_Expression_t` `le`, `ppl_Coefficient_t` `ext_fn`, `ppl_Coefficient_t` `ext_fd`, `ppl_Coefficient_t` `ext_vn`, `ppl_Coefficient_t` `ext_vd`)
- `int ppl_Octagonal_Shape_int8_t_contains_Octagonal_Shape_int8_t` (`ppl_const_Octagonal_Shape_int8_t` `x`, `ppl_const_Octagonal_Shape_int8_t` `y`)
- `int ppl_Octagonal_Shape_int8_t_strictly_contains_Octagonal_Shape_int8_t` (`ppl_const_Octagonal_Shape_int8_t` `x`, `ppl_const_Octagonal_Shape_int8_t` `y`)
- `int ppl_Octagonal_Shape_int8_t_is_disjoint_from_Octagonal_Shape_int8_t` (`ppl_const_Octagonal_Shape_int8_t` `x`, `ppl_const_Octagonal_Shape_int8_t` `y`)

- int [ppl_Octagonal_Shape_int8_t_equals_Octagonal_Shape_int8_t](#) (ppl_const_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y)
- int [ppl_Octagonal_Shape_int8_t_OK](#) (ppl_const_Octagonal_Shape_int8_t_t ph)
- int [ppl_Octagonal_Shape_int8_t_add_constraint](#) (ppl_Octagonal_Shape_int8_t_t ph, ppl_const_Constraint_t c)
- int [ppl_Octagonal_Shape_int8_t_add_congruence](#) (ppl_Octagonal_Shape_int8_t_t ph, ppl_const_Congruence_t c)
- int [ppl_Octagonal_Shape_int8_t_add_constraints](#) (ppl_Octagonal_Shape_int8_t_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Octagonal_Shape_int8_t_add_congruences](#) (ppl_Octagonal_Shape_int8_t_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Octagonal_Shape_int8_t_refine_with_constraint](#) (ppl_Octagonal_Shape_int8_t_t ph, ppl_const_Constraint_t c)
- int [ppl_Octagonal_Shape_int8_t_refine_with_congruence](#) (ppl_Octagonal_Shape_int8_t_t ph, ppl_const_Congruence_t c)
- int [ppl_Octagonal_Shape_int8_t_refine_with_constraints](#) (ppl_Octagonal_Shape_int8_t_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Octagonal_Shape_int8_t_refine_with_congruences](#) (ppl_Octagonal_Shape_int8_t_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Octagonal_Shape_int8_t_intersection_assign](#) (ppl_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y)
- int [ppl_Octagonal_Shape_int8_t_upper_bound_assign](#) (ppl_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y)
- int [ppl_Octagonal_Shape_int8_t_difference_assign](#) (ppl_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y)
- int [ppl_Octagonal_Shape_int8_t_concatenate_assign](#) (ppl_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y)
- int [ppl_Octagonal_Shape_int8_t_time_elapse_assign](#) (ppl_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y)
- int [ppl_Octagonal_Shape_int8_t_upper_bound_assign_if_exact](#) (ppl_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y)
- int [ppl_Octagonal_Shape_int8_t_simplify_using_context_assign](#) (ppl_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y)
- int [ppl_Octagonal_Shape_int8_t_constrains](#) (ppl_Octagonal_Shape_int8_t_t ph, [ppl_dimension_type](#) var)
- int [ppl_Octagonal_Shape_int8_t_unconstrain_space_dimension](#) (ppl_Octagonal_Shape_int8_t_t ph, [ppl_dimension_type](#) var)
- int [ppl_Octagonal_Shape_int8_t_unconstrain_space_dimensions](#) (ppl_Octagonal_Shape_int8_t_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Octagonal_Shape_int8_t_affine_image](#) (ppl_Octagonal_Shape_int8_t_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_int8_t_affine_preimage](#) (ppl_Octagonal_Shape_int8_t_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_int8_t_bounded_affine_image](#) (ppl_Octagonal_Shape_int8_t_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_int8_t_bounded_affine_preimage](#) (ppl_Octagonal_Shape_int8_t_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_int8_t_generalized_affine_image](#) (ppl_Octagonal_Shape_int8_t_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)

- [int ppl_Octagonal_Shape_int8_t_generalized_affine_preimage](#) (ppl_Octagonal_Shape_int8_t_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- [int ppl_Octagonal_Shape_int8_t_generalized_affine_image_lhs_rhs](#) (ppl_Octagonal_Shape_int8_t_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- [int ppl_Octagonal_Shape_int8_t_generalized_affine_preimage_lhs_rhs](#) (ppl_Octagonal_Shape_int8_t_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- [int ppl_Octagonal_Shape_int8_t_add_space_dimensions_and_embed](#) (ppl_Octagonal_Shape_int8_t_t ph, [ppl_dimension_type](#) d)
- [int ppl_Octagonal_Shape_int8_t_add_space_dimensions_and_project](#) (ppl_Octagonal_Shape_int8_t_t ph, [ppl_dimension_type](#) d)
- [int ppl_Octagonal_Shape_int8_t_remove_space_dimensions](#) (ppl_Octagonal_Shape_int8_t_t ph, [ppl_dimension_type](#) ds[], size_t n)
- [int ppl_Octagonal_Shape_int8_t_remove_higher_space_dimensions](#) (ppl_Octagonal_Shape_int8_t_t ph, [ppl_dimension_type](#) d)
- [int ppl_Octagonal_Shape_int8_t_expand_space_dimension](#) (ppl_Octagonal_Shape_int8_t_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- [int ppl_Octagonal_Shape_int8_t_fold_space_dimensions](#) (ppl_Octagonal_Shape_int8_t_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- [int ppl_Octagonal_Shape_int8_t_map_space_dimensions](#) (ppl_Octagonal_Shape_int8_t_t ph, [ppl_dimension_type](#) maps[], size_t n)
- [int ppl_Octagonal_Shape_int8_t_drop_some_non_integer_points](#) (ppl_Octagonal_Shape_int8_t_t ph, int complexity)
- [int ppl_Octagonal_Shape_int8_t_drop_some_non_integer_points_2](#) (ppl_Octagonal_Shape_int8_t_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- [int ppl_Octagonal_Shape_int8_t_external_memory_in_bytes](#) (ppl_const_Octagonal_Shape_int8_t_t ps, size_t *sz)
- [int ppl_Octagonal_Shape_int8_t_total_memory_in_bytes](#) (ppl_const_Octagonal_Shape_int8_t_t ps, size_t *sz)
- [int ppl_Octagonal_Shape_int8_t_BHMZ05_widening_assign_with_tokens](#) (ppl_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y, unsigned *tp)
- [int ppl_Octagonal_Shape_int8_t_BHMZ05_widening_assign](#) (ppl_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y)
- [int ppl_Octagonal_Shape_int8_t_widening_assign_with_tokens](#) (ppl_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y, unsigned *tp)
- [int ppl_Octagonal_Shape_int8_t_widening_assign](#) (ppl_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y)
- [int ppl_Octagonal_Shape_int8_t_limited_BHMZ05_extrapolation_assign_with_tokens](#) (ppl_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- [int ppl_Octagonal_Shape_int8_t_limited_CC76_extrapolation_assign_with_tokens](#) (ppl_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- [int ppl_Octagonal_Shape_int8_t_limited_BHMZ05_extrapolation_assign](#) (ppl_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y, ppl_const_Constraint_System_t cs)
- [int ppl_Octagonal_Shape_int8_t_limited_CC76_extrapolation_assign](#) (ppl_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y, ppl_const_Constraint_System_t cs)
- [int ppl_Octagonal_Shape_int8_t_CC76_extrapolation_assign_with_tokens](#) (ppl_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y, unsigned *tp)

- int [ppl_Octagonal_Shape_int8_t_CC76_extrapolation_assign](#) (ppl_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y)
- int [ppl_Octagonal_Shape_int8_t_CC76_narrowing_assign](#) (ppl_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y)
- int [ppl_Octagonal_Shape_int8_t_linear_partition](#) (ppl_const_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y, ppl_Octagonal_Shape_int8_t_t *p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest)
- int [ppl_Octagonal_Shape_int8_t_wrap_assign](#) (ppl_Octagonal_Shape_int8_t_t ph, ppl_dimension_type ds[], size_t n, enum ppl_enum_Bounded_Integer_Type_Width w, enum ppl_enum_Bounded_Integer_Type_Representation r, enum ppl_enum_Bounded_Integer_Type_Overflow o, const ppl_const_Constraint_System_t *pcs, unsigned complexity_threshold, int wrap_individually)
- int [ppl_new_Octagonal_Shape_int8_t_recycle_Constraint_System](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_Constraint_System_t cs)
- int [ppl_new_Octagonal_Shape_int8_t_recycle_Congruence_System](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_Congruence_System_t cs)
- int [ppl_new_Octagonal_Shape_int8_t_recycle_Generator_System](#) (ppl_Octagonal_Shape_int8_t_t *pph, ppl_Generator_System_t cs)
- int [ppl_assign_Octagonal_Shape_int8_t_from_Octagonal_Shape_int8_t](#) (ppl_Octagonal_Shape_int8_t_t dst, ppl_const_Octagonal_Shape_int8_t_t src)
- int [ppl_Octagonal_Shape_int8_t_add_recycled_constraints](#) (ppl_Octagonal_Shape_int8_t_t ph, ppl_Constraint_System_t cs)
- int [ppl_Octagonal_Shape_int8_t_add_recycled_congruences](#) (ppl_Octagonal_Shape_int8_t_t ph, ppl_Congruence_System_t cs)
- int [ppl_termination_test_MS_Octagonal_Shape_int8_t](#) (ppl_const_Octagonal_Shape_int8_t_t pset)
- int [ppl_termination_test_PR_Octagonal_Shape_int8_t](#) (ppl_const_Octagonal_Shape_int8_t_t pset)
- int [ppl_one_affine_ranking_function_MS_Octagonal_Shape_int8_t](#) (ppl_const_Octagonal_Shape_int8_t_t pset, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_Octagonal_Shape_int8_t](#) (ppl_const_Octagonal_Shape_int8_t_t pset, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_Octagonal_Shape_int8_t](#) (ppl_const_Octagonal_Shape_int8_t_t pset, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_Octagonal_Shape_int8_t](#) (ppl_const_Octagonal_Shape_int8_t_t pset, ppl_Polyhedron_t ph)
- int [ppl_termination_test_MS_Octagonal_Shape_int8_t_2](#) (ppl_const_Octagonal_Shape_int8_t_t pset_before, ppl_const_Octagonal_Shape_int8_t_t pset_after)
- int [ppl_termination_test_PR_Octagonal_Shape_int8_t_2](#) (ppl_const_Octagonal_Shape_int8_t_t pset_before, ppl_const_Octagonal_Shape_int8_t_t pset_after)
- int [ppl_one_affine_ranking_function_MS_Octagonal_Shape_int8_t_2](#) (ppl_const_Octagonal_Shape_int8_t_t pset_before, ppl_const_Octagonal_Shape_int8_t_t pset_after, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_Octagonal_Shape_int8_t_2](#) (ppl_const_Octagonal_Shape_int8_t_t pset_before, ppl_const_Octagonal_Shape_int8_t_t pset_after, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_Octagonal_Shape_int8_t_2](#) (ppl_const_Octagonal_Shape_int8_t_t pset_before, ppl_const_Octagonal_Shape_int8_t_t pset_after, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_Octagonal_Shape_int8_t_2](#) (ppl_const_Octagonal_Shape_int8_t_t pset_before, ppl_const_Octagonal_Shape_int8_t_t pset_after, ppl_Polyhedron_t ph)

10.46.1 Detailed Description

Types and functions for [ppl_Octagonal_Shape_int8_t_tag](#).

10.46.2 Friends And Related Function Documentation

- 10.46.2.1** `int ppl_all_affine_ranking_functions_MS_Octagonal_Shape_int8_t`
`(ppl_const_Octagonal_Shape_int8_t_t pset, ppl_Polyhedron_t ph)` [**related**]
- 10.46.2.2** `int ppl_all_affine_ranking_functions_MS_Octagonal_Shape_int8_t_2` `(ppl_const_Octagonal_Shape_int8_t_t pset_before, ppl_const_Octagonal_Shape_int8_t_t pset_after, ppl_Polyhedron_t ph)` [**related**]
- 10.46.2.3** `int ppl_all_affine_ranking_functions_PR_Octagonal_Shape_int8_t`
`(ppl_const_Octagonal_Shape_int8_t_t pset, ppl_Polyhedron_t ph)` [**related**]
- 10.46.2.4** `int ppl_all_affine_ranking_functions_PR_Octagonal_Shape_int8_t_2` `(ppl_const_Octagonal_Shape_int8_t_t pset_before, ppl_const_Octagonal_Shape_int8_t_t pset_after, ppl_Polyhedron_t ph)` [**related**]
- 10.46.2.5** `int ppl_assign_Octagonal_Shape_int8_t_from_Octagonal_Shape_int8_t`
`(ppl_Octagonal_Shape_int8_t_t dst, ppl_const_Octagonal_Shape_int8_t_t src)`
[related]
- 10.46.2.6** `int ppl_delete_Octagonal_Shape_int8_t` `(ppl_const_Octagonal_Shape_int8_t_t ph)`
[related]
- 10.46.2.7** `int ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_double`
`(ppl_Octagonal_Shape_int8_t_t * pph, ppl_const_BD_Shape_double_t ph)`
[related]
- 10.46.2.8** `int ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_double_with_complexity`
`(ppl_Octagonal_Shape_int8_t_t * pph, ppl_const_BD_Shape_double_t ph, int complexity)` [**related**]

10.46.2.9 `int ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_float`
(`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_BD_Shape_float_t ph`) [**related**]

10.46.2.10 `int ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_float_with_complexity`
(`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_BD_Shape_float_t ph`, `int complexity`) [**related**]

10.46.2.11 `int ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_int16_t`
(`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_BD_Shape_int16_t_t ph`) [**related**]

10.46.2.12 `int ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_int16_t_with_complexity`
(`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_BD_Shape_int16_t_t ph`, `int complexity`) [**related**]

10.46.2.13 `int ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_int32_t`
(`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_BD_Shape_int32_t_t ph`) [**related**]

10.46.2.14 `int ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_int32_t_with_complexity`
(`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_BD_Shape_int32_t_t ph`, `int complexity`) [**related**]

10.46.2.15 `int ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_int64_t`
(`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_BD_Shape_int64_t_t ph`) [**related**]

10.46.2.16 `int ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_int64_t_with_complexity`
(`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_BD_Shape_int64_t_t ph`, `int complexity`) [**related**]

- 10.46.2.17 `int ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_int8_t`
(`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_BD_Shape_int8_t_t ph`)
[related]
- 10.46.2.18 `int ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_int8_t_with_complexity`
(`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_BD_Shape_int8_t_t ph`, `int complexity`) [related]
- 10.46.2.19 `int ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_long_double`
(`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_BD_Shape_long_double_t ph`)
[related]
- 10.46.2.20 `int ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_long_double_with_complexity`
(`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_BD_Shape_long_double_t ph`, `int complexity`) [related]
- 10.46.2.21 `int ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_mpq_class`
(`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_BD_Shape_mpq_class_t ph`)
[related]
- 10.46.2.22 `int ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_mpq_class_with_complexity`
(`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_BD_Shape_mpq_class_t ph`, `int complexity`) [related]
- 10.46.2.23 `int ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_mpz_class`
(`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_BD_Shape_mpz_class_t ph`)
[related]
- 10.46.2.24 `int ppl_new_Octagonal_Shape_int8_t_from_BD_Shape_mpz_class_with_complexity`
(`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_BD_Shape_mpz_class_t ph`, `int complexity`) [related]

- 10.46.2.25** `int ppl_new_Octagonal_Shape_int8_t_from_C_Polyhedron`
(`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_Polyhedron_t ph`) [`related`]
- 10.46.2.26** `int ppl_new_Octagonal_Shape_int8_t_from_C_Polyhedron_with_complexity`
(`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_Polyhedron_t ph`, `int complexity`)
[`related`]
- 10.46.2.27** `int ppl_new_Octagonal_Shape_int8_t_from_Congruence_System`
(`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_Congruence_System_t cs`)
[`related`]
- 10.46.2.28** `int ppl_new_Octagonal_Shape_int8_t_from_Constraint_System`
(`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_Constraint_System_t cs`)
[`related`]
- 10.46.2.29** `int ppl_new_Octagonal_Shape_int8_t_from_Double_Box` (`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_Double_Box_t ph`)
[`related`]
- 10.46.2.30** `int ppl_new_Octagonal_Shape_int8_t_from_Double_Box_with_complexity`
(`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_Double_Box_t ph`, `int complexity`)
[`related`]
- 10.46.2.31** `int ppl_new_Octagonal_Shape_int8_t_from_Float_Box` (`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_Float_Box_t ph`) [`related`]
- 10.46.2.32** `int ppl_new_Octagonal_Shape_int8_t_from_Float_Box_with_complexity`
(`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_Float_Box_t ph`, `int complexity`)
[`related`]

- 10.46.2.33 `int ppl_new_Octagonal_Shape_int8_t_from_Generator_System`
(`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_Generator_System_t cs`)
[related]
- 10.46.2.34 `int ppl_new_Octagonal_Shape_int8_t_from_Grid` (`ppl_Octagonal_Shape_int8_t_t *`
`pph`, `ppl_const_Grid_t ph`) [related]
- 10.46.2.35 `int ppl_new_Octagonal_Shape_int8_t_from_Grid_with_complexity`
(`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_Grid_t ph`, `int complexity`)
[related]
- 10.46.2.36 `int ppl_new_Octagonal_Shape_int8_t_from_Int16_Box` (`ppl_-`
`Octagonal_Shape_int8_t_t * pph`, `ppl_const_Int16_Box_t ph`)
[related]
- 10.46.2.37 `int ppl_new_Octagonal_Shape_int8_t_from_Int16_Box_with_complexity`
(`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_Int16_Box_t ph`, `int complexity`)
[related]
- 10.46.2.38 `int ppl_new_Octagonal_Shape_int8_t_from_Int32_Box` (`ppl_-`
`Octagonal_Shape_int8_t_t * pph`, `ppl_const_Int32_Box_t ph`)
[related]
- 10.46.2.39 `int ppl_new_Octagonal_Shape_int8_t_from_Int32_Box_with_complexity`
(`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_Int32_Box_t ph`, `int complexity`)
[related]
- 10.46.2.40 `int ppl_new_Octagonal_Shape_int8_t_from_Int64_Box` (`ppl_-`
`Octagonal_Shape_int8_t_t * pph`, `ppl_const_Int64_Box_t ph`)
[related]

- 10.46.2.41** `int ppl_new_Octagonal_Shape_int8_t_from_Int64_Box_with_complexity`
(`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_Int64_Box_t ph`, `int complexity`)
[related]
- 10.46.2.42** `int ppl_new_Octagonal_Shape_int8_t_from_Int8_Box` (`ppl_Octagonal_Shape_int8_t_t`
`* pph`, `ppl_const_Int8_Box_t ph`) [related]
- 10.46.2.43** `int ppl_new_Octagonal_Shape_int8_t_from_Int8_Box_with_complexity`
(`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_Int8_Box_t ph`, `int complexity`)
[related]
- 10.46.2.44** `int ppl_new_Octagonal_Shape_int8_t_from_Long_Double_Box`
(`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_Long_Double_Box_t ph`)
[related]
- 10.46.2.45** `int ppl_new_Octagonal_Shape_int8_t_from_Long_Double_Box_with_complexity`
(`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_Long_Double_Box_t ph`, `int complexity`) [related]
- 10.46.2.46** `int ppl_new_Octagonal_Shape_int8_t_from_NNC_Polyhedron`
(`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_Polyhedron_t ph`) [related]
- 10.46.2.47** `int ppl_new_Octagonal_Shape_int8_t_from_NNC_Polyhedron_with_complexity`
(`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_Polyhedron_t ph`, `int complexity`)
[related]
- 10.46.2.48** `int ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_double`
(`ppl_Octagonal_Shape_int8_t_t * pph`, `ppl_const_Octagonal_Shape_double_t ph`)
[related]

- 10.46.2.49 `int ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_double_with_complexity (ppl_Octagonal_Shape_int8_t * pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)` [`related`]
- 10.46.2.50 `int ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_float (ppl_Octagonal_Shape_int8_t * pph, ppl_const_Octagonal_Shape_float_t ph)` [`related`]
- 10.46.2.51 `int ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_float_with_complexity (ppl_Octagonal_Shape_int8_t * pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)` [`related`]
- 10.46.2.52 `int ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_int16_t (ppl_Octagonal_Shape_int8_t * pph, ppl_const_Octagonal_Shape_int16_t_t ph)` [`related`]
- 10.46.2.53 `int ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_int16_t_with_complexity (ppl_Octagonal_Shape_int8_t * pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)` [`related`]
- 10.46.2.54 `int ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_int32_t (ppl_Octagonal_Shape_int8_t * pph, ppl_const_Octagonal_Shape_int32_t_t ph)` [`related`]
- 10.46.2.55 `int ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_int32_t_with_complexity (ppl_Octagonal_Shape_int8_t * pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)` [`related`]
- 10.46.2.56 `int ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_int64_t (ppl_Octagonal_Shape_int8_t * pph, ppl_const_Octagonal_Shape_int64_t_t ph)` [`related`]

- 10.46.2.57 `int ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_int64_t_with_complexity (ppl_Octagonal_Shape_int8_t_t * pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)` [related]
- 10.46.2.58 `int ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_int8_t (ppl_Octagonal_Shape_int8_t_t * pph, ppl_const_Octagonal_Shape_int8_t_t ph)` [related]
- 10.46.2.59 `int ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_int8_t_with_complexity (ppl_Octagonal_Shape_int8_t_t * pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)` [related]
- 10.46.2.60 `int ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_long_double (ppl_Octagonal_Shape_int8_t_t * pph, ppl_const_Octagonal_Shape_long_double_t_t ph)` [related]
- 10.46.2.61 `int ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_long_double_with_complexity (ppl_Octagonal_Shape_int8_t_t * pph, ppl_const_Octagonal_Shape_long_double_t_t ph, int complexity)` [related]
- 10.46.2.62 `int ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_mpq_class (ppl_Octagonal_Shape_int8_t_t * pph, ppl_const_Octagonal_Shape_mpq_class_t_t ph)` [related]
- 10.46.2.63 `int ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_mpq_class_with_complexity (ppl_Octagonal_Shape_int8_t_t * pph, ppl_const_Octagonal_Shape_mpq_class_t_t ph, int complexity)` [related]
- 10.46.2.64 `int ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape_mpz_class (ppl_Octagonal_Shape_int8_t_t * pph, ppl_const_Octagonal_Shape_mpz_class_t_t ph)` [related]

- 10.46.2.65 `int ppl_new_Octagonal_Shape_int8_t_from_Octagonal_Shape-
mpz_class_with_complexity (ppl_Octagonal_Shape_int8_t_t * pph,
ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)` [related]
- 10.46.2.66 `int ppl_new_Octagonal_Shape_int8_t_from_Rational_Box (ppl-
Octagonal_Shape_int8_t_t * pph, ppl_const_Rational_Box_t ph)`
[related]
- 10.46.2.67 `int ppl_new_Octagonal_Shape_int8_t_from_Rational_Box_with_complexity
(ppl_Octagonal_Shape_int8_t_t * pph, ppl_const_Rational_Box_t ph, int complexity)`
[related]
- 10.46.2.68 `int ppl_new_Octagonal_Shape_int8_t_from_space_dimension
(ppl_Octagonal_Shape_int8_t_t * pph, ppl_dimension_type d, int empty)`
[related]
- 10.46.2.69 `int ppl_new_Octagonal_Shape_int8_t_from_Uint16_Box (ppl-
Octagonal_Shape_int8_t_t * pph, ppl_const_Uint16_Box_t ph)`
[related]
- 10.46.2.70 `int ppl_new_Octagonal_Shape_int8_t_from_Uint16_Box_with_complexity
(ppl_Octagonal_Shape_int8_t_t * pph, ppl_const_Uint16_Box_t ph, int complexity)`
[related]
- 10.46.2.71 `int ppl_new_Octagonal_Shape_int8_t_from_Uint32_Box (ppl-
Octagonal_Shape_int8_t_t * pph, ppl_const_Uint32_Box_t ph)`
[related]
- 10.46.2.72 `int ppl_new_Octagonal_Shape_int8_t_from_Uint32_Box_with_complexity
(ppl_Octagonal_Shape_int8_t_t * pph, ppl_const_Uint32_Box_t ph, int complexity)`
[related]

- 10.46.2.73** `int ppl_new_Octagonal_Shape_int8_t_from_Uint64_Box (ppl_Octagonal_Shape_int8_t * pph, ppl_const_Uint64_Box_t ph)` `[related]`
- 10.46.2.74** `int ppl_new_Octagonal_Shape_int8_t_from_Uint64_Box_with_complexity (ppl_Octagonal_Shape_int8_t * pph, ppl_const_Uint64_Box_t ph, int complexity)` `[related]`
- 10.46.2.75** `int ppl_new_Octagonal_Shape_int8_t_from_Uint8_Box (ppl_Octagonal_Shape_int8_t * pph, ppl_const_Uint8_Box_t ph)` `[related]`
- 10.46.2.76** `int ppl_new_Octagonal_Shape_int8_t_from_Uint8_Box_with_complexity (ppl_Octagonal_Shape_int8_t * pph, ppl_const_Uint8_Box_t ph, int complexity)` `[related]`
- 10.46.2.77** `int ppl_new_Octagonal_Shape_int8_t_from_Z_Box (ppl_Octagonal_Shape_int8_t * pph, ppl_const_Z_Box_t ph)` `[related]`
- 10.46.2.78** `int ppl_new_Octagonal_Shape_int8_t_from_Z_Box_with_complexity (ppl_Octagonal_Shape_int8_t * pph, ppl_const_Z_Box_t ph, int complexity)` `[related]`
- 10.46.2.79** `int ppl_new_Octagonal_Shape_int8_t_recycle_Congruence_System (ppl_Octagonal_Shape_int8_t * pph, ppl_Congruence_System_t cs)` `[related]`
- 10.46.2.80** `int ppl_new_Octagonal_Shape_int8_t_recycle_Constraint_System (ppl_Octagonal_Shape_int8_t * pph, ppl_Constraint_System_t cs)` `[related]`

- 10.46.2.81** `int ppl_new_Octagonal_Shape_int8_t_recycle_Generator_System`
`(ppl_Octagonal_Shape_int8_t * pph, ppl_Generator_System_t cs)` [**related**]
- 10.46.2.82** `int ppl_Octagonal_Shape_int8_t_add_congruence` `(ppl_Octagonal_Shape_int8_t_t ph,`
`ppl_const_Congruence_t c)` [**related**]
- 10.46.2.83** `int ppl_Octagonal_Shape_int8_t_add_congruences` `(ppl_Octagonal_Shape_int8_t_t ph,`
`ppl_const_Congruence_System_t cs)` [**related**]
- 10.46.2.84** `int ppl_Octagonal_Shape_int8_t_add_constraint` `(ppl_Octagonal_Shape_int8_t_t ph,`
`ppl_const_Constraint_t c)` [**related**]
- 10.46.2.85** `int ppl_Octagonal_Shape_int8_t_add_constraints` `(ppl_Octagonal_Shape_int8_t_t ph,`
`ppl_const_Constraint_System_t cs)` [**related**]
- 10.46.2.86** `int ppl_Octagonal_Shape_int8_t_add_recycled_congruences`
`(ppl_Octagonal_Shape_int8_t_t ph, ppl_Congruence_System_t cs)` [**related**]
- 10.46.2.87** `int ppl_Octagonal_Shape_int8_t_add_recycled_constraints`
`(ppl_Octagonal_Shape_int8_t_t ph, ppl_Constraint_System_t cs)` [**related**]
- 10.46.2.88** `int ppl_Octagonal_Shape_int8_t_add_space_dimensions_and_embed`
`(ppl_Octagonal_Shape_int8_t_t ph, ppl_dimension_type d)` [**related**]
- 10.46.2.89** `int ppl_Octagonal_Shape_int8_t_add_space_dimensions_and_project`
`(ppl_Octagonal_Shape_int8_t_t ph, ppl_dimension_type d)` [**related**]

- 10.46.2.90** `int ppl_Octagonal_Shape_int8_t_affine_dimension (ppl_const_Octagonal_Shape_int8_t_t ph, ppl_dimension_type * m)` [**related**]
- 10.46.2.91** `int ppl_Octagonal_Shape_int8_t_affine_image (ppl_Octagonal_Shape_int8_t_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.46.2.92** `int ppl_Octagonal_Shape_int8_t_affine_preimage (ppl_Octagonal_Shape_int8_t_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.46.2.93** `int ppl_Octagonal_Shape_int8_t_BHMZ05_widening_assign (ppl_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y)` [**related**]
- 10.46.2.94** `int ppl_Octagonal_Shape_int8_t_BHMZ05_widening_assign_with_tokens (ppl_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y, unsigned * tp)` [**related**]
- 10.46.2.95** `int ppl_Octagonal_Shape_int8_t_bounded_affine_image (ppl_Octagonal_Shape_int8_t_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [**related**]
- 10.46.2.96** `int ppl_Octagonal_Shape_int8_t_bounded_affine_preimage (ppl_Octagonal_Shape_int8_t_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [**related**]
- 10.46.2.97** `int ppl_Octagonal_Shape_int8_t_bounds_from_above (ppl_const_Octagonal_Shape_int8_t_t ph, ppl_const_Linear_Expression_t le)` [**related**]

- 10.46.2.98 `int ppl_Octagonal_Shape_int8_t_bounds_from_below (ppl_const_Octagonal_Shape_int8_t_t ph, ppl_const_Linear_Expression_t le)`
[related]
- 10.46.2.99 `int ppl_Octagonal_Shape_int8_t_CC76_extrapolation_assign (ppl_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y)`
[related]
- 10.46.2.100 `int ppl_Octagonal_Shape_int8_t_CC76_extrapolation_assign_with_tokens (ppl_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y, unsigned * tp)` [related]
- 10.46.2.101 `int ppl_Octagonal_Shape_int8_t_CC76_narrowing_assign (ppl_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y)`
[related]
- 10.46.2.102 `int ppl_Octagonal_Shape_int8_t_concatenate_assign (ppl_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y)` [related]
- 10.46.2.103 `int ppl_Octagonal_Shape_int8_t_constrains (ppl_Octagonal_Shape_int8_t_t ph, ppl_dimension_type var)` [related]
- 10.46.2.104 `int ppl_Octagonal_Shape_int8_t_contains_integer_point (ppl_const_Octagonal_Shape_int8_t_t ph)` [related]
- 10.46.2.105 `int ppl_Octagonal_Shape_int8_t_contains_Octagonal_Shape_int8_t (ppl_const_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y)`
[related]

- 10.46.2.106 `int ppl_Octagonal_Shape_int8_t_difference_assign (ppl_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y)` [*related*]
- 10.46.2.107 `int ppl_Octagonal_Shape_int8_t_drop_some_non_integer_points (ppl_Octagonal_Shape_int8_t_t ph, int complexity)` [*related*]
- 10.46.2.108 `int ppl_Octagonal_Shape_int8_t_drop_some_non_integer_points_2 (ppl_Octagonal_Shape_int8_t_t ph, ppl_dimension_type ds[], size_t n, int complexity)` [*related*]
- 10.46.2.109 `int ppl_Octagonal_Shape_int8_t_equals_Octagonal_Shape_int8_t (ppl_const_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y)` [*related*]
- 10.46.2.110 `int ppl_Octagonal_Shape_int8_t_expand_space_dimension (ppl_Octagonal_Shape_int8_t_t ph, ppl_dimension_type d, ppl_dimension_type m)` [*related*]
- 10.46.2.111 `int ppl_Octagonal_Shape_int8_t_external_memory_in_bytes (ppl_const_Octagonal_Shape_int8_t_t ps, size_t * sz)` [*related*]
- 10.46.2.112 `int ppl_Octagonal_Shape_int8_t_fold_space_dimensions (ppl_Octagonal_Shape_int8_t_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [*related*]
- 10.46.2.113 `int ppl_Octagonal_Shape_int8_t_frequency (ppl_const_Octagonal_Shape_int8_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)` [*related*]

- 10.46.2.114 `int ppl_Octagonal_Shape_int8_t_generalized_affine_image (ppl_Octagonal_Shape_int8_t_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.46.2.115 `int ppl_Octagonal_Shape_int8_t_generalized_affine_image_lhs_rhs (ppl_Octagonal_Shape_int8_t_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` [**related**]
- 10.46.2.116 `int ppl_Octagonal_Shape_int8_t_generalized_affine_preimage (ppl_Octagonal_Shape_int8_t_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.46.2.117 `int ppl_Octagonal_Shape_int8_t_generalized_affine_preimage_lhs_rhs (ppl_Octagonal_Shape_int8_t_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` [**related**]
- 10.46.2.118 `int ppl_Octagonal_Shape_int8_t_get_congruences (ppl_const_Octagonal_Shape_int8_t_t ph, ppl_const_Congruence_System_t * pcs)` [**related**]
- 10.46.2.119 `int ppl_Octagonal_Shape_int8_t_get_constraints (ppl_const_Octagonal_Shape_int8_t_t ph, ppl_const_Constraint_System_t * pcs)` [**related**]
- 10.46.2.120 `int ppl_Octagonal_Shape_int8_t_get_minimized_congruences (ppl_const_Octagonal_Shape_int8_t_t ph, ppl_const_Congruence_System_t * pcs)` [**related**]
- 10.46.2.121 `int ppl_Octagonal_Shape_int8_t_get_minimized_constraints (ppl_const_Octagonal_Shape_int8_t_t ph, ppl_const_Constraint_System_t * pcs)` [**related**]

- 10.46.2.122 `int ppl_Octagonal_Shape_int8_t_intersection_assign (ppl_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y)` [`related`]
- 10.46.2.123 `int ppl_Octagonal_Shape_int8_t_is_bounded (ppl_const_Octagonal_Shape_int8_t_t ph)` [`related`]
- 10.46.2.124 `int ppl_Octagonal_Shape_int8_t_is_discrete (ppl_const_Octagonal_Shape_int8_t_t ph)` [`related`]
- 10.46.2.125 `int ppl_Octagonal_Shape_int8_t_is_disjoint_from_Octagonal_Shape_int8_t (ppl_const_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y)` [`related`]
- 10.46.2.126 `int ppl_Octagonal_Shape_int8_t_is_empty (ppl_const_Octagonal_Shape_int8_t_t ph)` [`related`]
- 10.46.2.127 `int ppl_Octagonal_Shape_int8_t_is_topologically_closed (ppl_const_Octagonal_Shape_int8_t_t ph)` [`related`]
- 10.46.2.128 `int ppl_Octagonal_Shape_int8_t_is_universe (ppl_const_Octagonal_Shape_int8_t_t ph)` [`related`]
- 10.46.2.129 `int ppl_Octagonal_Shape_int8_t_limited_BHMZ05_extrapolation_assign (ppl_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y, ppl_const_Constraint_System_t cs)` [`related`]
- 10.46.2.130 `int ppl_Octagonal_Shape_int8_t_limited_BHMZ05_extrapolation_assign_with_tokens (ppl_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y, ppl_const_Constraint_System_t cs, unsigned * tp)` [`related`]

- 10.46.2.131 `int ppl_Octagonal_Shape_int8_t_limited_CC76_extrapolation_assign`
 (`ppl_Octagonal_Shape_int8_t_t x`, `ppl_const_Octagonal_Shape_int8_t_t y`,
`ppl_const_Constraint_System_t cs`) [**related**]
- 10.46.2.132 `int ppl_Octagonal_Shape_int8_t_limited_CC76_extrapolation_assign_with_tokens`
 (`ppl_Octagonal_Shape_int8_t_t x`, `ppl_const_Octagonal_Shape_int8_t_t y`,
`ppl_const_Constraint_System_t cs`, `unsigned * tp`) [**related**]
- 10.46.2.133 `int ppl_Octagonal_Shape_int8_t_linear_partition` (`ppl_const_Octagonal_Shape_-`
`int8_t_t x`, `ppl_const_Octagonal_Shape_int8_t_t y`, `ppl_Octagonal_Shape_int8_t_t *`
`p_inters`, `ppl_Pointset_Powerset_NNC_Polyhedron_t * p_rest`) [**related**]
- 10.46.2.134 `int ppl_Octagonal_Shape_int8_t_map_space_dimensions` (`ppl_-`
`Octagonal_Shape_int8_t_t ph`, `ppl_dimension_type maps[]`, `size_t n`)
 [**related**]
- 10.46.2.135 `int ppl_Octagonal_Shape_int8_t_maximize` (`ppl_const_Octagonal_Shape_int8_t_t ph`,
`ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`,
`int * poptimum`) [**related**]
- 10.46.2.136 `int ppl_Octagonal_Shape_int8_t_maximize_with_point` (`ppl_const_Octagonal_-`
`Shape_int8_t_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`,
`ppl_Coefficient_t ext_d`, `int * poptimum`, `ppl_Generator_t point`) [**related**]
- 10.46.2.137 `int ppl_Octagonal_Shape_int8_t_minimize` (`ppl_const_Octagonal_Shape_int8_t_t ph`,
`ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`,
`int * poptimum`) [**related**]
- 10.46.2.138 `int ppl_Octagonal_Shape_int8_t_minimize_with_point` (`ppl_const_Octagonal_-`
`Shape_int8_t_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`,
`ppl_Coefficient_t ext_d`, `int * poptimum`, `ppl_Generator_t point`) [**related**]

- 10.46.2.139 `int ppl_Octagonal_Shape_int8_t_OK (ppl_const_Octagonal_Shape_int8_t_t ph)`
[related]
- 10.46.2.140 `int ppl_Octagonal_Shape_int8_t_refine_with_congruence`
`(ppl_Octagonal_Shape_int8_t_t ph, ppl_const_Congruence_t c)` [related]
- 10.46.2.141 `int ppl_Octagonal_Shape_int8_t_refine_with_congruences (ppl_-`
`Octagonal_Shape_int8_t_t ph, ppl_const_Congruence_System_t cs)`
[related]
- 10.46.2.142 `int ppl_Octagonal_Shape_int8_t_refine_with_constraint`
`(ppl_Octagonal_Shape_int8_t_t ph, ppl_const_Constraint_t c)` [related]
- 10.46.2.143 `int ppl_Octagonal_Shape_int8_t_refine_with_constraints (ppl_-`
`Octagonal_Shape_int8_t_t ph, ppl_const_Constraint_System_t cs)`
[related]
- 10.46.2.144 `int ppl_Octagonal_Shape_int8_t_relation_with_Congruence`
`(ppl_const_Octagonal_Shape_int8_t_t ph, ppl_const_Congruence_t c)` [related]
- 10.46.2.145 `int ppl_Octagonal_Shape_int8_t_relation_with_Constraint`
`(ppl_const_Octagonal_Shape_int8_t_t ph, ppl_const_Constraint_t c)` [related]
- 10.46.2.146 `int ppl_Octagonal_Shape_int8_t_relation_with_Generator`
`(ppl_const_Octagonal_Shape_int8_t_t ph, ppl_const_Generator_t c)` [related]
- 10.46.2.147 `int ppl_Octagonal_Shape_int8_t_remove_higher_space_dimensions`
`(ppl_Octagonal_Shape_int8_t_t ph, ppl_dimension_type d)` [related]

- 10.46.2.148 `int ppl_Octagonal_Shape_int8_t_remove_space_dimensions`
 (`ppl_Octagonal_Shape_int8_t_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`) [`related`]
- 10.46.2.149 `int ppl_Octagonal_Shape_int8_t_simplify_using_context_assign`
 (`ppl_Octagonal_Shape_int8_t_t x`, `ppl_const_Octagonal_Shape_int8_t_t y`)
 [`related`]
- 10.46.2.150 `int ppl_Octagonal_Shape_int8_t_space_dimension` (`ppl_const_Octagonal_Shape_int8_t_t ph`, `ppl_dimension_type * m`) [`related`]
- 10.46.2.151 `int ppl_Octagonal_Shape_int8_t_strictly_contains_Octagonal_Shape_int8_t`
 (`ppl_const_Octagonal_Shape_int8_t_t x`, `ppl_const_Octagonal_Shape_int8_t_t y`)
 [`related`]
- 10.46.2.152 `int ppl_Octagonal_Shape_int8_t_time_elapse_assign` (`ppl_Octagonal_Shape_int8_t_t x`, `ppl_const_Octagonal_Shape_int8_t_t y`) [`related`]
- 10.46.2.153 `int ppl_Octagonal_Shape_int8_t_topological_closure_assign`
 (`ppl_Octagonal_Shape_int8_t_t ph`) [`related`]
- 10.46.2.154 `int ppl_Octagonal_Shape_int8_t_total_memory_in_bytes`
 (`ppl_const_Octagonal_Shape_int8_t_t ps`, `size_t * sz`) [`related`]
- 10.46.2.155 `int ppl_Octagonal_Shape_int8_t_unconstrain_space_dimension`
 (`ppl_Octagonal_Shape_int8_t_t ph`, `ppl_dimension_type var`) [`related`]
- 10.46.2.156 `int ppl_Octagonal_Shape_int8_t_unconstrain_space_dimensions`
 (`ppl_Octagonal_Shape_int8_t_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`) [`related`]

- 10.46.2.157 `int ppl_Octagonal_Shape_int8_t_upper_bound_assign (ppl_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y)` `[related]`
- 10.46.2.158 `int ppl_Octagonal_Shape_int8_t_upper_bound_assign_if_exact (ppl_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y)` `[related]`
- 10.46.2.159 `int ppl_Octagonal_Shape_int8_t_widening_assign (ppl_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y)` `[related]`
- 10.46.2.160 `int ppl_Octagonal_Shape_int8_t_widening_assign_with_tokens (ppl_Octagonal_Shape_int8_t_t x, ppl_const_Octagonal_Shape_int8_t_t y, unsigned *tp)` `[related]`
- 10.46.2.161 `int ppl_Octagonal_Shape_int8_t_wrap_assign (ppl_Octagonal_Shape_int8_t_t ph, ppl_dimension_type ds[], size_t n, enum ppl_enum_Bounded_Integer_Type_Width w, enum ppl_enum_Bounded_Integer_Type_Representation r, enum ppl_enum_Bounded_Integer_Type_Overflow o, const ppl_const_Constraint_System_t *pcs, unsigned complexity_threshold, int wrap_individually)` `[related]`
- 10.46.2.162 `int ppl_one_affine_ranking_function_MS_Octagonal_Shape_int8_t (ppl_const_Octagonal_Shape_int8_t_t pset, ppl_Generator_t point)` `[related]`
- 10.46.2.163 `int ppl_one_affine_ranking_function_MS_Octagonal_Shape_int8_t_2 (ppl_const_Octagonal_Shape_int8_t_t pset_before, ppl_const_Octagonal_Shape_int8_t_t pset_after, ppl_Generator_t point)` `[related]`
- 10.46.2.164 `int ppl_one_affine_ranking_function_PR_Octagonal_Shape_int8_t (ppl_const_Octagonal_Shape_int8_t_t pset, ppl_Generator_t point)` `[related]`

- 10.46.2.165 `int ppl_one_affine_ranking_function_PR_Octagonal_Shape_int8_t_2 (ppl_const_Octagonal_Shape_int8_t_t pset_before, ppl_const_Octagonal_Shape_int8_t_t pset_after, ppl_Generator_t point)` [**related**]
- 10.46.2.166 `int ppl_termination_test_MS_Octagonal_Shape_int8_t (ppl_const_Octagonal_Shape_int8_t_t pset)` [**related**]
- 10.46.2.167 `int ppl_termination_test_MS_Octagonal_Shape_int8_t_2 (ppl_const_Octagonal_Shape_int8_t_t pset_before, ppl_const_Octagonal_Shape_int8_t_t pset_after)` [**related**]
- 10.46.2.168 `int ppl_termination_test_PR_Octagonal_Shape_int8_t (ppl_const_Octagonal_Shape_int8_t_t pset)` [**related**]
- 10.46.2.169 `int ppl_termination_test_PR_Octagonal_Shape_int8_t_2 (ppl_const_Octagonal_Shape_int8_t_t pset_before, ppl_const_Octagonal_Shape_int8_t_t pset_after)` [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.47 `ppl_Octagonal_Shape_long_double_tag` Interface Reference

Types and functions for [ppl_Octagonal_Shape_long_double_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Octagonal_Shape_long_double (ppl_const_Octagonal_Shape_long_double_t ph)`
- `int ppl_new_Octagonal_Shape_long_double_from_space_dimension (ppl_Octagonal_Shape_long_double_t *pph, ppl_dimension_type d, int empty)`
- `int ppl_new_Octagonal_Shape_long_double_from_Int8_Box (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Int8_Box_t ph)`
- `int ppl_new_Octagonal_Shape_long_double_from_Int16_Box (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Int16_Box_t ph)`

- `int ppl_new_Octagonal_Shape_long_double_from_Int32_Box` (`ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Int32_Box_t ph`)
- `int ppl_new_Octagonal_Shape_long_double_from_Int64_Box` (`ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Int64_Box_t ph`)
- `int ppl_new_Octagonal_Shape_long_double_from_Uint8_Box` (`ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Uint8_Box_t ph`)
- `int ppl_new_Octagonal_Shape_long_double_from_Uint16_Box` (`ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Uint16_Box_t ph`)
- `int ppl_new_Octagonal_Shape_long_double_from_Uint32_Box` (`ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Uint32_Box_t ph`)
- `int ppl_new_Octagonal_Shape_long_double_from_Uint64_Box` (`ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Uint64_Box_t ph`)
- `int ppl_new_Octagonal_Shape_long_double_from_Z_Box` (`ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Z_Box_t ph`)
- `int ppl_new_Octagonal_Shape_long_double_from_Rational_Box` (`ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Rational_Box_t ph`)
- `int ppl_new_Octagonal_Shape_long_double_from_BD_Shape_int8_t` (`ppl_Octagonal_Shape_long_double_t *pph, ppl_const_BD_Shape_int8_t_t ph`)
- `int ppl_new_Octagonal_Shape_long_double_from_BD_Shape_int16_t` (`ppl_Octagonal_Shape_long_double_t *pph, ppl_const_BD_Shape_int16_t_t ph`)
- `int ppl_new_Octagonal_Shape_long_double_from_BD_Shape_int32_t` (`ppl_Octagonal_Shape_long_double_t *pph, ppl_const_BD_Shape_int32_t_t ph`)
- `int ppl_new_Octagonal_Shape_long_double_from_BD_Shape_int64_t` (`ppl_Octagonal_Shape_long_double_t *pph, ppl_const_BD_Shape_int64_t_t ph`)
- `int ppl_new_Octagonal_Shape_long_double_from_BD_Shape_mpz_class` (`ppl_Octagonal_Shape_long_double_t *pph, ppl_const_BD_Shape_mpz_class_t ph`)
- `int ppl_new_Octagonal_Shape_long_double_from_BD_Shape_mpq_class` (`ppl_Octagonal_Shape_long_double_t *pph, ppl_const_BD_Shape_mpq_class_t ph`)
- `int ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_int8_t` (`ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph`)
- `int ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_int16_t` (`ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph`)
- `int ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_int32_t` (`ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph`)
- `int ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_int64_t` (`ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph`)
- `int ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_mpz_class` (`ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph`)
- `int ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_mpq_class` (`ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph`)
- `int ppl_new_Octagonal_Shape_long_double_from_C_Polyhedron` (`ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Polyhedron_t ph`)
- `int ppl_new_Octagonal_Shape_long_double_from_NNC_Polyhedron` (`ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Polyhedron_t ph`)
- `int ppl_new_Octagonal_Shape_long_double_from_Grid` (`ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Grid_t ph`)
- `int ppl_new_Octagonal_Shape_long_double_from_Float_Box` (`ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Float_Box_t ph`)
- `int ppl_new_Octagonal_Shape_long_double_from_BD_Shape_float` (`ppl_Octagonal_Shape_long_double_t *pph, ppl_const_BD_Shape_float_t ph`)
- `int ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_float` (`ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Octagonal_Shape_float_t ph`)

- [int ppl_new_Octagonal_Shape_long_double_from_Double_Box](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Double_Box_t ph)
- [int ppl_new_Octagonal_Shape_long_double_from_BD_Shape_double](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_BD_Shape_double_t ph)
- [int ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_double](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Octagonal_Shape_double_t ph)
- [int ppl_new_Octagonal_Shape_long_double_from_Long_Double_Box](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Long_Double_Box_t ph)
- [int ppl_new_Octagonal_Shape_long_double_from_BD_Shape_long_double](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_BD_Shape_long_double_t ph)
- [int ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_long_double](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Octagonal_Shape_long_double_t ph)
- [int ppl_new_Octagonal_Shape_long_double_from_Int8_Box_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Int8_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_long_double_from_Int16_Box_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Int16_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_long_double_from_Int32_Box_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Int32_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_long_double_from_Int64_Box_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Int64_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_long_double_from_Uint8_Box_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Uint8_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_long_double_from_Uint16_Box_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Uint16_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_long_double_from_Uint32_Box_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Uint32_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_long_double_from_Uint64_Box_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Uint64_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_long_double_from_Z_Box_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Z_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_long_double_from_Rational_Box_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Rational_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_long_double_from_BD_Shape_int8_t_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_long_double_from_BD_Shape_int16_t_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_long_double_from_BD_Shape_int32_t_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_long_double_from_BD_Shape_int64_t_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_long_double_from_BD_Shape_mpz_class_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_long_double_from_BD_Shape_mpq_class_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_int8_t_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_int16_t_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_int32_t_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)

- int [ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_int64_t_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_mpz_class_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_mpq_class_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_long_double_from_C_Polyhedron_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_long_double_from_NNC_Polyhedron_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_long_double_from_Grid_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Grid_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_long_double_from_Float_Box_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Float_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_long_double_from_BD_Shape_float_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_BD_Shape_float_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_float_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_long_double_from_Double_Box_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Double_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_long_double_from_BD_Shape_double_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_BD_Shape_double_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_double_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_long_double_from_Long_Double_Box_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_long_double_from_BD_Shape_long_double_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_long_double_with_complexity](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_long_double_from_Constraint_System](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Constraint_System_t cs)
- int [ppl_new_Octagonal_Shape_long_double_from_Congruence_System](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Congruence_System_t cs)
- int [ppl_new_Octagonal_Shape_long_double_from_Generator_System](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_const_Generator_System_t cs)
- int [ppl_Octagonal_Shape_long_double_space_dimension](#) (ppl_const_Octagonal_Shape_long_double_t ph, ppl_dimension_type *m)
- int [ppl_Octagonal_Shape_long_double_affine_dimension](#) (ppl_const_Octagonal_Shape_long_double_t ph, ppl_dimension_type *m)
- int [ppl_Octagonal_Shape_long_double_relation_with_Constraint](#) (ppl_const_Octagonal_Shape_long_double_t ph, ppl_const_Constraint_t c)
- int [ppl_Octagonal_Shape_long_double_relation_with_Generator](#) (ppl_const_Octagonal_Shape_long_double_t ph, ppl_const_Generator_t c)
- int [ppl_Octagonal_Shape_long_double_relation_with_Congruence](#) (ppl_const_Octagonal_Shape_long_double_t ph, ppl_const_Congruence_t c)

- `int ppl_Octagonal_Shape_long_double_get_constraints` (`ppl_const_Octagonal_Shape_long_double_t ph`, `ppl_const_Constraint_System_t *pcs`)
- `int ppl_Octagonal_Shape_long_double_get_congruences` (`ppl_const_Octagonal_Shape_long_double_t ph`, `ppl_const_Congruence_System_t *pcs`)
- `int ppl_Octagonal_Shape_long_double_get_minimized_constraints` (`ppl_const_Octagonal_Shape_long_double_t ph`, `ppl_const_Constraint_System_t *pcs`)
- `int ppl_Octagonal_Shape_long_double_get_minimized_congruences` (`ppl_const_Octagonal_Shape_long_double_t ph`, `ppl_const_Congruence_System_t *pcs`)
- `int ppl_Octagonal_Shape_long_double_is_empty` (`ppl_const_Octagonal_Shape_long_double_t ph`)
- `int ppl_Octagonal_Shape_long_double_is_universe` (`ppl_const_Octagonal_Shape_long_double_t ph`)
- `int ppl_Octagonal_Shape_long_double_is_bounded` (`ppl_const_Octagonal_Shape_long_double_t ph`)
- `int ppl_Octagonal_Shape_long_double_contains_integer_point` (`ppl_const_Octagonal_Shape_long_double_t ph`)
- `int ppl_Octagonal_Shape_long_double_is_topologically_closed` (`ppl_const_Octagonal_Shape_long_double_t ph`)
- `int ppl_Octagonal_Shape_long_double_is_discrete` (`ppl_const_Octagonal_Shape_long_double_t ph`)
- `int ppl_Octagonal_Shape_long_double_topological_closure_assign` (`ppl_Octagonal_Shape_long_double_t ph`)
- `int ppl_Octagonal_Shape_long_double_bounds_from_above` (`ppl_const_Octagonal_Shape_long_double_t ph`, `ppl_const_Linear_Expression_t le`)
- `int ppl_Octagonal_Shape_long_double_bounds_from_below` (`ppl_const_Octagonal_Shape_long_double_t ph`, `ppl_const_Linear_Expression_t le`)
- `int ppl_Octagonal_Shape_long_double_maximize` (`ppl_const_Octagonal_Shape_long_double_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int *poptimum`)
- `int ppl_Octagonal_Shape_long_double_minimize` (`ppl_const_Octagonal_Shape_long_double_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int *poptimum`)
- `int ppl_Octagonal_Shape_long_double_maximize_with_point` (`ppl_const_Octagonal_Shape_long_double_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int *poptimum`, `ppl_Generator_t point`)
- `int ppl_Octagonal_Shape_long_double_minimize_with_point` (`ppl_const_Octagonal_Shape_long_double_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int *poptimum`, `ppl_Generator_t point`)
- `int ppl_Octagonal_Shape_long_double_frequency` (`ppl_const_Octagonal_Shape_long_double_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_fn`, `ppl_Coefficient_t ext_fd`, `ppl_Coefficient_t ext_vn`, `ppl_Coefficient_t ext_vd`)
- `int ppl_Octagonal_Shape_long_double_contains_Octagonal_Shape_long_double` (`ppl_const_Octagonal_Shape_long_double_t x`, `ppl_const_Octagonal_Shape_long_double_t y`)
- `int ppl_Octagonal_Shape_long_double_strictly_contains_Octagonal_Shape_long_double` (`ppl_const_Octagonal_Shape_long_double_t x`, `ppl_const_Octagonal_Shape_long_double_t y`)
- `int ppl_Octagonal_Shape_long_double_is_disjoint_from_Octagonal_Shape_long_double` (`ppl_const_Octagonal_Shape_long_double_t x`, `ppl_const_Octagonal_Shape_long_double_t y`)
- `int ppl_Octagonal_Shape_long_double_equals_Octagonal_Shape_long_double` (`ppl_const_Octagonal_Shape_long_double_t x`, `ppl_const_Octagonal_Shape_long_double_t y`)
- `int ppl_Octagonal_Shape_long_double_OK` (`ppl_const_Octagonal_Shape_long_double_t ph`)
- `int ppl_Octagonal_Shape_long_double_add_constraint` (`ppl_Octagonal_Shape_long_double_t ph`, `ppl_const_Constraint_t c`)
- `int ppl_Octagonal_Shape_long_double_add_congruence` (`ppl_Octagonal_Shape_long_double_t ph`, `ppl_const_Congruence_t c`)

- int [ppl_Octagonal_Shape_long_double_add_constraints](#) (ppl_Octagonal_Shape_long_double_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Octagonal_Shape_long_double_add_congruences](#) (ppl_Octagonal_Shape_long_double_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Octagonal_Shape_long_double_refine_with_constraint](#) (ppl_Octagonal_Shape_long_double_t ph, ppl_const_Constraint_t c)
- int [ppl_Octagonal_Shape_long_double_refine_with_congruence](#) (ppl_Octagonal_Shape_long_double_t ph, ppl_const_Congruence_t c)
- int [ppl_Octagonal_Shape_long_double_refine_with_constraints](#) (ppl_Octagonal_Shape_long_double_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Octagonal_Shape_long_double_refine_with_congruences](#) (ppl_Octagonal_Shape_long_double_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Octagonal_Shape_long_double_intersection_assign](#) (ppl_Octagonal_Shape_long_double_t x, ppl_const_Octagonal_Shape_long_double_t y)
- int [ppl_Octagonal_Shape_long_double_upper_bound_assign](#) (ppl_Octagonal_Shape_long_double_t x, ppl_const_Octagonal_Shape_long_double_t y)
- int [ppl_Octagonal_Shape_long_double_difference_assign](#) (ppl_Octagonal_Shape_long_double_t x, ppl_const_Octagonal_Shape_long_double_t y)
- int [ppl_Octagonal_Shape_long_double_concatenate_assign](#) (ppl_Octagonal_Shape_long_double_t x, ppl_const_Octagonal_Shape_long_double_t y)
- int [ppl_Octagonal_Shape_long_double_time_elapse_assign](#) (ppl_Octagonal_Shape_long_double_t x, ppl_const_Octagonal_Shape_long_double_t y)
- int [ppl_Octagonal_Shape_long_double_upper_bound_assign_if_exact](#) (ppl_Octagonal_Shape_long_double_t x, ppl_const_Octagonal_Shape_long_double_t y)
- int [ppl_Octagonal_Shape_long_double_simplify_using_context_assign](#) (ppl_Octagonal_Shape_long_double_t x, ppl_const_Octagonal_Shape_long_double_t y)
- int [ppl_Octagonal_Shape_long_double_constrains](#) (ppl_Octagonal_Shape_long_double_t ph, [ppl_dimension_type](#) var)
- int [ppl_Octagonal_Shape_long_double_unconstrain_space_dimension](#) (ppl_Octagonal_Shape_long_double_t ph, [ppl_dimension_type](#) var)
- int [ppl_Octagonal_Shape_long_double_unconstrain_space_dimensions](#) (ppl_Octagonal_Shape_long_double_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Octagonal_Shape_long_double_affine_image](#) (ppl_Octagonal_Shape_long_double_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_long_double_affine_preimage](#) (ppl_Octagonal_Shape_long_double_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_long_double_bounded_affine_image](#) (ppl_Octagonal_Shape_long_double_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_long_double_bounded_affine_preimage](#) (ppl_Octagonal_Shape_long_double_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_long_double_generalized_affine_image](#) (ppl_Octagonal_Shape_long_double_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_long_double_generalized_affine_preimage](#) (ppl_Octagonal_Shape_long_double_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_long_double_generalized_affine_image_lhs_rhs](#) (ppl_Octagonal_Shape_long_double_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)

- [int ppl_Octagonal_Shape_long_double_generalized_affine_preimage_lhs_rhs](#) (ppl_Octagonal_Shape_long_double_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- [int ppl_Octagonal_Shape_long_double_add_space_dimensions_and_embed](#) (ppl_Octagonal_Shape_long_double_t ph, [ppl_dimension_type](#) d)
- [int ppl_Octagonal_Shape_long_double_add_space_dimensions_and_project](#) (ppl_Octagonal_Shape_long_double_t ph, [ppl_dimension_type](#) d)
- [int ppl_Octagonal_Shape_long_double_remove_space_dimensions](#) (ppl_Octagonal_Shape_long_double_t ph, [ppl_dimension_type](#) ds[], [size_t](#) n)
- [int ppl_Octagonal_Shape_long_double_remove_higher_space_dimensions](#) (ppl_Octagonal_Shape_long_double_t ph, [ppl_dimension_type](#) d)
- [int ppl_Octagonal_Shape_long_double_expand_space_dimension](#) (ppl_Octagonal_Shape_long_double_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- [int ppl_Octagonal_Shape_long_double_fold_space_dimensions](#) (ppl_Octagonal_Shape_long_double_t ph, [ppl_dimension_type](#) ds[], [size_t](#) n, [ppl_dimension_type](#) d)
- [int ppl_Octagonal_Shape_long_double_map_space_dimensions](#) (ppl_Octagonal_Shape_long_double_t ph, [ppl_dimension_type](#) maps[], [size_t](#) n)
- [int ppl_Octagonal_Shape_long_double_drop_some_non_integer_points](#) (ppl_Octagonal_Shape_long_double_t ph, [int](#) complexity)
- [int ppl_Octagonal_Shape_long_double_drop_some_non_integer_points_2](#) (ppl_Octagonal_Shape_long_double_t ph, [ppl_dimension_type](#) ds[], [size_t](#) n, [int](#) complexity)
- [int ppl_Octagonal_Shape_long_double_external_memory_in_bytes](#) (ppl_const_Octagonal_Shape_long_double_t ps, [size_t](#) *sz)
- [int ppl_Octagonal_Shape_long_double_total_memory_in_bytes](#) (ppl_const_Octagonal_Shape_long_double_t ps, [size_t](#) *sz)
- [int ppl_Octagonal_Shape_long_double_BHMZ05_widening_assign_with_tokens](#) (ppl_Octagonal_Shape_long_double_t x, ppl_const_Octagonal_Shape_long_double_t y, unsigned *tp)
- [int ppl_Octagonal_Shape_long_double_BHMZ05_widening_assign](#) (ppl_Octagonal_Shape_long_double_t x, ppl_const_Octagonal_Shape_long_double_t y)
- [int ppl_Octagonal_Shape_long_double_widening_assign_with_tokens](#) (ppl_Octagonal_Shape_long_double_t x, ppl_const_Octagonal_Shape_long_double_t y, unsigned *tp)
- [int ppl_Octagonal_Shape_long_double_widening_assign](#) (ppl_Octagonal_Shape_long_double_t x, ppl_const_Octagonal_Shape_long_double_t y)
- [int ppl_Octagonal_Shape_long_double_limited_BHMZ05_extrapolation_assign_with_tokens](#) (ppl_Octagonal_Shape_long_double_t x, ppl_const_Octagonal_Shape_long_double_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- [int ppl_Octagonal_Shape_long_double_limited_CC76_extrapolation_assign_with_tokens](#) (ppl_Octagonal_Shape_long_double_t x, ppl_const_Octagonal_Shape_long_double_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- [int ppl_Octagonal_Shape_long_double_limited_BHMZ05_extrapolation_assign](#) (ppl_Octagonal_Shape_long_double_t x, ppl_const_Octagonal_Shape_long_double_t y, ppl_const_Constraint_System_t cs)
- [int ppl_Octagonal_Shape_long_double_limited_CC76_extrapolation_assign](#) (ppl_Octagonal_Shape_long_double_t x, ppl_const_Octagonal_Shape_long_double_t y, ppl_const_Constraint_System_t cs)
- [int ppl_Octagonal_Shape_long_double_CC76_extrapolation_assign_with_tokens](#) (ppl_Octagonal_Shape_long_double_t x, ppl_const_Octagonal_Shape_long_double_t y, unsigned *tp)
- [int ppl_Octagonal_Shape_long_double_CC76_extrapolation_assign](#) (ppl_Octagonal_Shape_long_double_t x, ppl_const_Octagonal_Shape_long_double_t y)
- [int ppl_Octagonal_Shape_long_double_CC76_narrowing_assign](#) (ppl_Octagonal_Shape_long_double_t x, ppl_const_Octagonal_Shape_long_double_t y)

- int [ppl_Octagonal_Shape_long_double_linear_partition](#) (ppl_const_Octagonal_Shape_long_double_t x, ppl_const_Octagonal_Shape_long_double_t y, ppl_Octagonal_Shape_long_double_t *p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest)
- int [ppl_Octagonal_Shape_long_double_wrap_assign](#) (ppl_Octagonal_Shape_long_double_t ph, ppl_dimension_type ds[], size_t n, enum [ppl_enum_Bounded_Integer_Type_Width](#) w, enum [ppl_enum_Bounded_Integer_Type_Representation](#) r, enum [ppl_enum_Bounded_Integer_Type_Overflow](#) o, const ppl_const_Constraint_System_t *pcs, unsigned complexity_threshold, int wrap_individually)
- int [ppl_new_Octagonal_Shape_long_double_recycle_Constraint_System](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_Constraint_System_t cs)
- int [ppl_new_Octagonal_Shape_long_double_recycle_Congruence_System](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_Congruence_System_t cs)
- int [ppl_new_Octagonal_Shape_long_double_recycle_Generator_System](#) (ppl_Octagonal_Shape_long_double_t *pph, ppl_Generator_System_t cs)
- int [ppl_assign_Octagonal_Shape_long_double_from_Octagonal_Shape_long_double](#) (ppl_Octagonal_Shape_long_double_t dst, ppl_const_Octagonal_Shape_long_double_t src)
- int [ppl_Octagonal_Shape_long_double_add_recycled_constraints](#) (ppl_Octagonal_Shape_long_double_t ph, ppl_Constraint_System_t cs)
- int [ppl_Octagonal_Shape_long_double_add_recycled_congruences](#) (ppl_Octagonal_Shape_long_double_t ph, ppl_Congruence_System_t cs)
- int [ppl_termination_test_MS_Octagonal_Shape_long_double](#) (ppl_const_Octagonal_Shape_long_double_t pset)
- int [ppl_termination_test_PR_Octagonal_Shape_long_double](#) (ppl_const_Octagonal_Shape_long_double_t pset)
- int [ppl_one_affine_ranking_function_MS_Octagonal_Shape_long_double](#) (ppl_const_Octagonal_Shape_long_double_t pset, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_Octagonal_Shape_long_double](#) (ppl_const_Octagonal_Shape_long_double_t pset, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_Octagonal_Shape_long_double](#) (ppl_const_Octagonal_Shape_long_double_t pset, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_Octagonal_Shape_long_double](#) (ppl_const_Octagonal_Shape_long_double_t pset, ppl_Polyhedron_t ph)
- int [ppl_termination_test_MS_Octagonal_Shape_long_double_2](#) (ppl_const_Octagonal_Shape_long_double_t pset_before, ppl_const_Octagonal_Shape_long_double_t pset_after)
- int [ppl_termination_test_PR_Octagonal_Shape_long_double_2](#) (ppl_const_Octagonal_Shape_long_double_t pset_before, ppl_const_Octagonal_Shape_long_double_t pset_after)
- int [ppl_one_affine_ranking_function_MS_Octagonal_Shape_long_double_2](#) (ppl_const_Octagonal_Shape_long_double_t pset_before, ppl_const_Octagonal_Shape_long_double_t pset_after, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_Octagonal_Shape_long_double_2](#) (ppl_const_Octagonal_Shape_long_double_t pset_before, ppl_const_Octagonal_Shape_long_double_t pset_after, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_Octagonal_Shape_long_double_2](#) (ppl_const_Octagonal_Shape_long_double_t pset_before, ppl_const_Octagonal_Shape_long_double_t pset_after, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_Octagonal_Shape_long_double_2](#) (ppl_const_Octagonal_Shape_long_double_t pset_before, ppl_const_Octagonal_Shape_long_double_t pset_after, ppl_Polyhedron_t ph)

10.47.1 Detailed Description

Types and functions for [ppl_Octagonal_Shape_long_double_tag](#).

10.47.2 Friends And Related Function Documentation

10.47.2.1 `int ppl_all_affine_ranking_functions_MS_Octagonal_Shape_long_double`
`(ppl_const_Octagonal_Shape_long_double_t pset, ppl_Polyhedron_t ph)` [**related**]

10.47.2.2 `int ppl_all_affine_ranking_functions_MS_Octagonal_Shape_long_double_2`
`(ppl_const_Octagonal_Shape_long_double_t pset_before, ppl_const_`
`Octagonal_Shape_long_double_t pset_after, ppl_Polyhedron_t ph)`
[related]

10.47.2.3 `int ppl_all_affine_ranking_functions_PR_Octagonal_Shape_long_double`
`(ppl_const_Octagonal_Shape_long_double_t pset, ppl_Polyhedron_t ph)` [**related**]

10.47.2.4 `int ppl_all_affine_ranking_functions_PR_Octagonal_Shape_long_double_2`
`(ppl_const_Octagonal_Shape_long_double_t pset_before, ppl_const_`
`Octagonal_Shape_long_double_t pset_after, ppl_Polyhedron_t ph)`
[related]

10.47.2.5 `int ppl_assign_Octagonal_Shape_long_double_from_Octagonal_Shape_long_double`
`(ppl_Octagonal_Shape_long_double_t dst, ppl_const_Octagonal_Shape_long_double_t`
`src)` [**related**]

10.47.2.6 `int ppl_delete_Octagonal_Shape_long_double` `(ppl_const_Octagonal_Shape_long_`
`double_t ph)` [**related**]

10.47.2.7 `int ppl_new_Octagonal_Shape_long_double_from_BD_Shape_double`
`(ppl_Octagonal_Shape_long_double_t * pph, ppl_const_BD_Shape_double_t ph)`
[related]

10.47.2.8 `int ppl_new_Octagonal_Shape_long_double_from_BD_Shape_double_with_complexity`
`(ppl_Octagonal_Shape_long_double_t * pph, ppl_const_BD_Shape_double_t ph, int`
`complexity)` [**related**]

- 10.47.2.9 `int ppl_new_Octagonal_Shape_long_double_from_BD_Shape_float`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_BD_Shape_float_t ph`)
[related]
- 10.47.2.10 `int ppl_new_Octagonal_Shape_long_double_from_BD_Shape_float_with_complexity`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_BD_Shape_float_t ph`, `int complexity`) [related]
- 10.47.2.11 `int ppl_new_Octagonal_Shape_long_double_from_BD_Shape_int16_t`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_BD_Shape_int16_t_t ph`)
[related]
- 10.47.2.12 `int ppl_new_Octagonal_Shape_long_double_from_BD_Shape_int16_t_with_complexity`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_BD_Shape_int16_t_t ph`, `int complexity`) [related]
- 10.47.2.13 `int ppl_new_Octagonal_Shape_long_double_from_BD_Shape_int32_t`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_BD_Shape_int32_t_t ph`)
[related]
- 10.47.2.14 `int ppl_new_Octagonal_Shape_long_double_from_BD_Shape_int32_t_with_complexity`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_BD_Shape_int32_t_t ph`, `int complexity`) [related]
- 10.47.2.15 `int ppl_new_Octagonal_Shape_long_double_from_BD_Shape_int64_t`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_BD_Shape_int64_t_t ph`)
[related]
- 10.47.2.16 `int ppl_new_Octagonal_Shape_long_double_from_BD_Shape_int64_t_with_complexity`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_BD_Shape_int64_t_t ph`, `int complexity`) [related]

- 10.47.2.17 `int ppl_new_Octagonal_Shape_long_double_from_BD_Shape_int8_t`
 (`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_BD_Shape_int8_t_t ph`)
 [related]
- 10.47.2.18 `int ppl_new_Octagonal_Shape_long_double_from_BD_Shape_int8_t_with_complexity`
 (`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_BD_Shape_int8_t_t ph`, `int complexity`) [related]
- 10.47.2.19 `int ppl_new_Octagonal_Shape_long_double_from_BD_Shape_long_double`
 (`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_BD_Shape_long_double_t ph`)
 [related]
- 10.47.2.20 `int ppl_new_Octagonal_Shape_long_double_from_BD_Shape_long_double_with_complexity`
 (`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_BD_Shape_long_double_t ph`, `int complexity`) [related]
- 10.47.2.21 `int ppl_new_Octagonal_Shape_long_double_from_BD_Shape_mpq_class`
 (`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_BD_Shape_mpq_class_t ph`)
 [related]
- 10.47.2.22 `int ppl_new_Octagonal_Shape_long_double_from_BD_Shape_mpq_class_with_complexity`
 (`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_BD_Shape_mpq_class_t ph`, `int complexity`) [related]
- 10.47.2.23 `int ppl_new_Octagonal_Shape_long_double_from_BD_Shape_mpz_class`
 (`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_BD_Shape_mpz_class_t ph`)
 [related]
- 10.47.2.24 `int ppl_new_Octagonal_Shape_long_double_from_BD_Shape_mpz_class_with_complexity`
 (`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_BD_Shape_mpz_class_t ph`, `int complexity`) [related]

- 10.47.2.25 `int ppl_new_Octagonal_Shape_long_double_from_C_Polyhedron`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_Polyhedron_t ph`)
[related]
- 10.47.2.26 `int ppl_new_Octagonal_Shape_long_double_from_C_Polyhedron_with_complexity`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_Polyhedron_t ph`, `int complexity`) [related]
- 10.47.2.27 `int ppl_new_Octagonal_Shape_long_double_from_Congruence_System`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_Congruence_System_t cs`)
[related]
- 10.47.2.28 `int ppl_new_Octagonal_Shape_long_double_from_Constraint_System`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_Constraint_System_t cs`)
[related]
- 10.47.2.29 `int ppl_new_Octagonal_Shape_long_double_from_Double_Box`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_Double_Box_t ph`)
[related]
- 10.47.2.30 `int ppl_new_Octagonal_Shape_long_double_from_Double_Box_with_complexity`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_Double_Box_t ph`, `int complexity`) [related]
- 10.47.2.31 `int ppl_new_Octagonal_Shape_long_double_from_Float_Box`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_Float_Box_t ph`) [related]
- 10.47.2.32 `int ppl_new_Octagonal_Shape_long_double_from_Float_Box_with_complexity`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_Float_Box_t ph`, `int complexity`) [related]

- 10.47.2.33 `int ppl_new_Octagonal_Shape_long_double_from_Generator_System`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_Generator_System_t cs`)
[related]
- 10.47.2.34 `int ppl_new_Octagonal_Shape_long_double_from_Grid` (`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_Grid_t ph`)
[related]
- 10.47.2.35 `int ppl_new_Octagonal_Shape_long_double_from_Grid_with_complexity`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_Grid_t ph`, `int complexity`)
[related]
- 10.47.2.36 `int ppl_new_Octagonal_Shape_long_double_from_Int16_Box`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_Int16_Box_t ph`)
[related]
- 10.47.2.37 `int ppl_new_Octagonal_Shape_long_double_from_Int16_Box_with_complexity`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_Int16_Box_t ph`, `int complexity`) [related]
- 10.47.2.38 `int ppl_new_Octagonal_Shape_long_double_from_Int32_Box`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_Int32_Box_t ph`)
[related]
- 10.47.2.39 `int ppl_new_Octagonal_Shape_long_double_from_Int32_Box_with_complexity`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_Int32_Box_t ph`, `int complexity`) [related]
- 10.47.2.40 `int ppl_new_Octagonal_Shape_long_double_from_Int64_Box`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_Int64_Box_t ph`)
[related]

- 10.47.2.41** `int ppl_new_Octagonal_Shape_long_double_from_Int64_Box_with_complexity`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_Int64_Box_t ph`, `int complexity`) [**related**]
- 10.47.2.42** `int ppl_new_Octagonal_Shape_long_double_from_Int8_Box`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_Int8_Box_t ph`) [**related**]
- 10.47.2.43** `int ppl_new_Octagonal_Shape_long_double_from_Int8_Box_with_complexity`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_Int8_Box_t ph`, `int complexity`) [**related**]
- 10.47.2.44** `int ppl_new_Octagonal_Shape_long_double_from_Long_Double_Box`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_Long_Double_Box_t ph`) [**related**]
- 10.47.2.45** `int ppl_new_Octagonal_Shape_long_double_from_Long_Double_Box_with_complexity`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_Long_Double_Box_t ph`, `int complexity`) [**related**]
- 10.47.2.46** `int ppl_new_Octagonal_Shape_long_double_from_NNC_Polyhedron`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_Polyhedron_t ph`) [**related**]
- 10.47.2.47** `int ppl_new_Octagonal_Shape_long_double_from_NNC_Polyhedron_with_complexity`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_Polyhedron_t ph`, `int complexity`) [**related**]
- 10.47.2.48** `int ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_double`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_Octagonal_Shape_double_t ph`) [**related**]

- 10.47.2.49 `int ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_double_with_complexity (ppl_Octagonal_Shape_long_double_t * pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)` [**related**]
- 10.47.2.50 `int ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_float (ppl_Octagonal_Shape_long_double_t * pph, ppl_const_Octagonal_Shape_float_t ph)` [**related**]
- 10.47.2.51 `int ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_float_with_complexity (ppl_Octagonal_Shape_long_double_t * pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)` [**related**]
- 10.47.2.52 `int ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_int16_t (ppl_Octagonal_Shape_long_double_t * pph, ppl_const_Octagonal_Shape_int16_t_t ph)` [**related**]
- 10.47.2.53 `int ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_int16_t_with_complexity (ppl_Octagonal_Shape_long_double_t * pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)` [**related**]
- 10.47.2.54 `int ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_int32_t (ppl_Octagonal_Shape_long_double_t * pph, ppl_const_Octagonal_Shape_int32_t_t ph)` [**related**]
- 10.47.2.55 `int ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_int32_t_with_complexity (ppl_Octagonal_Shape_long_double_t * pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)` [**related**]
- 10.47.2.56 `int ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_int64_t (ppl_Octagonal_Shape_long_double_t * pph, ppl_const_Octagonal_Shape_int64_t_t ph)` [**related**]

- 10.47.2.57** `int ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_int64_t_with_complexity (ppl_Octagonal_Shape_long_double_t * pph, ppl_const_Octagonal_Shape_int64_t ph, int complexity)` [**related**]
- 10.47.2.58** `int ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_int8_t (ppl_Octagonal_Shape_long_double_t * pph, ppl_const_Octagonal_Shape_int8_t ph)` [**related**]
- 10.47.2.59** `int ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_int8_t_with_complexity (ppl_Octagonal_Shape_long_double_t * pph, ppl_const_Octagonal_Shape_int8_t ph, int complexity)` [**related**]
- 10.47.2.60** `int ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_long_double (ppl_Octagonal_Shape_long_double_t * pph, ppl_const_Octagonal_Shape_long_double_t ph)` [**related**]
- 10.47.2.61** `int ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_long_double_with_complexity (ppl_Octagonal_Shape_long_double_t * pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)` [**related**]
- 10.47.2.62** `int ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_mpq_class (ppl_Octagonal_Shape_long_double_t * pph, ppl_const_Octagonal_Shape_mpq_class_t ph)` [**related**]
- 10.47.2.63** `int ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_mpq_class_with_complexity (ppl_Octagonal_Shape_long_double_t * pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)` [**related**]
- 10.47.2.64** `int ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_mpz_class (ppl_Octagonal_Shape_long_double_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph)` [**related**]

- 10.47.2.65 `int ppl_new_Octagonal_Shape_long_double_from_Octagonal_Shape_mpz_class_with_complexity (ppl_Octagonal_Shape_long_double_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)` `[related]`
- 10.47.2.66 `int ppl_new_Octagonal_Shape_long_double_from_Rational_Box (ppl_Octagonal_Shape_long_double_t * pph, ppl_const_Rational_Box_t ph)` `[related]`
- 10.47.2.67 `int ppl_new_Octagonal_Shape_long_double_from_Rational_Box_with_complexity (ppl_Octagonal_Shape_long_double_t * pph, ppl_const_Rational_Box_t ph, int complexity)` `[related]`
- 10.47.2.68 `int ppl_new_Octagonal_Shape_long_double_from_space_dimension (ppl_Octagonal_Shape_long_double_t * pph, ppl_dimension_type d, int empty)` `[related]`
- 10.47.2.69 `int ppl_new_Octagonal_Shape_long_double_from_Uint16_Box (ppl_Octagonal_Shape_long_double_t * pph, ppl_const_Uint16_Box_t ph)` `[related]`
- 10.47.2.70 `int ppl_new_Octagonal_Shape_long_double_from_Uint16_Box_with_complexity (ppl_Octagonal_Shape_long_double_t * pph, ppl_const_Uint16_Box_t ph, int complexity)` `[related]`
- 10.47.2.71 `int ppl_new_Octagonal_Shape_long_double_from_Uint32_Box (ppl_Octagonal_Shape_long_double_t * pph, ppl_const_Uint32_Box_t ph)` `[related]`
- 10.47.2.72 `int ppl_new_Octagonal_Shape_long_double_from_Uint32_Box_with_complexity (ppl_Octagonal_Shape_long_double_t * pph, ppl_const_Uint32_Box_t ph, int complexity)` `[related]`

- 10.47.2.73** `int ppl_new_Octagonal_Shape_long_double_from_Uint64_Box`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_Uint64_Box_t ph`)
[related]
- 10.47.2.74** `int ppl_new_Octagonal_Shape_long_double_from_Uint64_Box_with_complexity`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_Uint64_Box_t ph`, `int complexity`) [related]
- 10.47.2.75** `int ppl_new_Octagonal_Shape_long_double_from_Uint8_Box`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_Uint8_Box_t ph`)
[related]
- 10.47.2.76** `int ppl_new_Octagonal_Shape_long_double_from_Uint8_Box_with_complexity`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_Uint8_Box_t ph`, `int complexity`) [related]
- 10.47.2.77** `int ppl_new_Octagonal_Shape_long_double_from_Z_Box` (`ppl_ -`
`Octagonal_Shape_long_double_t * pph`, `ppl_const_Z_Box_t ph`)
[related]
- 10.47.2.78** `int ppl_new_Octagonal_Shape_long_double_from_Z_Box_with_complexity`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_const_Z_Box_t ph`, `int complexity`)
[related]
- 10.47.2.79** `int ppl_new_Octagonal_Shape_long_double_recycle_Congruence_System`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_Congruence_System_t cs`)
[related]
- 10.47.2.80** `int ppl_new_Octagonal_Shape_long_double_recycle_Constraint_System`
(`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_Constraint_System_t cs`)
[related]

- 10.47.2.81 `int ppl_new_Octagonal_Shape_long_double_recycle_Generator_System`
 (`ppl_Octagonal_Shape_long_double_t * pph`, `ppl_Generator_System_t cs`)
 [related]
- 10.47.2.82 `int ppl_Octagonal_Shape_long_double_add_congruence` (`ppl_-`
`Octagonal_Shape_long_double_t ph`, `ppl_const_Congruence_t c`)
 [related]
- 10.47.2.83 `int ppl_Octagonal_Shape_long_double_add_congruences` (`ppl_-`
`Octagonal_Shape_long_double_t ph`, `ppl_const_Congruence_System_t cs`)
 [related]
- 10.47.2.84 `int ppl_Octagonal_Shape_long_double_add_constraint` (`ppl_-`
`Octagonal_Shape_long_double_t ph`, `ppl_const_Constraint_t c`)
 [related]
- 10.47.2.85 `int ppl_Octagonal_Shape_long_double_add_constraints` (`ppl_-`
`Octagonal_Shape_long_double_t ph`, `ppl_const_Constraint_System_t cs`)
 [related]
- 10.47.2.86 `int ppl_Octagonal_Shape_long_double_add_recycled_congruences`
 (`ppl_Octagonal_Shape_long_double_t ph`, `ppl_Congruence_System_t cs`)
 [related]
- 10.47.2.87 `int ppl_Octagonal_Shape_long_double_add_recycled_constraints`
 (`ppl_Octagonal_Shape_long_double_t ph`, `ppl_Constraint_System_t cs`) [related]
- 10.47.2.88 `int ppl_Octagonal_Shape_long_double_add_space_dimensions_and_embed`
 (`ppl_Octagonal_Shape_long_double_t ph`, `ppl_dimension_type d`) [related]

- 10.47.2.89** `int ppl_Octagonal_Shape_long_double_add_space_dimensions_and_project`
(`ppl_Octagonal_Shape_long_double_t ph`, `ppl_dimension_type d`) [`related`]
- 10.47.2.90** `int ppl_Octagonal_Shape_long_double_affine_dimension` (`ppl_const_-`
`Octagonal_Shape_long_double_t ph`, `ppl_dimension_type * m`)
[`related`]
- 10.47.2.91** `int ppl_Octagonal_Shape_long_double_affine_image` (`ppl_Octagonal_Shape_-`
`long_double_t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.47.2.92** `int ppl_Octagonal_Shape_long_double_affine_preimage` (`ppl_Octagonal_Shape_-`
`long_double_t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.47.2.93** `int ppl_Octagonal_Shape_long_double_BHMZ05_widening_assign`
(`ppl_Octagonal_Shape_long_double_t x`, `ppl_const_Octagonal_Shape_long_double_t`
`y`) [`related`]
- 10.47.2.94** `int ppl_Octagonal_Shape_long_double_BHMZ05_widening_assign_with_tokens`
(`ppl_Octagonal_Shape_long_double_t x`, `ppl_const_Octagonal_Shape_long_double_t`
`y`, `unsigned * tp`) [`related`]
- 10.47.2.95** `int ppl_Octagonal_Shape_long_double_bounded_affine_image` (`ppl_Octagonal_-`
`Shape_long_double_t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t lb`,
`ppl_const_Linear_Expression_t ub`, `ppl_const_Coefficient_t d`) [`related`]
- 10.47.2.96** `int ppl_Octagonal_Shape_long_double_bounded_affine_preimage`
(`ppl_Octagonal_Shape_long_double_t ph`, `ppl_dimension_type var`,
`ppl_const_Linear_Expression_t lb`, `ppl_const_Linear_Expression_t ub`,
`ppl_const_Coefficient_t d`) [`related`]

- 10.47.2.97 `int ppl_Octagonal_Shape_long_double_bounds_from_above (ppl_const-Octagonal_Shape_long_double_t ph, ppl_const_Linear_Expression_t le)`
[related]
- 10.47.2.98 `int ppl_Octagonal_Shape_long_double_bounds_from_below (ppl_const-Octagonal_Shape_long_double_t ph, ppl_const_Linear_Expression_t le)`
[related]
- 10.47.2.99 `int ppl_Octagonal_Shape_long_double_CC76_extrapolation_assign (ppl_Octagonal_Shape_long_double_t x, ppl_const_Octagonal_Shape_long_double_t y)` [related]
- 10.47.2.100 `int ppl_Octagonal_Shape_long_double_CC76_extrapolation_assign_with_tokens (ppl_Octagonal_Shape_long_double_t x, ppl_const_Octagonal_Shape_long_double_t y, unsigned *tp)` [related]
- 10.47.2.101 `int ppl_Octagonal_Shape_long_double_CC76_narrowing_assign (ppl_Octagonal_Shape_long_double_t x, ppl_const_Octagonal_Shape_long_double_t y)` [related]
- 10.47.2.102 `int ppl_Octagonal_Shape_long_double_concatenate_assign (ppl_Octagonal_Shape_long_double_t x, ppl_const_Octagonal_Shape_long_double_t y)`
[related]
- 10.47.2.103 `int ppl_Octagonal_Shape_long_double_constrains (ppl_Octagonal_Shape_long_double_t ph, ppl_dimension_type var)` [related]
- 10.47.2.104 `int ppl_Octagonal_Shape_long_double_contains_integer_point (ppl_const_Octagonal_Shape_long_double_t ph)` [related]

- 10.47.2.105 `int ppl_Octagonal_Shape_long_double_contains_Octagonal_Shape_long_double (ppl_const_Octagonal_Shape_long_double_t x, ppl_const_Octagonal_Shape_long_double_t y)` [related]
- 10.47.2.106 `int ppl_Octagonal_Shape_long_double_difference_assign (ppl_Octagonal_Shape_long_double_t x, ppl_const_Octagonal_Shape_long_double_t y)` [related]
- 10.47.2.107 `int ppl_Octagonal_Shape_long_double_drop_some_non_integer_points (ppl_Octagonal_Shape_long_double_t ph, int complexity)` [related]
- 10.47.2.108 `int ppl_Octagonal_Shape_long_double_drop_some_non_integer_points_2 (ppl_Octagonal_Shape_long_double_t ph, ppl_dimension_type ds[], size_t n, int complexity)` [related]
- 10.47.2.109 `int ppl_Octagonal_Shape_long_double_equals_Octagonal_Shape_long_double (ppl_const_Octagonal_Shape_long_double_t x, ppl_const_Octagonal_Shape_long_double_t y)` [related]
- 10.47.2.110 `int ppl_Octagonal_Shape_long_double_expand_space_dimension (ppl_Octagonal_Shape_long_double_t ph, ppl_dimension_type d, ppl_dimension_type m)` [related]
- 10.47.2.111 `int ppl_Octagonal_Shape_long_double_external_memory_in_bytes (ppl_const_Octagonal_Shape_long_double_t ps, size_t * sz)` [related]
- 10.47.2.112 `int ppl_Octagonal_Shape_long_double_fold_space_dimensions (ppl_Octagonal_Shape_long_double_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [related]

- 10.47.2.113 `int ppl_Octagonal_Shape_long_double_frequency (ppl_const_Octagonal_Shape_long_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)`
[related]
- 10.47.2.114 `int ppl_Octagonal_Shape_long_double_generalized_affine_image (ppl_Octagonal_Shape_long_double_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [related]
- 10.47.2.115 `int ppl_Octagonal_Shape_long_double_generalized_affine_image_lhs_rhs (ppl_Octagonal_Shape_long_double_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t rhs)`
[related]
- 10.47.2.116 `int ppl_Octagonal_Shape_long_double_generalized_affine_preimage (ppl_Octagonal_Shape_long_double_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [related]
- 10.47.2.117 `int ppl_Octagonal_Shape_long_double_generalized_affine_preimage_lhs_rhs (ppl_Octagonal_Shape_long_double_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t rhs)`
[related]
- 10.47.2.118 `int ppl_Octagonal_Shape_long_double_get_congruences (ppl_const_Octagonal_Shape_long_double_t ph, ppl_const_Congruence_System_t * pcs)`
[related]
- 10.47.2.119 `int ppl_Octagonal_Shape_long_double_get_constraints (ppl_const_Octagonal_Shape_long_double_t ph, ppl_const_Constraint_System_t * pcs)`
[related]

- 10.47.2.120 `int ppl_Octagonal_Shape_long_double_get_minimized_congruences`
(`ppl_const_Octagonal_Shape_long_double_t ph`, `ppl_const_Congruence_System_t *`
`pcs`) [`related`]
- 10.47.2.121 `int ppl_Octagonal_Shape_long_double_get_minimized_constraints`
(`ppl_const_Octagonal_Shape_long_double_t ph`, `ppl_const_Constraint_System_t *`
`pcs`) [`related`]
- 10.47.2.122 `int ppl_Octagonal_Shape_long_double_intersection_assign` (`ppl_Octagonal_-`
`Shape_long_double_t x`, `ppl_const_Octagonal_Shape_long_double_t y`)
[`related`]
- 10.47.2.123 `int ppl_Octagonal_Shape_long_double_is_bounded` (`ppl_const_Octagonal_Shape_-`
`long_double_t ph`) [`related`]
- 10.47.2.124 `int ppl_Octagonal_Shape_long_double_is_discrete` (`ppl_const_Octagonal_Shape_-`
`long_double_t ph`) [`related`]
- 10.47.2.125 `int ppl_Octagonal_Shape_long_double_is_disjoint_from_Octagonal_-`
`Shape_long_double` (`ppl_const_Octagonal_Shape_long_double_t x`,
`ppl_const_Octagonal_Shape_long_double_t y`) [`related`]
- 10.47.2.126 `int ppl_Octagonal_Shape_long_double_is_empty` (`ppl_const_Octagonal_Shape_long_-`
`double_t ph`) [`related`]
- 10.47.2.127 `int ppl_Octagonal_Shape_long_double_is_topologically_closed`
(`ppl_const_Octagonal_Shape_long_double_t ph`) [`related`]
- 10.47.2.128 `int ppl_Octagonal_Shape_long_double_is_universe` (`ppl_const_Octagonal_Shape_-`
`long_double_t ph`) [`related`]

- 10.47.2.129 `int ppl_Octagonal_Shape_long_double_limited_BHMZ05_extrapolation_assign`
 (`ppl_Octagonal_Shape_long_double_t x`, `ppl_const_Octagonal_Shape_long_double_t y`, `ppl_const_Constraint_System_t cs`) [`related`]
- 10.47.2.130 `int ppl_Octagonal_Shape_long_double_limited_BHMZ05_extrapolation_-`
`assign_with_tokens` (`ppl_Octagonal_Shape_long_double_t x`,
`ppl_const_Octagonal_Shape_long_double_t y`, `ppl_const_Constraint_System_t cs`,
`unsigned * tp`) [`related`]
- 10.47.2.131 `int ppl_Octagonal_Shape_long_double_limited_CC76_extrapolation_assign`
 (`ppl_Octagonal_Shape_long_double_t x`, `ppl_const_Octagonal_Shape_long_double_t y`, `ppl_const_Constraint_System_t cs`) [`related`]
- 10.47.2.132 `int ppl_Octagonal_Shape_long_double_limited_CC76_extrapolation_-`
`assign_with_tokens` (`ppl_Octagonal_Shape_long_double_t x`,
`ppl_const_Octagonal_Shape_long_double_t y`, `ppl_const_Constraint_System_t cs`,
`unsigned * tp`) [`related`]
- 10.47.2.133 `int ppl_Octagonal_Shape_long_double_linear_partition`
 (`ppl_const_Octagonal_Shape_long_double_t x`, `ppl_const_Octagonal_-`
`Shape_long_double_t y`, `ppl_Octagonal_Shape_long_double_t * p_inters`,
`ppl_Pointset_Powerset_NNC_Polyhedron_t * p_rest`) [`related`]
- 10.47.2.134 `int ppl_Octagonal_Shape_long_double_map_space_dimensions`
 (`ppl_Octagonal_Shape_long_double_t ph`, `ppl_dimension_type maps[ ]`, `size_t n`)
 [`related`]
- 10.47.2.135 `int ppl_Octagonal_Shape_long_double_maximize` (`ppl_const_Octagonal_Shape_-`
`long_double_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`,
`ppl_Coefficient_t ext_d`, `int * poptimum`) [`related`]

- 10.47.2.136 `int ppl_Octagonal_Shape_long_double_maximize_with_point`
(`ppl_const_Octagonal_Shape_long_double_t ph`, `ppl_const_Linear_Expression_t le`,
`ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int * poptimum`, `ppl_Generator_t point`) [`related`]
- 10.47.2.137 `int ppl_Octagonal_Shape_long_double_minimize` (`ppl_const_Octagonal_Shape_long_double_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int * poptimum`) [`related`]
- 10.47.2.138 `int ppl_Octagonal_Shape_long_double_minimize_with_point`
(`ppl_const_Octagonal_Shape_long_double_t ph`, `ppl_const_Linear_Expression_t le`,
`ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int * poptimum`, `ppl_Generator_t point`) [`related`]
- 10.47.2.139 `int ppl_Octagonal_Shape_long_double_OK` (`ppl_const_Octagonal_Shape_long_double_t ph`) [`related`]
- 10.47.2.140 `int ppl_Octagonal_Shape_long_double_refine_with_congruence`
(`ppl_Octagonal_Shape_long_double_t ph`, `ppl_const_Congruence_t c`) [`related`]
- 10.47.2.141 `int ppl_Octagonal_Shape_long_double_refine_with_congruences`
(`ppl_Octagonal_Shape_long_double_t ph`, `ppl_const_Congruence_System_t cs`) [`related`]
- 10.47.2.142 `int ppl_Octagonal_Shape_long_double_refine_with_constraint`
(`ppl_Octagonal_Shape_long_double_t ph`, `ppl_const_Constraint_t c`) [`related`]
- 10.47.2.143 `int ppl_Octagonal_Shape_long_double_refine_with_constraints`
(`ppl_Octagonal_Shape_long_double_t ph`, `ppl_const_Constraint_System_t cs`) [`related`]

- 10.47.2.144 `int ppl_Octagonal_Shape_long_double_relation_with_Congruence`
 (`ppl_const_Octagonal_Shape_long_double_t ph`, `ppl_const_Congruence_t c`)
 [`related`]
- 10.47.2.145 `int ppl_Octagonal_Shape_long_double_relation_with_Constraint`
 (`ppl_const_Octagonal_Shape_long_double_t ph`, `ppl_const_Constraint_t c`)
 [`related`]
- 10.47.2.146 `int ppl_Octagonal_Shape_long_double_relation_with_Generator`
 (`ppl_const_Octagonal_Shape_long_double_t ph`, `ppl_const_Generator_t c`)
 [`related`]
- 10.47.2.147 `int ppl_Octagonal_Shape_long_double_remove_higher_space_dimensions`
 (`ppl_Octagonal_Shape_long_double_t ph`, `ppl_dimension_type d`) [`related`]
- 10.47.2.148 `int ppl_Octagonal_Shape_long_double_remove_space_dimensions`
 (`ppl_Octagonal_Shape_long_double_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`)
 [`related`]
- 10.47.2.149 `int ppl_Octagonal_Shape_long_double_simplify_using_context_assign`
 (`ppl_Octagonal_Shape_long_double_t x`, `ppl_const_Octagonal_Shape_long_double_t y`) [`related`]
- 10.47.2.150 `int ppl_Octagonal_Shape_long_double_space_dimension` (`ppl_const_Octagonal_Shape_long_double_t ph`, `ppl_dimension_type * m`)
 [`related`]
- 10.47.2.151 `int ppl_Octagonal_Shape_long_double_strictly_contains_Octagonal_Shape_long_double` (`ppl_const_Octagonal_Shape_long_double_t x`, `ppl_const_Octagonal_Shape_long_double_t y`) [`related`]

- 10.47.2.152 `int ppl_Octagonal_Shape_long_double_time_elapse_assign (ppl_Octagonal_Shape_long_double_t x, ppl_const_Octagonal_Shape_long_double_t y)` `[related]`
- 10.47.2.153 `int ppl_Octagonal_Shape_long_double_topological_closure_assign (ppl_Octagonal_Shape_long_double_t ph)` `[related]`
- 10.47.2.154 `int ppl_Octagonal_Shape_long_double_total_memory_in_bytes (ppl_const_Octagonal_Shape_long_double_t ps, size_t * sz)` `[related]`
- 10.47.2.155 `int ppl_Octagonal_Shape_long_double_unconstrain_space_dimension (ppl_Octagonal_Shape_long_double_t ph, ppl_dimension_type var)` `[related]`
- 10.47.2.156 `int ppl_Octagonal_Shape_long_double_unconstrain_space_dimensions (ppl_Octagonal_Shape_long_double_t ph, ppl_dimension_type ds[], size_t n)` `[related]`
- 10.47.2.157 `int ppl_Octagonal_Shape_long_double_upper_bound_assign (ppl_Octagonal_Shape_long_double_t x, ppl_const_Octagonal_Shape_long_double_t y)` `[related]`
- 10.47.2.158 `int ppl_Octagonal_Shape_long_double_upper_bound_assign_if_exact (ppl_Octagonal_Shape_long_double_t x, ppl_const_Octagonal_Shape_long_double_t y)` `[related]`
- 10.47.2.159 `int ppl_Octagonal_Shape_long_double_widening_assign (ppl_Octagonal_Shape_long_double_t x, ppl_const_Octagonal_Shape_long_double_t y)` `[related]`

- 10.47.2.160 `int ppl_Octagonal_Shape_long_double_widening_assign_with_tokens`
 (`ppl_Octagonal_Shape_long_double_t x`, `ppl_const_Octagonal_Shape_long_double_t y`, `unsigned * tp`) [`related`]
- 10.47.2.161 `int ppl_Octagonal_Shape_long_double_wrap_assign` (`ppl_Octagonal_Shape_long_double_t ph`, `ppl_dimension_type ds[]`, `size_t n`, `enum ppl_enum_Bounded_Integer_Type_Width w`, `enum ppl_enum_Bounded_Integer_Type_Representation r`, `enum ppl_enum_Bounded_Integer_Type_Overflow o`, `const ppl_const_Constraint_System_t * pcs`, `unsigned complexity_threshold`, `int wrap_individually`) [`related`]
- 10.47.2.162 `int ppl_one_affine_ranking_function_MS_Octagonal_Shape_long_double`
 (`ppl_const_Octagonal_Shape_long_double_t pset`, `ppl_Generator_t point`) [`related`]
- 10.47.2.163 `int ppl_one_affine_ranking_function_MS_Octagonal_Shape_long_double_2`
 (`ppl_const_Octagonal_Shape_long_double_t pset_before`, `ppl_const_Octagonal_Shape_long_double_t pset_after`, `ppl_Generator_t point`) [`related`]
- 10.47.2.164 `int ppl_one_affine_ranking_function_PR_Octagonal_Shape_long_double`
 (`ppl_const_Octagonal_Shape_long_double_t pset`, `ppl_Generator_t point`) [`related`]
- 10.47.2.165 `int ppl_one_affine_ranking_function_PR_Octagonal_Shape_long_double_2`
 (`ppl_const_Octagonal_Shape_long_double_t pset_before`, `ppl_const_Octagonal_Shape_long_double_t pset_after`, `ppl_Generator_t point`) [`related`]
- 10.47.2.166 `int ppl_termination_test_MS_Octagonal_Shape_long_double`
 (`ppl_const_Octagonal_Shape_long_double_t pset`) [`related`]

10.47.2.167 int ppl_termination_test_MS_Octagonal_Shape_long_double_2
 (ppl_const_Octagonal_Shape_long_double_t *pset_before*,
 ppl_const_Octagonal_Shape_long_double_t *pset_after*) [**related**]

10.47.2.168 int ppl_termination_test_PR_Octagonal_Shape_long_double
 (ppl_const_Octagonal_Shape_long_double_t *pset*) [**related**]

10.47.2.169 int ppl_termination_test_PR_Octagonal_Shape_long_double_2
 (ppl_const_Octagonal_Shape_long_double_t *pset_before*,
 ppl_const_Octagonal_Shape_long_double_t *pset_after*) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.48 ppl_Octagonal_Shape_mpq_class_tag Interface Reference

Types and functions for [ppl_Octagonal_Shape_mpq_class_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- int [ppl_delete_Octagonal_Shape_mpq_class](#) (ppl_const_Octagonal_Shape_mpq_class_t ph)
- int [ppl_new_Octagonal_Shape_mpq_class_from_space_dimension](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_dimension_type d, int empty)
- int [ppl_new_Octagonal_Shape_mpq_class_from_Int8_Box](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Int8_Box_t ph)
- int [ppl_new_Octagonal_Shape_mpq_class_from_Int16_Box](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Int16_Box_t ph)
- int [ppl_new_Octagonal_Shape_mpq_class_from_Int32_Box](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Int32_Box_t ph)
- int [ppl_new_Octagonal_Shape_mpq_class_from_Int64_Box](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Int64_Box_t ph)
- int [ppl_new_Octagonal_Shape_mpq_class_from_UInt8_Box](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_UInt8_Box_t ph)
- int [ppl_new_Octagonal_Shape_mpq_class_from_UInt16_Box](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_UInt16_Box_t ph)
- int [ppl_new_Octagonal_Shape_mpq_class_from_UInt32_Box](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_UInt32_Box_t ph)
- int [ppl_new_Octagonal_Shape_mpq_class_from_UInt64_Box](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_UInt64_Box_t ph)

- [int ppl_new_Octagonal_Shape_mpq_class_from_Z_Box](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Z_Box_t ph)
- [int ppl_new_Octagonal_Shape_mpq_class_from_Rational_Box](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Rational_Box_t ph)
- [int ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_int8_t](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_BD_Shape_int8_t_t ph)
- [int ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_int16_t](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_BD_Shape_int16_t_t ph)
- [int ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_int32_t](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_BD_Shape_int32_t_t ph)
- [int ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_int64_t](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_BD_Shape_int64_t_t ph)
- [int ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_mpz_class](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_BD_Shape_mpz_class_t ph)
- [int ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_mpq_class](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_BD_Shape_mpq_class_t ph)
- [int ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_int8_t](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph)
- [int ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_int16_t](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph)
- [int ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_int32_t](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph)
- [int ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_int64_t](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph)
- [int ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_mpz_class](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph)
- [int ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_mpq_class](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph)
- [int ppl_new_Octagonal_Shape_mpq_class_from_C_Polyhedron](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Polyhedron_t ph)
- [int ppl_new_Octagonal_Shape_mpq_class_from_NNC_Polyhedron](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Polyhedron_t ph)
- [int ppl_new_Octagonal_Shape_mpq_class_from_Grid](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Grid_t ph)
- [int ppl_new_Octagonal_Shape_mpq_class_from_Float_Box](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Float_Box_t ph)
- [int ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_float](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_BD_Shape_float_t ph)
- [int ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_float](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_float_t ph)
- [int ppl_new_Octagonal_Shape_mpq_class_from_Double_Box](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Double_Box_t ph)
- [int ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_double](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_BD_Shape_double_t ph)
- [int ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_double](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_double_t ph)
- [int ppl_new_Octagonal_Shape_mpq_class_from_Long_Double_Box](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Long_Double_Box_t ph)
- [int ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_long_double](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_BD_Shape_long_double_t ph)
- [int ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_long_double](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_long_double_t ph)

- int [ppl_new_Octagonal_Shape_mpq_class_from_Int8_Box_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Int8_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpq_class_from_Int16_Box_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Int16_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpq_class_from_Int32_Box_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Int32_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpq_class_from_Int64_Box_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Int64_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpq_class_from_UInt8_Box_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_UInt8_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpq_class_from_UInt16_Box_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_UInt16_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpq_class_from_UInt32_Box_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_UInt32_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpq_class_from_UInt64_Box_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_UInt64_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpq_class_from_Z_Box_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Z_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpq_class_from_Rational_Box_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Rational_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_int8_t_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_int16_t_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_int32_t_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_int64_t_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_mpz_class_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_BD_Shape_mpz_class_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_mpq_class_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_BD_Shape_mpq_class_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_int8_t_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_int16_t_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_int32_t_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_int64_t_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_mpz_class_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_mpz_class_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_mpq_class_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_mpq_class_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpq_class_from_C_Polyhedron_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Polyhedron_t ph, int complexity)

- [int ppl_new_Octagonal_Shape_mpq_class_from_NNC_Polyhedron_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_mpq_class_from_Grid_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Grid_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_mpq_class_from_Float_Box_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Float_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_float_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_BD_Shape_float_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_float_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_mpq_class_from_Double_Box_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Double_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_double_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_BD_Shape_double_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_double_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_mpq_class_from_Long_Double_Box_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_long_double_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_long_double_with_complexity](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_mpq_class_from_Constraint_System](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Constraint_System_t cs)
- [int ppl_new_Octagonal_Shape_mpq_class_from_Congruence_System](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Congruence_System_t cs)
- [int ppl_new_Octagonal_Shape_mpq_class_from_Generator_System](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_const_Generator_System_t cs)
- [int ppl_Octagonal_Shape_mpq_class_space_dimension](#) (ppl_const_Octagonal_Shape_mpq_class_t ph, ppl_dimension_type *m)
- [int ppl_Octagonal_Shape_mpq_class_affine_dimension](#) (ppl_const_Octagonal_Shape_mpq_class_t ph, ppl_dimension_type *m)
- [int ppl_Octagonal_Shape_mpq_class_relation_with_Constraint](#) (ppl_const_Octagonal_Shape_mpq_class_t ph, ppl_const_Constraint_t c)
- [int ppl_Octagonal_Shape_mpq_class_relation_with_Generator](#) (ppl_const_Octagonal_Shape_mpq_class_t ph, ppl_const_Generator_t c)
- [int ppl_Octagonal_Shape_mpq_class_relation_with_Congruence](#) (ppl_const_Octagonal_Shape_mpq_class_t ph, ppl_const_Congruence_t c)
- [int ppl_Octagonal_Shape_mpq_class_get_constraints](#) (ppl_const_Octagonal_Shape_mpq_class_t ph, ppl_const_Constraint_System_t *pcs)
- [int ppl_Octagonal_Shape_mpq_class_get_congruences](#) (ppl_const_Octagonal_Shape_mpq_class_t ph, ppl_const_Congruence_System_t *pcs)
- [int ppl_Octagonal_Shape_mpq_class_get_minimized_constraints](#) (ppl_const_Octagonal_Shape_mpq_class_t ph, ppl_const_Constraint_System_t *pcs)
- [int ppl_Octagonal_Shape_mpq_class_get_minimized_congruences](#) (ppl_const_Octagonal_Shape_mpq_class_t ph, ppl_const_Congruence_System_t *pcs)
- [int ppl_Octagonal_Shape_mpq_class_is_empty](#) (ppl_const_Octagonal_Shape_mpq_class_t ph)
- [int ppl_Octagonal_Shape_mpq_class_is_universe](#) (ppl_const_Octagonal_Shape_mpq_class_t ph)
- [int ppl_Octagonal_Shape_mpq_class_is_bounded](#) (ppl_const_Octagonal_Shape_mpq_class_t ph)

- int [ppl_Octagonal_Shape_mpq_class_contains_integer_point](#) (ppl_const_Octagonal_Shape_mpq_class_t ph)
- int [ppl_Octagonal_Shape_mpq_class_is_topologically_closed](#) (ppl_const_Octagonal_Shape_mpq_class_t ph)
- int [ppl_Octagonal_Shape_mpq_class_is_discrete](#) (ppl_const_Octagonal_Shape_mpq_class_t ph)
- int [ppl_Octagonal_Shape_mpq_class_topological_closure_assign](#) (ppl_Octagonal_Shape_mpq_class_t ph)
- int [ppl_Octagonal_Shape_mpq_class_bounds_from_above](#) (ppl_const_Octagonal_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Octagonal_Shape_mpq_class_bounds_from_below](#) (ppl_const_Octagonal_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Octagonal_Shape_mpq_class_maximize](#) (ppl_const_Octagonal_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Octagonal_Shape_mpq_class_minimize](#) (ppl_const_Octagonal_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Octagonal_Shape_mpq_class_maximize_with_point](#) (ppl_const_Octagonal_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Octagonal_Shape_mpq_class_minimize_with_point](#) (ppl_const_Octagonal_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Octagonal_Shape_mpq_class_frequency](#) (ppl_const_Octagonal_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)
- int [ppl_Octagonal_Shape_mpq_class_contains_Octagonal_Shape_mpq_class](#) (ppl_const_Octagonal_Shape_mpq_class_t x, ppl_const_Octagonal_Shape_mpq_class_t y)
- int [ppl_Octagonal_Shape_mpq_class_strictly_contains_Octagonal_Shape_mpq_class](#) (ppl_const_Octagonal_Shape_mpq_class_t x, ppl_const_Octagonal_Shape_mpq_class_t y)
- int [ppl_Octagonal_Shape_mpq_class_is_disjoint_from_Octagonal_Shape_mpq_class](#) (ppl_const_Octagonal_Shape_mpq_class_t x, ppl_const_Octagonal_Shape_mpq_class_t y)
- int [ppl_Octagonal_Shape_mpq_class_equals_Octagonal_Shape_mpq_class](#) (ppl_const_Octagonal_Shape_mpq_class_t x, ppl_const_Octagonal_Shape_mpq_class_t y)
- int [ppl_Octagonal_Shape_mpq_class_OK](#) (ppl_const_Octagonal_Shape_mpq_class_t ph)
- int [ppl_Octagonal_Shape_mpq_class_add_constraint](#) (ppl_Octagonal_Shape_mpq_class_t ph, ppl_const_Constraint_t c)
- int [ppl_Octagonal_Shape_mpq_class_add_congruence](#) (ppl_Octagonal_Shape_mpq_class_t ph, ppl_const_Congruence_t c)
- int [ppl_Octagonal_Shape_mpq_class_add_constraints](#) (ppl_Octagonal_Shape_mpq_class_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Octagonal_Shape_mpq_class_add_congruences](#) (ppl_Octagonal_Shape_mpq_class_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Octagonal_Shape_mpq_class_refine_with_constraint](#) (ppl_Octagonal_Shape_mpq_class_t ph, ppl_const_Constraint_t c)
- int [ppl_Octagonal_Shape_mpq_class_refine_with_congruence](#) (ppl_Octagonal_Shape_mpq_class_t ph, ppl_const_Congruence_t c)
- int [ppl_Octagonal_Shape_mpq_class_refine_with_constraints](#) (ppl_Octagonal_Shape_mpq_class_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Octagonal_Shape_mpq_class_refine_with_congruences](#) (ppl_Octagonal_Shape_mpq_class_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Octagonal_Shape_mpq_class_intersection_assign](#) (ppl_Octagonal_Shape_mpq_class_t x, ppl_const_Octagonal_Shape_mpq_class_t y)

- int [ppl_Octagonal_Shape_mpq_class_upper_bound_assign](#) (ppl_Octagonal_Shape_mpq_class_t x, ppl_const_Octagonal_Shape_mpq_class_t y)
- int [ppl_Octagonal_Shape_mpq_class_difference_assign](#) (ppl_Octagonal_Shape_mpq_class_t x, ppl_const_Octagonal_Shape_mpq_class_t y)
- int [ppl_Octagonal_Shape_mpq_class_concatenate_assign](#) (ppl_Octagonal_Shape_mpq_class_t x, ppl_const_Octagonal_Shape_mpq_class_t y)
- int [ppl_Octagonal_Shape_mpq_class_time_elapse_assign](#) (ppl_Octagonal_Shape_mpq_class_t x, ppl_const_Octagonal_Shape_mpq_class_t y)
- int [ppl_Octagonal_Shape_mpq_class_upper_bound_assign_if_exact](#) (ppl_Octagonal_Shape_mpq_class_t x, ppl_const_Octagonal_Shape_mpq_class_t y)
- int [ppl_Octagonal_Shape_mpq_class_simplify_using_context_assign](#) (ppl_Octagonal_Shape_mpq_class_t x, ppl_const_Octagonal_Shape_mpq_class_t y)
- int [ppl_Octagonal_Shape_mpq_class_constrains](#) (ppl_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) var)
- int [ppl_Octagonal_Shape_mpq_class_unconstrain_space_dimension](#) (ppl_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) var)
- int [ppl_Octagonal_Shape_mpq_class_unconstrain_space_dimensions](#) (ppl_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Octagonal_Shape_mpq_class_affine_image](#) (ppl_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_mpq_class_affine_preimage](#) (ppl_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_mpq_class_bounded_affine_image](#) (ppl_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_mpq_class_bounded_affine_preimage](#) (ppl_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_mpq_class_generalized_affine_image](#) (ppl_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_mpq_class_generalized_affine_preimage](#) (ppl_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_mpq_class_generalized_affine_image_lhs_rhs](#) (ppl_Octagonal_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Octagonal_Shape_mpq_class_generalized_affine_preimage_lhs_rhs](#) (ppl_Octagonal_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Octagonal_Shape_mpq_class_add_space_dimensions_and_embed](#) (ppl_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) d)
- int [ppl_Octagonal_Shape_mpq_class_add_space_dimensions_and_project](#) (ppl_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) d)
- int [ppl_Octagonal_Shape_mpq_class_remove_space_dimensions](#) (ppl_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Octagonal_Shape_mpq_class_remove_higher_space_dimensions](#) (ppl_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) d)
- int [ppl_Octagonal_Shape_mpq_class_expand_space_dimension](#) (ppl_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Octagonal_Shape_mpq_class_fold_space_dimensions](#) (ppl_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)

- int [ppl_Octagonal_Shape_mpq_class_map_space_dimensions](#) (ppl_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_Octagonal_Shape_mpq_class_drop_some_non_integer_points](#) (ppl_Octagonal_Shape_mpq_class_t ph, int complexity)
- int [ppl_Octagonal_Shape_mpq_class_drop_some_non_integer_points_2](#) (ppl_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_Octagonal_Shape_mpq_class_external_memory_in_bytes](#) (ppl_const_Octagonal_Shape_mpq_class_t ps, size_t *sz)
- int [ppl_Octagonal_Shape_mpq_class_total_memory_in_bytes](#) (ppl_const_Octagonal_Shape_mpq_class_t ps, size_t *sz)
- int [ppl_Octagonal_Shape_mpq_class_BHMZ05_widening_assign_with_tokens](#) (ppl_Octagonal_Shape_mpq_class_t x, ppl_const_Octagonal_Shape_mpq_class_t y, unsigned *tp)
- int [ppl_Octagonal_Shape_mpq_class_BHMZ05_widening_assign](#) (ppl_Octagonal_Shape_mpq_class_t x, ppl_const_Octagonal_Shape_mpq_class_t y)
- int [ppl_Octagonal_Shape_mpq_class_widening_assign_with_tokens](#) (ppl_Octagonal_Shape_mpq_class_t x, ppl_const_Octagonal_Shape_mpq_class_t y, unsigned *tp)
- int [ppl_Octagonal_Shape_mpq_class_widening_assign](#) (ppl_Octagonal_Shape_mpq_class_t x, ppl_const_Octagonal_Shape_mpq_class_t y)
- int [ppl_Octagonal_Shape_mpq_class_limited_BHMZ05_extrapolation_assign_with_tokens](#) (ppl_Octagonal_Shape_mpq_class_t x, ppl_const_Octagonal_Shape_mpq_class_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- int [ppl_Octagonal_Shape_mpq_class_limited_CC76_extrapolation_assign_with_tokens](#) (ppl_Octagonal_Shape_mpq_class_t x, ppl_const_Octagonal_Shape_mpq_class_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- int [ppl_Octagonal_Shape_mpq_class_limited_BHMZ05_extrapolation_assign](#) (ppl_Octagonal_Shape_mpq_class_t x, ppl_const_Octagonal_Shape_mpq_class_t y, ppl_const_Constraint_System_t cs)
- int [ppl_Octagonal_Shape_mpq_class_limited_CC76_extrapolation_assign](#) (ppl_Octagonal_Shape_mpq_class_t x, ppl_const_Octagonal_Shape_mpq_class_t y, ppl_const_Constraint_System_t cs)
- int [ppl_Octagonal_Shape_mpq_class_CC76_extrapolation_assign_with_tokens](#) (ppl_Octagonal_Shape_mpq_class_t x, ppl_const_Octagonal_Shape_mpq_class_t y, unsigned *tp)
- int [ppl_Octagonal_Shape_mpq_class_CC76_extrapolation_assign](#) (ppl_Octagonal_Shape_mpq_class_t x, ppl_const_Octagonal_Shape_mpq_class_t y)
- int [ppl_Octagonal_Shape_mpq_class_CC76_narrowing_assign](#) (ppl_Octagonal_Shape_mpq_class_t x, ppl_const_Octagonal_Shape_mpq_class_t y)
- int [ppl_Octagonal_Shape_mpq_class_linear_partition](#) (ppl_const_Octagonal_Shape_mpq_class_t x, ppl_const_Octagonal_Shape_mpq_class_t y, ppl_Octagonal_Shape_mpq_class_t *p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest)
- int [ppl_Octagonal_Shape_mpq_class_wrap_assign](#) (ppl_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) ds[], size_t n, enum [ppl_enum_Bounded_Integer_Type_Width](#) w, enum [ppl_enum_Bounded_Integer_Type_Representation](#) r, enum [ppl_enum_Bounded_Integer_Type_Overflow](#) o, const ppl_const_Constraint_System_t *pcs, unsigned complexity_threshold, int wrap_individually)
- int [ppl_new_Octagonal_Shape_mpq_class_recycle_Constraint_System](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_Constraint_System_t cs)
- int [ppl_new_Octagonal_Shape_mpq_class_recycle_Congruence_System](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_Congruence_System_t cs)
- int [ppl_new_Octagonal_Shape_mpq_class_recycle_Generator_System](#) (ppl_Octagonal_Shape_mpq_class_t *pph, ppl_Generator_System_t cs)
- int [ppl_assign_Octagonal_Shape_mpq_class_from_Octagonal_Shape_mpq_class](#) (ppl_Octagonal_Shape_mpq_class_t dst, ppl_const_Octagonal_Shape_mpq_class_t src)

- `int ppl_Octagonal_Shape_mpq_class_add_recycled_constraints` (`ppl_Octagonal_Shape_mpq_class_t ph`, `ppl_Constraint_System_t cs`)
- `int ppl_Octagonal_Shape_mpq_class_add_recycled_congruences` (`ppl_Octagonal_Shape_mpq_class_t ph`, `ppl_Congruence_System_t cs`)
- `int ppl_termination_test_MS_Octagonal_Shape_mpq_class` (`ppl_const_Octagonal_Shape_mpq_class_t pset`)
- `int ppl_termination_test_PR_Octagonal_Shape_mpq_class` (`ppl_const_Octagonal_Shape_mpq_class_t pset`)
- `int ppl_one_affine_ranking_function_MS_Octagonal_Shape_mpq_class` (`ppl_const_Octagonal_Shape_mpq_class_t pset`, `ppl_Generator_t point`)
- `int ppl_one_affine_ranking_function_PR_Octagonal_Shape_mpq_class` (`ppl_const_Octagonal_Shape_mpq_class_t pset`, `ppl_Generator_t point`)
- `int ppl_all_affine_ranking_functions_MS_Octagonal_Shape_mpq_class` (`ppl_const_Octagonal_Shape_mpq_class_t pset`, `ppl_Polyhedron_t ph`)
- `int ppl_all_affine_ranking_functions_PR_Octagonal_Shape_mpq_class` (`ppl_const_Octagonal_Shape_mpq_class_t pset`, `ppl_Polyhedron_t ph`)
- `int ppl_termination_test_MS_Octagonal_Shape_mpq_class_2` (`ppl_const_Octagonal_Shape_mpq_class_t pset_before`, `ppl_const_Octagonal_Shape_mpq_class_t pset_after`)
- `int ppl_termination_test_PR_Octagonal_Shape_mpq_class_2` (`ppl_const_Octagonal_Shape_mpq_class_t pset_before`, `ppl_const_Octagonal_Shape_mpq_class_t pset_after`)
- `int ppl_one_affine_ranking_function_MS_Octagonal_Shape_mpq_class_2` (`ppl_const_Octagonal_Shape_mpq_class_t pset_before`, `ppl_const_Octagonal_Shape_mpq_class_t pset_after`, `ppl_Generator_t point`)
- `int ppl_one_affine_ranking_function_PR_Octagonal_Shape_mpq_class_2` (`ppl_const_Octagonal_Shape_mpq_class_t pset_before`, `ppl_const_Octagonal_Shape_mpq_class_t pset_after`, `ppl_Generator_t point`)
- `int ppl_all_affine_ranking_functions_MS_Octagonal_Shape_mpq_class_2` (`ppl_const_Octagonal_Shape_mpq_class_t pset_before`, `ppl_const_Octagonal_Shape_mpq_class_t pset_after`, `ppl_Polyhedron_t ph`)
- `int ppl_all_affine_ranking_functions_PR_Octagonal_Shape_mpq_class_2` (`ppl_const_Octagonal_Shape_mpq_class_t pset_before`, `ppl_const_Octagonal_Shape_mpq_class_t pset_after`, `ppl_Polyhedron_t ph`)

10.48.1 Detailed Description

Types and functions for `ppl_Octagonal_Shape_mpq_class_tag`.

10.48.2 Friends And Related Function Documentation

10.48.2.1 `int ppl_all_affine_ranking_functions_MS_Octagonal_Shape_mpq_class`
(`ppl_const_Octagonal_Shape_mpq_class_t pset`, `ppl_Polyhedron_t ph`) [**related**]

10.48.2.2 `int ppl_all_affine_ranking_functions_MS_Octagonal_Shape_mpq_class_2` (`ppl_const_Octagonal_Shape_mpq_class_t pset_before`, `ppl_const_Octagonal_Shape_mpq_class_t pset_after`, `ppl_Polyhedron_t ph`) [**related**]

- 10.48.2.3** `int ppl_all_affine_ranking_functions_PR_Octagonal_Shape_mpq_class`
 (`ppl_const_Octagonal_Shape_mpq_class_t pset`, `ppl_Polyhedron_t ph`) [`related`]
- 10.48.2.4** `int ppl_all_affine_ranking_functions_PR_Octagonal_Shape_mpq_class_2` (`ppl_const_Octagonal_Shape_mpq_class_t pset_before`, `ppl_const_Octagonal_Shape_mpq_class_t pset_after`, `ppl_Polyhedron_t ph`) [`related`]
- 10.48.2.5** `int ppl_assign_Octagonal_Shape_mpq_class_from_Octagonal_Shape_mpq_class`
 (`ppl_Octagonal_Shape_mpq_class_t dst`, `ppl_const_Octagonal_Shape_mpq_class_t src`)
 [`related`]
- 10.48.2.6** `int ppl_delete_Octagonal_Shape_mpq_class` (`ppl_const_Octagonal_Shape_mpq_class_t ph`) [`related`]
- 10.48.2.7** `int ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_double`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_BD_Shape_double_t ph`)
 [`related`]
- 10.48.2.8** `int ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_double_with_complexity`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_BD_Shape_double_t ph`, `int complexity`) [`related`]
- 10.48.2.9** `int ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_float`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_BD_Shape_float_t ph`)
 [`related`]
- 10.48.2.10** `int ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_float_with_complexity`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_BD_Shape_float_t ph`, `int complexity`) [`related`]

- 10.48.2.11 `int ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_int16_t`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_BD_Shape_int16_t_t ph`)
 [related]
- 10.48.2.12 `int ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_int16_t_with_complexity`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_BD_Shape_int16_t_t ph`, `int complexity`) [related]
- 10.48.2.13 `int ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_int32_t`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_BD_Shape_int32_t_t ph`)
 [related]
- 10.48.2.14 `int ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_int32_t_with_complexity`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_BD_Shape_int32_t_t ph`, `int complexity`) [related]
- 10.48.2.15 `int ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_int64_t`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_BD_Shape_int64_t_t ph`)
 [related]
- 10.48.2.16 `int ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_int64_t_with_complexity`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_BD_Shape_int64_t_t ph`, `int complexity`) [related]
- 10.48.2.17 `int ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_int8_t`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_BD_Shape_int8_t_t ph`)
 [related]
- 10.48.2.18 `int ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_int8_t_with_complexity`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_BD_Shape_int8_t_t ph`, `int complexity`) [related]

- 10.48.2.19 `int ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_long_double`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_BD_Shape_long_double_t ph`)
 [related]
- 10.48.2.20 `int ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_long_double_with_complexity` (`ppl_Octagonal_Shape_mpq_class_t * pph`,
`ppl_const_BD_Shape_long_double_t ph`, `int complexity`) [related]
- 10.48.2.21 `int ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_mpq_class`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_BD_Shape_mpq_class_t ph`)
 [related]
- 10.48.2.22 `int ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_mpq_class_with_complexity` (`ppl_Octagonal_Shape_mpq_class_t * pph`,
`ppl_const_BD_Shape_mpq_class_t ph`, `int complexity`) [related]
- 10.48.2.23 `int ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_mpz_class`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_BD_Shape_mpz_class_t ph`)
 [related]
- 10.48.2.24 `int ppl_new_Octagonal_Shape_mpq_class_from_BD_Shape_mpz_class_with_complexity` (`ppl_Octagonal_Shape_mpq_class_t * pph`,
`ppl_const_BD_Shape_mpz_class_t ph`, `int complexity`) [related]
- 10.48.2.25 `int ppl_new_Octagonal_Shape_mpq_class_from_C_Polyhedron`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Polyhedron_t ph`) [related]
- 10.48.2.26 `int ppl_new_Octagonal_Shape_mpq_class_from_C_Polyhedron_with_complexity`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Polyhedron_t ph`, `int complexity`) [related]

- 10.48.2.27 `int ppl_new_Octagonal_Shape_mpq_class_from_Congruence_System`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Congruence_System_t cs`)
 [related]
- 10.48.2.28 `int ppl_new_Octagonal_Shape_mpq_class_from_Constraint_System`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Constraint_System_t cs`)
 [related]
- 10.48.2.29 `int ppl_new_Octagonal_Shape_mpq_class_from_Double_Box`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Double_Box_t ph`)
 [related]
- 10.48.2.30 `int ppl_new_Octagonal_Shape_mpq_class_from_Double_Box_with_complexity`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Double_Box_t ph`, `int complexity`) [related]
- 10.48.2.31 `int ppl_new_Octagonal_Shape_mpq_class_from_Float_Box`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Float_Box_t ph`) [related]
- 10.48.2.32 `int ppl_new_Octagonal_Shape_mpq_class_from_Float_Box_with_complexity`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Float_Box_t ph`, `int complexity`)
 [related]
- 10.48.2.33 `int ppl_new_Octagonal_Shape_mpq_class_from_Generator_System`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Generator_System_t cs`)
 [related]
- 10.48.2.34 `int ppl_new_Octagonal_Shape_mpq_class_from_Grid` (`ppl_Octagonal_Shape_mpq-`
`class_t * pph`, `ppl_const_Grid_t ph`) [related]

- 10.48.2.35 `int ppl_new_Octagonal_Shape_mpq_class_from_Grid_with_complexity`
(`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Grid_t ph`, `int complexity`)
[related]
- 10.48.2.36 `int ppl_new_Octagonal_Shape_mpq_class_from_Int16_Box`
(`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Int16_Box_t ph`) [related]
- 10.48.2.37 `int ppl_new_Octagonal_Shape_mpq_class_from_Int16_Box_with_complexity`
(`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Int16_Box_t ph`, `int complexity`)
[related]
- 10.48.2.38 `int ppl_new_Octagonal_Shape_mpq_class_from_Int32_Box`
(`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Int32_Box_t ph`) [related]
- 10.48.2.39 `int ppl_new_Octagonal_Shape_mpq_class_from_Int32_Box_with_complexity`
(`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Int32_Box_t ph`, `int complexity`)
[related]
- 10.48.2.40 `int ppl_new_Octagonal_Shape_mpq_class_from_Int64_Box`
(`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Int64_Box_t ph`) [related]
- 10.48.2.41 `int ppl_new_Octagonal_Shape_mpq_class_from_Int64_Box_with_complexity`
(`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Int64_Box_t ph`, `int complexity`)
[related]
- 10.48.2.42 `int ppl_new_Octagonal_Shape_mpq_class_from_Int8_Box`
(`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Int8_Box_t ph`) [related]

- 10.48.2.43 `int ppl_new_Octagonal_Shape_mpq_class_from_Int8_Box_with_complexity`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Int8_Box_t ph`, `int complexity`)
 [related]
- 10.48.2.44 `int ppl_new_Octagonal_Shape_mpq_class_from_Long_Double_Box`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Long_Double_Box_t ph`)
 [related]
- 10.48.2.45 `int ppl_new_Octagonal_Shape_mpq_class_from_Long_Double_Box_with_complexity`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Long_Double_Box_t ph`, `int complexity`) [related]
- 10.48.2.46 `int ppl_new_Octagonal_Shape_mpq_class_from_NNC_Polyhedron`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Polyhedron_t ph`) [related]
- 10.48.2.47 `int ppl_new_Octagonal_Shape_mpq_class_from_NNC_Polyhedron_with_complexity`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Polyhedron_t ph`, `int complexity`) [related]
- 10.48.2.48 `int ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_double`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Octagonal_Shape_double_t ph`)
 [related]
- 10.48.2.49 `int ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_double_with_complexity`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Octagonal_Shape_double_t ph`, `int complexity`) [related]
- 10.48.2.50 `int ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_float`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Octagonal_Shape_float_t ph`)
 [related]

- 10.48.2.51** `int ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_float_with_complexity (ppl_Octagonal_Shape_mpq_class_t * pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)` [**related**]
- 10.48.2.52** `int ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_int16_t (ppl_Octagonal_Shape_mpq_class_t * pph, ppl_const_Octagonal_Shape_int16_t_t ph)` [**related**]
- 10.48.2.53** `int ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_int16_t_with_complexity (ppl_Octagonal_Shape_mpq_class_t * pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)` [**related**]
- 10.48.2.54** `int ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_int32_t (ppl_Octagonal_Shape_mpq_class_t * pph, ppl_const_Octagonal_Shape_int32_t_t ph)` [**related**]
- 10.48.2.55** `int ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_int32_t_with_complexity (ppl_Octagonal_Shape_mpq_class_t * pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)` [**related**]
- 10.48.2.56** `int ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_int64_t (ppl_Octagonal_Shape_mpq_class_t * pph, ppl_const_Octagonal_Shape_int64_t_t ph)` [**related**]
- 10.48.2.57** `int ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_int64_t_with_complexity (ppl_Octagonal_Shape_mpq_class_t * pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)` [**related**]
- 10.48.2.58** `int ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_int8_t (ppl_Octagonal_Shape_mpq_class_t * pph, ppl_const_Octagonal_Shape_int8_t_t ph)` [**related**]

- 10.48.2.59 `int ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_int8_t_with_complexity (ppl_Octagonal_Shape_mpq_class_t * pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)` [related]
- 10.48.2.60 `int ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_long_double (ppl_Octagonal_Shape_mpq_class_t * pph, ppl_const_Octagonal_Shape_long_double_t ph)` [related]
- 10.48.2.61 `int ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_long_double_with_complexity (ppl_Octagonal_Shape_mpq_class_t * pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)` [related]
- 10.48.2.62 `int ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_mpq_class (ppl_Octagonal_Shape_mpq_class_t * pph, ppl_const_Octagonal_Shape_mpq_class_t ph)` [related]
- 10.48.2.63 `int ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_mpq_class_with_complexity (ppl_Octagonal_Shape_mpq_class_t * pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)` [related]
- 10.48.2.64 `int ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_mpz_class (ppl_Octagonal_Shape_mpq_class_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph)` [related]
- 10.48.2.65 `int ppl_new_Octagonal_Shape_mpq_class_from_Octagonal_Shape_mpz_class_with_complexity (ppl_Octagonal_Shape_mpq_class_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)` [related]
- 10.48.2.66 `int ppl_new_Octagonal_Shape_mpq_class_from_Rational_Box (ppl_Octagonal_Shape_mpq_class_t * pph, ppl_const_Rational_Box_t ph)` [related]

- 10.48.2.67** `int ppl_new_Octagonal_Shape_mpq_class_from_Rational_Box_with_complexity`
(`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Rational_Box_t ph`, `int complexity`) [`related`]
- 10.48.2.68** `int ppl_new_Octagonal_Shape_mpq_class_from_space_dimension`
(`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_dimension_type d`, `int empty`)
[`related`]
- 10.48.2.69** `int ppl_new_Octagonal_Shape_mpq_class_from_Uint16_Box`
(`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Uint16_Box_t ph`) [`related`]
- 10.48.2.70** `int ppl_new_Octagonal_Shape_mpq_class_from_Uint16_Box_with_complexity`
(`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Uint16_Box_t ph`, `int complexity`) [`related`]
- 10.48.2.71** `int ppl_new_Octagonal_Shape_mpq_class_from_Uint32_Box`
(`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Uint32_Box_t ph`) [`related`]
- 10.48.2.72** `int ppl_new_Octagonal_Shape_mpq_class_from_Uint32_Box_with_complexity`
(`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Uint32_Box_t ph`, `int complexity`) [`related`]
- 10.48.2.73** `int ppl_new_Octagonal_Shape_mpq_class_from_Uint64_Box`
(`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Uint64_Box_t ph`) [`related`]
- 10.48.2.74** `int ppl_new_Octagonal_Shape_mpq_class_from_Uint64_Box_with_complexity`
(`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Uint64_Box_t ph`, `int complexity`) [`related`]

- 10.48.2.75** `int ppl_new_Octagonal_Shape_mpq_class_from_Uint8_Box`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Uint8_Box_t ph`) [**related**]
- 10.48.2.76** `int ppl_new_Octagonal_Shape_mpq_class_from_Uint8_Box_with_complexity`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Uint8_Box_t ph`, `int complexity`)
 [**related**]
- 10.48.2.77** `int ppl_new_Octagonal_Shape_mpq_class_from_Z_Box` (`ppl_-`
`Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Z_Box_t ph`)
 [**related**]
- 10.48.2.78** `int ppl_new_Octagonal_Shape_mpq_class_from_Z_Box_with_complexity`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_const_Z_Box_t ph`, `int complexity`)
 [**related**]
- 10.48.2.79** `int ppl_new_Octagonal_Shape_mpq_class_recycle_Congruence_System`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_Congruence_System_t cs`)
 [**related**]
- 10.48.2.80** `int ppl_new_Octagonal_Shape_mpq_class_recycle_Constraint_System`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_Constraint_System_t cs`)
 [**related**]
- 10.48.2.81** `int ppl_new_Octagonal_Shape_mpq_class_recycle_Generator_System`
 (`ppl_Octagonal_Shape_mpq_class_t * pph`, `ppl_Generator_System_t cs`) [**related**]
- 10.48.2.82** `int ppl_Octagonal_Shape_mpq_class_add_congruence` (`ppl_-`
`Octagonal_Shape_mpq_class_t ph`, `ppl_const_Congruence_t c`)
 [**related**]

- 10.48.2.83 `int ppl_Octagonal_Shape_mpq_class_add_congruences (ppl_Octagonal_Shape_mpq_class_t ph, ppl_const_Congruence_System_t cs)` `[related]`
- 10.48.2.84 `int ppl_Octagonal_Shape_mpq_class_add_constraint (ppl_Octagonal_Shape_mpq_class_t ph, ppl_const_Constraint_t c)` `[related]`
- 10.48.2.85 `int ppl_Octagonal_Shape_mpq_class_add_constraints (ppl_Octagonal_Shape_mpq_class_t ph, ppl_const_Constraint_System_t cs)` `[related]`
- 10.48.2.86 `int ppl_Octagonal_Shape_mpq_class_add_recycled_congruences (ppl_Octagonal_Shape_mpq_class_t ph, ppl_Congruence_System_t cs)` `[related]`
- 10.48.2.87 `int ppl_Octagonal_Shape_mpq_class_add_recycled_constraints (ppl_Octagonal_Shape_mpq_class_t ph, ppl_Constraint_System_t cs)` `[related]`
- 10.48.2.88 `int ppl_Octagonal_Shape_mpq_class_add_space_dimensions_and_embed (ppl_Octagonal_Shape_mpq_class_t ph, ppl_dimension_type d)` `[related]`
- 10.48.2.89 `int ppl_Octagonal_Shape_mpq_class_add_space_dimensions_and_project (ppl_Octagonal_Shape_mpq_class_t ph, ppl_dimension_type d)` `[related]`
- 10.48.2.90 `int ppl_Octagonal_Shape_mpq_class_affine_dimension (ppl_const_Octagonal_Shape_mpq_class_t ph, ppl_dimension_type * m)` `[related]`
- 10.48.2.91 `int ppl_Octagonal_Shape_mpq_class_affine_image (ppl_Octagonal_Shape_mpq_class_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` `[related]`

- 10.48.2.92 `int ppl_Octagonal_Shape_mpq_class_affine_preimage (ppl_Octagonal_Shape_mpq_class_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.48.2.93 `int ppl_Octagonal_Shape_mpq_class_BHMZ05_widening_assign (ppl_Octagonal_Shape_mpq_class_t x, ppl_const_Octagonal_Shape_mpq_class_t y)` [`related`]
- 10.48.2.94 `int ppl_Octagonal_Shape_mpq_class_BHMZ05_widening_assign_with_tokens (ppl_Octagonal_Shape_mpq_class_t x, ppl_const_Octagonal_Shape_mpq_class_t y, unsigned * tp)` [`related`]
- 10.48.2.95 `int ppl_Octagonal_Shape_mpq_class_bounded_affine_image (ppl_Octagonal_Shape_mpq_class_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [`related`]
- 10.48.2.96 `int ppl_Octagonal_Shape_mpq_class_bounded_affine_preimage (ppl_Octagonal_Shape_mpq_class_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [`related`]
- 10.48.2.97 `int ppl_Octagonal_Shape_mpq_class_bounds_from_above (ppl_const_Octagonal_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le)` [`related`]
- 10.48.2.98 `int ppl_Octagonal_Shape_mpq_class_bounds_from_below (ppl_const_Octagonal_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le)` [`related`]
- 10.48.2.99 `int ppl_Octagonal_Shape_mpq_class_CC76_extrapolation_assign (ppl_Octagonal_Shape_mpq_class_t x, ppl_const_Octagonal_Shape_mpq_class_t y)` [`related`]

- 10.48.2.100** int ppl_Octagonal_Shape_mpq_class_CC76_extrapolation_assign_with_tokens (ppl_Octagonal_Shape_mpq_class_t *x*, ppl_const_Octagonal_Shape_mpq_class_t *y*, unsigned * *tp*) [related]
- 10.48.2.101** int ppl_Octagonal_Shape_mpq_class_CC76_narrowing_assign (ppl_Octagonal_Shape_mpq_class_t *x*, ppl_const_Octagonal_Shape_mpq_class_t *y*) [related]
- 10.48.2.102** int ppl_Octagonal_Shape_mpq_class_concatenate_assign (ppl_Octagonal_Shape_mpq_class_t *x*, ppl_const_Octagonal_Shape_mpq_class_t *y*) [related]
- 10.48.2.103** int ppl_Octagonal_Shape_mpq_class_constrains (ppl_Octagonal_Shape_mpq_class_t *ph*, ppl_dimension_type *var*) [related]
- 10.48.2.104** int ppl_Octagonal_Shape_mpq_class_contains_integer_point (ppl_const_Octagonal_Shape_mpq_class_t *ph*) [related]
- 10.48.2.105** int ppl_Octagonal_Shape_mpq_class_contains_Octagonal_Shape_mpq_class (ppl_const_Octagonal_Shape_mpq_class_t *x*, ppl_const_Octagonal_Shape_mpq_class_t *y*) [related]
- 10.48.2.106** int ppl_Octagonal_Shape_mpq_class_difference_assign (ppl_Octagonal_Shape_mpq_class_t *x*, ppl_const_Octagonal_Shape_mpq_class_t *y*) [related]
- 10.48.2.107** int ppl_Octagonal_Shape_mpq_class_drop_some_non_integer_points (ppl_Octagonal_Shape_mpq_class_t *ph*, int *complexity*) [related]

- 10.48.2.108** `int ppl_Octagonal_Shape_mpq_class_drop_some_non_integer_points_2`
 (`ppl_Octagonal_Shape_mpq_class_t ph`, `ppl_dimension_type ds[]`, `size_t n`, `int complexity`) [**related**]
- 10.48.2.109** `int ppl_Octagonal_Shape_mpq_class_equals_Octagonal_Shape_mpq_class` (`ppl_const_Octagonal_Shape_mpq_class_t x`, `ppl_const_Octagonal_Shape_mpq_class_t y`)
 [**related**]
- 10.48.2.110** `int ppl_Octagonal_Shape_mpq_class_expand_space_dimension`
 (`ppl_Octagonal_Shape_mpq_class_t ph`, `ppl_dimension_type d`, `ppl_dimension_type m`) [**related**]
- 10.48.2.111** `int ppl_Octagonal_Shape_mpq_class_external_memory_in_bytes`
 (`ppl_const_Octagonal_Shape_mpq_class_t ps`, `size_t * sz`) [**related**]
- 10.48.2.112** `int ppl_Octagonal_Shape_mpq_class_fold_space_dimensions` (`ppl_Octagonal_Shape_mpq_class_t ph`, `ppl_dimension_type ds[]`, `size_t n`, `ppl_dimension_type d`)
 [**related**]
- 10.48.2.113** `int ppl_Octagonal_Shape_mpq_class_frequency` (`ppl_const_Octagonal_Shape_mpq_class_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_fn`, `ppl_Coefficient_t ext_fd`, `ppl_Coefficient_t ext_vn`, `ppl_Coefficient_t ext_vd`)
 [**related**]
- 10.48.2.114** `int ppl_Octagonal_Shape_mpq_class_generalized_affine_image`
 (`ppl_Octagonal_Shape_mpq_class_t ph`, `ppl_dimension_type var`, `enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`) [**related**]
- 10.48.2.115** `int ppl_Octagonal_Shape_mpq_class_generalized_affine_image_lhs_rhs`
 (`ppl_Octagonal_Shape_mpq_class_t ph`, `ppl_const_Linear_Expression_t lhs`, `enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
 [**related**]

- 10.48.2.116 `int ppl_Octagonal_Shape_mpq_class_generalized_affine_preimage`
 (`ppl_Octagonal_Shape_mpq_class_t` *ph*, `ppl_dimension_type` *var*, `enum`
`ppl_enum_Constraint_Type` *relysym*, `ppl_const_Linear_Expression_t` *le*,
`ppl_const_Coefficient_t` *d*) [`related`]
- 10.48.2.117 `int ppl_Octagonal_Shape_mpq_class_generalized_affine_preimage_lhs_rhs`
 (`ppl_Octagonal_Shape_mpq_class_t` *ph*, `ppl_const_Linear_Expression_t` *lhs*,
`enum` `ppl_enum_Constraint_Type` *relysym*, `ppl_const_Linear_Expression_t` *rhs*)
 [`related`]
- 10.48.2.118 `int ppl_Octagonal_Shape_mpq_class_get_congruences` (`ppl_const_-`
`Octagonal_Shape_mpq_class_t` *ph*, `ppl_const_Congruence_System_t` * *pcs*)
 [`related`]
- 10.48.2.119 `int ppl_Octagonal_Shape_mpq_class_get_constraints` (`ppl_const_-`
`Octagonal_Shape_mpq_class_t` *ph*, `ppl_const_Constraint_System_t` * *pcs*)
 [`related`]
- 10.48.2.120 `int ppl_Octagonal_Shape_mpq_class_get_minimized_congruences`
 (`ppl_const_Octagonal_Shape_mpq_class_t` *ph*, `ppl_const_Congruence_System_t` *
pcs) [`related`]
- 10.48.2.121 `int ppl_Octagonal_Shape_mpq_class_get_minimized_constraints`
 (`ppl_const_Octagonal_Shape_mpq_class_t` *ph*, `ppl_const_Constraint_System_t` * *pcs*)
 [`related`]
- 10.48.2.122 `int ppl_Octagonal_Shape_mpq_class_intersection_assign` (`ppl_Octagonal_-`
`Shape_mpq_class_t` *x*, `ppl_const_Octagonal_Shape_mpq_class_t` *y*)
 [`related`]
- 10.48.2.123 `int ppl_Octagonal_Shape_mpq_class_is_bounded` (`ppl_const_Octagonal_Shape_-`
`mpq_class_t` *ph*) [`related`]

- 10.48.2.124 `int ppl_Octagonal_Shape_mpq_class_is_discrete (ppl_const_Octagonal_Shape_mpq_class_t ph)` [`related`]
- 10.48.2.125 `int ppl_Octagonal_Shape_mpq_class_is_disjoint_from_Octagonal_Shape_mpq_class (ppl_const_Octagonal_Shape_mpq_class_t x, ppl_const_Octagonal_Shape_mpq_class_t y)` [`related`]
- 10.48.2.126 `int ppl_Octagonal_Shape_mpq_class_is_empty (ppl_const_Octagonal_Shape_mpq_class_t ph)` [`related`]
- 10.48.2.127 `int ppl_Octagonal_Shape_mpq_class_is_topologically_closed (ppl_const_Octagonal_Shape_mpq_class_t ph)` [`related`]
- 10.48.2.128 `int ppl_Octagonal_Shape_mpq_class_is_universe (ppl_const_Octagonal_Shape_mpq_class_t ph)` [`related`]
- 10.48.2.129 `int ppl_Octagonal_Shape_mpq_class_limited_BHMZ05_extrapolation_assign (ppl_Octagonal_Shape_mpq_class_t x, ppl_const_Octagonal_Shape_mpq_class_t y, ppl_const_Constraint_System_t cs)` [`related`]
- 10.48.2.130 `int ppl_Octagonal_Shape_mpq_class_limited_BHMZ05_extrapolation_assign_with_tokens (ppl_Octagonal_Shape_mpq_class_t x, ppl_const_Octagonal_Shape_mpq_class_t y, ppl_const_Constraint_System_t cs, unsigned * tp)` [`related`]
- 10.48.2.131 `int ppl_Octagonal_Shape_mpq_class_limited_CC76_extrapolation_assign (ppl_Octagonal_Shape_mpq_class_t x, ppl_const_Octagonal_Shape_mpq_class_t y, ppl_const_Constraint_System_t cs)` [`related`]

- 10.48.2.132 `int ppl_Octagonal_Shape_mpq_class_limited_CC76_extrapolation_assign_with_tokens (ppl_Octagonal_Shape_mpq_class_t x, ppl_const_Octagonal_Shape_mpq_class_t y, ppl_const_Constraint_System_t cs, unsigned *tp)` [related]
- 10.48.2.133 `int ppl_Octagonal_Shape_mpq_class_linear_partition (ppl_const_Octagonal_Shape_mpq_class_t x, ppl_const_Octagonal_Shape_mpq_class_t y, ppl_Octagonal_Shape_mpq_class_t *p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest)` [related]
- 10.48.2.134 `int ppl_Octagonal_Shape_mpq_class_map_space_dimensions (ppl_Octagonal_Shape_mpq_class_t ph, ppl_dimension_type maps[], size_t n)` [related]
- 10.48.2.135 `int ppl_Octagonal_Shape_mpq_class_maximize (ppl_const_Octagonal_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)` [related]
- 10.48.2.136 `int ppl_Octagonal_Shape_mpq_class_maximize_with_point (ppl_const_Octagonal_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` [related]
- 10.48.2.137 `int ppl_Octagonal_Shape_mpq_class_minimize (ppl_const_Octagonal_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)` [related]
- 10.48.2.138 `int ppl_Octagonal_Shape_mpq_class_minimize_with_point (ppl_const_Octagonal_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` [related]
- 10.48.2.139 `int ppl_Octagonal_Shape_mpq_class_OK (ppl_const_Octagonal_Shape_mpq_class_t ph)` [related]

- 10.48.2.140 `int ppl_Octagonal_Shape_mpq_class_refine_with_congruence`
 (`ppl_Octagonal_Shape_mpq_class_t ph`, `ppl_const_Congruence_t c`) [`related`]
- 10.48.2.141 `int ppl_Octagonal_Shape_mpq_class_refine_with_congruences`
 (`ppl_Octagonal_Shape_mpq_class_t ph`, `ppl_const_Congruence_System_t cs`)
 [`related`]
- 10.48.2.142 `int ppl_Octagonal_Shape_mpq_class_refine_with_constraint`
 (`ppl_Octagonal_Shape_mpq_class_t ph`, `ppl_const_Constraint_t c`) [`related`]
- 10.48.2.143 `int ppl_Octagonal_Shape_mpq_class_refine_with_constraints`
 (`ppl_Octagonal_Shape_mpq_class_t ph`, `ppl_const_Constraint_System_t cs`)
 [`related`]
- 10.48.2.144 `int ppl_Octagonal_Shape_mpq_class_relation_with_Congruence`
 (`ppl_const_Octagonal_Shape_mpq_class_t ph`, `ppl_const_Congruence_t c`)
 [`related`]
- 10.48.2.145 `int ppl_Octagonal_Shape_mpq_class_relation_with_Constraint`
 (`ppl_const_Octagonal_Shape_mpq_class_t ph`, `ppl_const_Constraint_t c`)
 [`related`]
- 10.48.2.146 `int ppl_Octagonal_Shape_mpq_class_relation_with_Generator`
 (`ppl_const_Octagonal_Shape_mpq_class_t ph`, `ppl_const_Generator_t c`)
 [`related`]
- 10.48.2.147 `int ppl_Octagonal_Shape_mpq_class_remove_higher_space_dimensions`
 (`ppl_Octagonal_Shape_mpq_class_t ph`, `ppl_dimension_type d`) [`related`]

- 10.48.2.148** `int ppl_Octagonal_Shape_mpq_class_remove_space_dimensions`
 (`ppl_Octagonal_Shape_mpq_class_t ph`, `ppl_dimension_type ds[]`, `size_t n`)
 [`related`]
- 10.48.2.149** `int ppl_Octagonal_Shape_mpq_class_simplify_using_context_assign`
 (`ppl_Octagonal_Shape_mpq_class_t x`, `ppl_const_Octagonal_Shape_mpq_class_t y`)
 [`related`]
- 10.48.2.150** `int ppl_Octagonal_Shape_mpq_class_space_dimension` (`ppl_const_Octagonal_Shape_mpq_class_t ph`, `ppl_dimension_type * m`)
 [`related`]
- 10.48.2.151** `int ppl_Octagonal_Shape_mpq_class_strictly_contains_Octagonal_Shape_mpq_class` (`ppl_const_Octagonal_Shape_mpq_class_t x`, `ppl_const_Octagonal_Shape_mpq_class_t y`) [`related`]
- 10.48.2.152** `int ppl_Octagonal_Shape_mpq_class_time_elapse_assign` (`ppl_Octagonal_Shape_mpq_class_t x`, `ppl_const_Octagonal_Shape_mpq_class_t y`)
 [`related`]
- 10.48.2.153** `int ppl_Octagonal_Shape_mpq_class_topological_closure_assign`
 (`ppl_Octagonal_Shape_mpq_class_t ph`) [`related`]
- 10.48.2.154** `int ppl_Octagonal_Shape_mpq_class_total_memory_in_bytes`
 (`ppl_const_Octagonal_Shape_mpq_class_t ps`, `size_t * sz`) [`related`]
- 10.48.2.155** `int ppl_Octagonal_Shape_mpq_class_unconstrain_space_dimension`
 (`ppl_Octagonal_Shape_mpq_class_t ph`, `ppl_dimension_type var`) [`related`]

- 10.48.2.156** `int ppl_Octagonal_Shape_mpq_class_unconstrain_space_dimensions`
 (`ppl_Octagonal_Shape_mpq_class_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`)
 [`related`]
- 10.48.2.157** `int ppl_Octagonal_Shape_mpq_class_upper_bound_assign` (`ppl_Octagonal_-`
`Shape_mpq_class_t x`, `ppl_const_Octagonal_Shape_mpq_class_t y`)
 [`related`]
- 10.48.2.158** `int ppl_Octagonal_Shape_mpq_class_upper_bound_assign_if_exact`
 (`ppl_Octagonal_Shape_mpq_class_t x`, `ppl_const_Octagonal_Shape_mpq_class_t y`)
 [`related`]
- 10.48.2.159** `int ppl_Octagonal_Shape_mpq_class_widening_assign` (`ppl_Octagonal_-`
`Shape_mpq_class_t x`, `ppl_const_Octagonal_Shape_mpq_class_t y`)
 [`related`]
- 10.48.2.160** `int ppl_Octagonal_Shape_mpq_class_widening_assign_with_tokens`
 (`ppl_Octagonal_Shape_mpq_class_t x`, `ppl_const_Octagonal_Shape_mpq_class_t y`,
`unsigned * tp`) [`related`]
- 10.48.2.161** `int ppl_Octagonal_Shape_mpq_class_wrap_assign` (`ppl_Octagonal_-`
`Shape_mpq_class_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`, `enum`
`ppl_enum_Bounded_Integer_Type_Width w`, `enum ppl_enum_Bounded_Integer_-`
`Type_Representation r`, `enum ppl_enum_Bounded_Integer_Type_Overflow o`,
`const ppl_const_Constraint_System_t * pcs`, `unsigned complexity_threshold`, `int`
`wrap_individually`) [`related`]
- 10.48.2.162** `int ppl_one_affine_ranking_function_MS_Octagonal_Shape_mpq_class`
 (`ppl_const_Octagonal_Shape_mpq_class_t pset`, `ppl_Generator_t point`)
 [`related`]

- 10.48.2.163 `int ppl_one_affine_ranking_function_MS_Octagonal_Shape_mpq_class_2`
 (`ppl_const_Octagonal_Shape_mpq_class_t pset_before`, `ppl_const_Octagonal_Shape_mpq_class_t pset_after`, `ppl_Generator_t point`)
 [`related`]
- 10.48.2.164 `int ppl_one_affine_ranking_function_PR_Octagonal_Shape_mpq_class`
 (`ppl_const_Octagonal_Shape_mpq_class_t pset`, `ppl_Generator_t point`)
 [`related`]
- 10.48.2.165 `int ppl_one_affine_ranking_function_PR_Octagonal_Shape_mpq_class_2`
 (`ppl_const_Octagonal_Shape_mpq_class_t pset_before`, `ppl_const_Octagonal_Shape_mpq_class_t pset_after`, `ppl_Generator_t point`)
 [`related`]
- 10.48.2.166 `int ppl_termination_test_MS_Octagonal_Shape_mpq_class`
 (`ppl_const_Octagonal_Shape_mpq_class_t pset`) [`related`]
- 10.48.2.167 `int ppl_termination_test_MS_Octagonal_Shape_mpq_class_2` (`ppl_const_Octagonal_Shape_mpq_class_t pset_before`, `ppl_const_Octagonal_Shape_mpq_class_t pset_after`)
 [`related`]
- 10.48.2.168 `int ppl_termination_test_PR_Octagonal_Shape_mpq_class`
 (`ppl_const_Octagonal_Shape_mpq_class_t pset`) [`related`]
- 10.48.2.169 `int ppl_termination_test_PR_Octagonal_Shape_mpq_class_2` (`ppl_const_Octagonal_Shape_mpq_class_t pset_before`, `ppl_const_Octagonal_Shape_mpq_class_t pset_after`)
 [`related`]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.49 ppl_Octagonal_Shape_mpz_class_tag Interface Reference

Types and functions for [ppl_Octagonal_Shape_mpz_class_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Octagonal_Shape_mpz_class` (`ppl_const_Octagonal_Shape_mpz_class_t` ph)
- `int ppl_new_Octagonal_Shape_mpz_class_from_space_dimension` (`ppl_Octagonal_Shape_mpz_class_t` *pph, `ppl_dimension_type` d, int empty)
- `int ppl_new_Octagonal_Shape_mpz_class_from_Int8_Box` (`ppl_Octagonal_Shape_mpz_class_t` *pph, `ppl_const_Int8_Box_t` ph)
- `int ppl_new_Octagonal_Shape_mpz_class_from_Int16_Box` (`ppl_Octagonal_Shape_mpz_class_t` *pph, `ppl_const_Int16_Box_t` ph)
- `int ppl_new_Octagonal_Shape_mpz_class_from_Int32_Box` (`ppl_Octagonal_Shape_mpz_class_t` *pph, `ppl_const_Int32_Box_t` ph)
- `int ppl_new_Octagonal_Shape_mpz_class_from_Int64_Box` (`ppl_Octagonal_Shape_mpz_class_t` *pph, `ppl_const_Int64_Box_t` ph)
- `int ppl_new_Octagonal_Shape_mpz_class_from_Uint8_Box` (`ppl_Octagonal_Shape_mpz_class_t` *pph, `ppl_const_Uint8_Box_t` ph)
- `int ppl_new_Octagonal_Shape_mpz_class_from_Uint16_Box` (`ppl_Octagonal_Shape_mpz_class_t` *pph, `ppl_const_Uint16_Box_t` ph)
- `int ppl_new_Octagonal_Shape_mpz_class_from_Uint32_Box` (`ppl_Octagonal_Shape_mpz_class_t` *pph, `ppl_const_Uint32_Box_t` ph)
- `int ppl_new_Octagonal_Shape_mpz_class_from_Uint64_Box` (`ppl_Octagonal_Shape_mpz_class_t` *pph, `ppl_const_Uint64_Box_t` ph)
- `int ppl_new_Octagonal_Shape_mpz_class_from_Z_Box` (`ppl_Octagonal_Shape_mpz_class_t` *pph, `ppl_const_Z_Box_t` ph)
- `int ppl_new_Octagonal_Shape_mpz_class_from_Rational_Box` (`ppl_Octagonal_Shape_mpz_class_t` *pph, `ppl_const_Rational_Box_t` ph)
- `int ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_int8_t` (`ppl_Octagonal_Shape_mpz_class_t` *pph, `ppl_const_BD_Shape_int8_t_t` ph)
- `int ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_int16_t` (`ppl_Octagonal_Shape_mpz_class_t` *pph, `ppl_const_BD_Shape_int16_t_t` ph)
- `int ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_int32_t` (`ppl_Octagonal_Shape_mpz_class_t` *pph, `ppl_const_BD_Shape_int32_t_t` ph)
- `int ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_int64_t` (`ppl_Octagonal_Shape_mpz_class_t` *pph, `ppl_const_BD_Shape_int64_t_t` ph)
- `int ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_mpz_class` (`ppl_Octagonal_Shape_mpz_class_t` *pph, `ppl_const_BD_Shape_mpz_class_t` ph)
- `int ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_mpq_class` (`ppl_Octagonal_Shape_mpz_class_t` *pph, `ppl_const_BD_Shape_mpq_class_t` ph)
- `int ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape_int8_t` (`ppl_Octagonal_Shape_mpz_class_t` *pph, `ppl_const_Octagonal_Shape_int8_t_t` ph)
- `int ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape_int16_t` (`ppl_Octagonal_Shape_mpz_class_t` *pph, `ppl_const_Octagonal_Shape_int16_t_t` ph)
- `int ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape_int32_t` (`ppl_Octagonal_Shape_mpz_class_t` *pph, `ppl_const_Octagonal_Shape_int32_t_t` ph)
- `int ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape_int64_t` (`ppl_Octagonal_Shape_mpz_class_t` *pph, `ppl_const_Octagonal_Shape_int64_t_t` ph)
- `int ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape_mpz_class` (`ppl_Octagonal_Shape_mpz_class_t` *pph, `ppl_const_Octagonal_Shape_mpz_class_t` ph)

- int [ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape_mpq_class](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph)
- int [ppl_new_Octagonal_Shape_mpz_class_from_C_Polyhedron](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Polyhedron_t ph)
- int [ppl_new_Octagonal_Shape_mpz_class_from_NNC_Polyhedron](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Polyhedron_t ph)
- int [ppl_new_Octagonal_Shape_mpz_class_from_Grid](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Grid_t ph)
- int [ppl_new_Octagonal_Shape_mpz_class_from_Float_Box](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Float_Box_t ph)
- int [ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_float](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_BD_Shape_float_t ph)
- int [ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape_float](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Octagonal_Shape_float_t ph)
- int [ppl_new_Octagonal_Shape_mpz_class_from_Double_Box](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Double_Box_t ph)
- int [ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_double](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_BD_Shape_double_t ph)
- int [ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape_double](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Octagonal_Shape_double_t ph)
- int [ppl_new_Octagonal_Shape_mpz_class_from_Long_Double_Box](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Long_Double_Box_t ph)
- int [ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_long_double](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_BD_Shape_long_double_t ph)
- int [ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape_long_double](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Octagonal_Shape_long_double_t ph)
- int [ppl_new_Octagonal_Shape_mpz_class_from_Int8_Box_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Int8_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpz_class_from_Int16_Box_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Int16_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpz_class_from_Int32_Box_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Int32_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpz_class_from_Int64_Box_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Int64_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpz_class_from_Uint8_Box_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Uint8_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpz_class_from_Uint16_Box_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Uint16_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpz_class_from_Uint32_Box_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Uint32_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpz_class_from_Uint64_Box_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Uint64_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpz_class_from_Z_Box_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Z_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpz_class_from_Rational_Box_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Rational_Box_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_int8_t_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_int16_t_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)
- int [ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_int32_t_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)

- [int ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_int64_t_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_mpz_class_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_mpq_class_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape_int8_t_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape_int16_t_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape_int32_t_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape_int64_t_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape_mpz_class_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape_mpq_class_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_mpz_class_from_C_Polyhedron_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_mpz_class_from_NNC_Polyhedron_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_mpz_class_from_Grid_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Grid_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_mpz_class_from_Float_Box_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Float_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_float_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_BD_Shape_float_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape_float_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_mpz_class_from_Double_Box_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Double_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_double_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_BD_Shape_double_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape_double_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_mpz_class_from_Long_Double_Box_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_long_double_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape_long_double_with_complexity](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)
- [int ppl_new_Octagonal_Shape_mpz_class_from_Constraint_System](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Constraint_System_t cs)

- int [ppl_new_Octagonal_Shape_mpz_class_from_Congruence_System](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Congruence_System_t cs)
- int [ppl_new_Octagonal_Shape_mpz_class_from_Generator_System](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_const_Generator_System_t cs)
- int [ppl_Octagonal_Shape_mpz_class_space_dimension](#) (ppl_const_Octagonal_Shape_mpz_class_t ph, ppl_dimension_type *m)
- int [ppl_Octagonal_Shape_mpz_class_affine_dimension](#) (ppl_const_Octagonal_Shape_mpz_class_t ph, ppl_dimension_type *m)
- int [ppl_Octagonal_Shape_mpz_class_relation_with_Constraint](#) (ppl_const_Octagonal_Shape_mpz_class_t ph, ppl_const_Constraint_t c)
- int [ppl_Octagonal_Shape_mpz_class_relation_with_Generator](#) (ppl_const_Octagonal_Shape_mpz_class_t ph, ppl_const_Generator_t c)
- int [ppl_Octagonal_Shape_mpz_class_relation_with_Congruence](#) (ppl_const_Octagonal_Shape_mpz_class_t ph, ppl_const_Congruence_t c)
- int [ppl_Octagonal_Shape_mpz_class_get_constraints](#) (ppl_const_Octagonal_Shape_mpz_class_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_Octagonal_Shape_mpz_class_get_congruences](#) (ppl_const_Octagonal_Shape_mpz_class_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_Octagonal_Shape_mpz_class_get_minimized_constraints](#) (ppl_const_Octagonal_Shape_mpz_class_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_Octagonal_Shape_mpz_class_get_minimized_congruences](#) (ppl_const_Octagonal_Shape_mpz_class_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_Octagonal_Shape_mpz_class_is_empty](#) (ppl_const_Octagonal_Shape_mpz_class_t ph)
- int [ppl_Octagonal_Shape_mpz_class_is_universe](#) (ppl_const_Octagonal_Shape_mpz_class_t ph)
- int [ppl_Octagonal_Shape_mpz_class_is_bounded](#) (ppl_const_Octagonal_Shape_mpz_class_t ph)
- int [ppl_Octagonal_Shape_mpz_class_contains_integer_point](#) (ppl_const_Octagonal_Shape_mpz_class_t ph)
- int [ppl_Octagonal_Shape_mpz_class_is_topologically_closed](#) (ppl_const_Octagonal_Shape_mpz_class_t ph)
- int [ppl_Octagonal_Shape_mpz_class_is_discrete](#) (ppl_const_Octagonal_Shape_mpz_class_t ph)
- int [ppl_Octagonal_Shape_mpz_class_topological_closure_assign](#) (ppl_Octagonal_Shape_mpz_class_t ph)
- int [ppl_Octagonal_Shape_mpz_class_bounds_from_above](#) (ppl_const_Octagonal_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Octagonal_Shape_mpz_class_bounds_from_below](#) (ppl_const_Octagonal_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Octagonal_Shape_mpz_class_maximize](#) (ppl_const_Octagonal_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Octagonal_Shape_mpz_class_minimize](#) (ppl_const_Octagonal_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Octagonal_Shape_mpz_class_maximize_with_point](#) (ppl_const_Octagonal_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Octagonal_Shape_mpz_class_minimize_with_point](#) (ppl_const_Octagonal_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Octagonal_Shape_mpz_class_frequency](#) (ppl_const_Octagonal_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)
- int [ppl_Octagonal_Shape_mpz_class_contains_Octagonal_Shape_mpz_class](#) (ppl_const_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y)

- int [ppl_Octagonal_Shape_mpz_class_strictly_contains_Octagonal_Shape_mpz_class](#) (ppl_const_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y)
- int [ppl_Octagonal_Shape_mpz_class_is_disjoint_from_Octagonal_Shape_mpz_class](#) (ppl_const_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y)
- int [ppl_Octagonal_Shape_mpz_class_equals_Octagonal_Shape_mpz_class](#) (ppl_const_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y)
- int [ppl_Octagonal_Shape_mpz_class_OK](#) (ppl_const_Octagonal_Shape_mpz_class_t ph)
- int [ppl_Octagonal_Shape_mpz_class_add_constraint](#) (ppl_Octagonal_Shape_mpz_class_t ph, ppl_const_Constraint_t c)
- int [ppl_Octagonal_Shape_mpz_class_add_congruence](#) (ppl_Octagonal_Shape_mpz_class_t ph, ppl_const_Congruence_t c)
- int [ppl_Octagonal_Shape_mpz_class_add_constraints](#) (ppl_Octagonal_Shape_mpz_class_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Octagonal_Shape_mpz_class_add_congruences](#) (ppl_Octagonal_Shape_mpz_class_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Octagonal_Shape_mpz_class_refine_with_constraint](#) (ppl_Octagonal_Shape_mpz_class_t ph, ppl_const_Constraint_t c)
- int [ppl_Octagonal_Shape_mpz_class_refine_with_congruence](#) (ppl_Octagonal_Shape_mpz_class_t ph, ppl_const_Congruence_t c)
- int [ppl_Octagonal_Shape_mpz_class_refine_with_constraints](#) (ppl_Octagonal_Shape_mpz_class_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Octagonal_Shape_mpz_class_refine_with_congruences](#) (ppl_Octagonal_Shape_mpz_class_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Octagonal_Shape_mpz_class_intersection_assign](#) (ppl_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y)
- int [ppl_Octagonal_Shape_mpz_class_upper_bound_assign](#) (ppl_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y)
- int [ppl_Octagonal_Shape_mpz_class_difference_assign](#) (ppl_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y)
- int [ppl_Octagonal_Shape_mpz_class_concatenate_assign](#) (ppl_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y)
- int [ppl_Octagonal_Shape_mpz_class_time_elapse_assign](#) (ppl_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y)
- int [ppl_Octagonal_Shape_mpz_class_upper_bound_assign_if_exact](#) (ppl_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y)
- int [ppl_Octagonal_Shape_mpz_class_simplify_using_context_assign](#) (ppl_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y)
- int [ppl_Octagonal_Shape_mpz_class_constrains](#) (ppl_Octagonal_Shape_mpz_class_t ph, [ppl_dimension_type](#) var)
- int [ppl_Octagonal_Shape_mpz_class_unconstrain_space_dimension](#) (ppl_Octagonal_Shape_mpz_class_t ph, [ppl_dimension_type](#) var)
- int [ppl_Octagonal_Shape_mpz_class_unconstrain_space_dimensions](#) (ppl_Octagonal_Shape_mpz_class_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Octagonal_Shape_mpz_class_affine_image](#) (ppl_Octagonal_Shape_mpz_class_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_mpz_class_affine_preimage](#) (ppl_Octagonal_Shape_mpz_class_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_mpz_class_bounded_affine_image](#) (ppl_Octagonal_Shape_mpz_class_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)

- int [ppl_Octagonal_Shape_mpz_class_bounded_affine_preimage](#) (ppl_Octagonal_Shape_mpz_class_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_mpz_class_generalized_affine_image](#) (ppl_Octagonal_Shape_mpz_class_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_mpz_class_generalized_affine_preimage](#) (ppl_Octagonal_Shape_mpz_class_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Octagonal_Shape_mpz_class_generalized_affine_image_lhs_rhs](#) (ppl_Octagonal_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Octagonal_Shape_mpz_class_generalized_affine_preimage_lhs_rhs](#) (ppl_Octagonal_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Octagonal_Shape_mpz_class_add_space_dimensions_and_embed](#) (ppl_Octagonal_Shape_mpz_class_t ph, [ppl_dimension_type](#) d)
- int [ppl_Octagonal_Shape_mpz_class_add_space_dimensions_and_project](#) (ppl_Octagonal_Shape_mpz_class_t ph, [ppl_dimension_type](#) d)
- int [ppl_Octagonal_Shape_mpz_class_remove_space_dimensions](#) (ppl_Octagonal_Shape_mpz_class_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Octagonal_Shape_mpz_class_remove_higher_space_dimensions](#) (ppl_Octagonal_Shape_mpz_class_t ph, [ppl_dimension_type](#) d)
- int [ppl_Octagonal_Shape_mpz_class_expand_space_dimension](#) (ppl_Octagonal_Shape_mpz_class_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Octagonal_Shape_mpz_class_fold_space_dimensions](#) (ppl_Octagonal_Shape_mpz_class_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_Octagonal_Shape_mpz_class_map_space_dimensions](#) (ppl_Octagonal_Shape_mpz_class_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_Octagonal_Shape_mpz_class_drop_some_non_integer_points](#) (ppl_Octagonal_Shape_mpz_class_t ph, int complexity)
- int [ppl_Octagonal_Shape_mpz_class_drop_some_non_integer_points_2](#) (ppl_Octagonal_Shape_mpz_class_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_Octagonal_Shape_mpz_class_external_memory_in_bytes](#) (ppl_const_Octagonal_Shape_mpz_class_t ps, size_t *sz)
- int [ppl_Octagonal_Shape_mpz_class_total_memory_in_bytes](#) (ppl_const_Octagonal_Shape_mpz_class_t ps, size_t *sz)
- int [ppl_Octagonal_Shape_mpz_class_BHMZ05_widening_assign_with_tokens](#) (ppl_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y, unsigned *tp)
- int [ppl_Octagonal_Shape_mpz_class_BHMZ05_widening_assign](#) (ppl_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y)
- int [ppl_Octagonal_Shape_mpz_class_widening_assign_with_tokens](#) (ppl_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y, unsigned *tp)
- int [ppl_Octagonal_Shape_mpz_class_widening_assign](#) (ppl_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y)
- int [ppl_Octagonal_Shape_mpz_class_limited_BHMZ05_extrapolation_assign_with_tokens](#) (ppl_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- int [ppl_Octagonal_Shape_mpz_class_limited_CC76_extrapolation_assign_with_tokens](#) (ppl_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y, ppl_const_Constraint_System_t cs, unsigned *tp)

- int [ppl_Octagonal_Shape_mpz_class_limited_BHMZ05_extrapolation_assign](#) (ppl_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y, ppl_const_Constraint_System_t cs)
- int [ppl_Octagonal_Shape_mpz_class_limited_CC76_extrapolation_assign](#) (ppl_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y, ppl_const_Constraint_System_t cs)
- int [ppl_Octagonal_Shape_mpz_class_CC76_extrapolation_assign_with_tokens](#) (ppl_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y, unsigned *tp)
- int [ppl_Octagonal_Shape_mpz_class_CC76_extrapolation_assign](#) (ppl_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y)
- int [ppl_Octagonal_Shape_mpz_class_CC76_narrowing_assign](#) (ppl_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y)
- int [ppl_Octagonal_Shape_mpz_class_linear_partition](#) (ppl_const_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y, ppl_Octagonal_Shape_mpz_class_t *p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest)
- int [ppl_Octagonal_Shape_mpz_class_wrap_assign](#) (ppl_Octagonal_Shape_mpz_class_t ph, [ppl_dimension_type](#) ds[], size_t n, enum [ppl_enum_Bounded_Integer_Type_Width](#) w, enum [ppl_enum_Bounded_Integer_Type_Representation](#) r, enum [ppl_enum_Bounded_Integer_Type_Overflow](#) o, const ppl_const_Constraint_System_t *pcs, unsigned complexity_threshold, int wrap_individually)
- int [ppl_new_Octagonal_Shape_mpz_class_recycle_Constraint_System](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_Constraint_System_t cs)
- int [ppl_new_Octagonal_Shape_mpz_class_recycle_Congruence_System](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_Congruence_System_t cs)
- int [ppl_new_Octagonal_Shape_mpz_class_recycle_Generator_System](#) (ppl_Octagonal_Shape_mpz_class_t *pph, ppl_Generator_System_t cs)
- int [ppl_assign_Octagonal_Shape_mpz_class_from_Octagonal_Shape_mpz_class](#) (ppl_Octagonal_Shape_mpz_class_t dst, ppl_const_Octagonal_Shape_mpz_class_t src)
- int [ppl_Octagonal_Shape_mpz_class_add_recycled_constraints](#) (ppl_Octagonal_Shape_mpz_class_t ph, ppl_Constraint_System_t cs)
- int [ppl_Octagonal_Shape_mpz_class_add_recycled_congruences](#) (ppl_Octagonal_Shape_mpz_class_t ph, ppl_Congruence_System_t cs)
- int [ppl_termination_test_MS_Octagonal_Shape_mpz_class](#) (ppl_const_Octagonal_Shape_mpz_class_t pset)
- int [ppl_termination_test_PR_Octagonal_Shape_mpz_class](#) (ppl_const_Octagonal_Shape_mpz_class_t pset)
- int [ppl_one_affine_ranking_function_MS_Octagonal_Shape_mpz_class](#) (ppl_const_Octagonal_Shape_mpz_class_t pset, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_Octagonal_Shape_mpz_class](#) (ppl_const_Octagonal_Shape_mpz_class_t pset, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_Octagonal_Shape_mpz_class](#) (ppl_const_Octagonal_Shape_mpz_class_t pset, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_Octagonal_Shape_mpz_class](#) (ppl_const_Octagonal_Shape_mpz_class_t pset, ppl_Polyhedron_t ph)
- int [ppl_termination_test_MS_Octagonal_Shape_mpz_class_2](#) (ppl_const_Octagonal_Shape_mpz_class_t pset_before, ppl_const_Octagonal_Shape_mpz_class_t pset_after)
- int [ppl_termination_test_PR_Octagonal_Shape_mpz_class_2](#) (ppl_const_Octagonal_Shape_mpz_class_t pset_before, ppl_const_Octagonal_Shape_mpz_class_t pset_after)
- int [ppl_one_affine_ranking_function_MS_Octagonal_Shape_mpz_class_2](#) (ppl_const_Octagonal_Shape_mpz_class_t pset_before, ppl_const_Octagonal_Shape_mpz_class_t pset_after, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_Octagonal_Shape_mpz_class_2](#) (ppl_const_Octagonal_Shape_mpz_class_t pset_before, ppl_const_Octagonal_Shape_mpz_class_t pset_after, ppl_Generator_t point)

- int [ppl_all_affine_ranking_functions_MS_Octagonal_Shape_mpz_class_2](#) (ppl_const_Octagonal_Shape_mpz_class_t pset_before, ppl_const_Octagonal_Shape_mpz_class_t pset_after, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_Octagonal_Shape_mpz_class_2](#) (ppl_const_Octagonal_Shape_mpz_class_t pset_before, ppl_const_Octagonal_Shape_mpz_class_t pset_after, ppl_Polyhedron_t ph)

10.49.1 Detailed Description

Types and functions for [ppl_Octagonal_Shape_mpz_class_tag](#).

10.49.2 Friends And Related Function Documentation

- 10.49.2.1** int [ppl_all_affine_ranking_functions_MS_Octagonal_Shape_mpz_class](#) (ppl_const_Octagonal_Shape_mpz_class_t *pset*, ppl_Polyhedron_t *ph*) [[related](#)]
- 10.49.2.2** int [ppl_all_affine_ranking_functions_MS_Octagonal_Shape_mpz_class_2](#) (ppl_const_Octagonal_Shape_mpz_class_t *pset_before*, ppl_const_Octagonal_Shape_mpz_class_t *pset_after*, ppl_Polyhedron_t *ph*) [[related](#)]
- 10.49.2.3** int [ppl_all_affine_ranking_functions_PR_Octagonal_Shape_mpz_class](#) (ppl_const_Octagonal_Shape_mpz_class_t *pset*, ppl_Polyhedron_t *ph*) [[related](#)]
- 10.49.2.4** int [ppl_all_affine_ranking_functions_PR_Octagonal_Shape_mpz_class_2](#) (ppl_const_Octagonal_Shape_mpz_class_t *pset_before*, ppl_const_Octagonal_Shape_mpz_class_t *pset_after*, ppl_Polyhedron_t *ph*) [[related](#)]
- 10.49.2.5** int [ppl_assign_Octagonal_Shape_mpz_class_from_Octagonal_Shape_mpz_class](#) (ppl_Octagonal_Shape_mpz_class_t *dst*, ppl_const_Octagonal_Shape_mpz_class_t *src*) [[related](#)]
- 10.49.2.6** int [ppl_delete_Octagonal_Shape_mpz_class](#) (ppl_const_Octagonal_Shape_mpz_class_t *ph*) [[related](#)]

- 10.49.2.7 `int ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_double`
(`ppl_Octagonal_Shape_mpz_class_t * pph`, `ppl_const_BD_Shape_double_t ph`)
[related]
- 10.49.2.8 `int ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_double_with_complexity`
(`ppl_Octagonal_Shape_mpz_class_t * pph`, `ppl_const_BD_Shape_double_t ph`, `int complexity`) [related]
- 10.49.2.9 `int ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_float`
(`ppl_Octagonal_Shape_mpz_class_t * pph`, `ppl_const_BD_Shape_float_t ph`)
[related]
- 10.49.2.10 `int ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_float_with_complexity`
(`ppl_Octagonal_Shape_mpz_class_t * pph`, `ppl_const_BD_Shape_float_t ph`, `int complexity`) [related]
- 10.49.2.11 `int ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_int16_t`
(`ppl_Octagonal_Shape_mpz_class_t * pph`, `ppl_const_BD_Shape_int16_t_t ph`)
[related]
- 10.49.2.12 `int ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_int16_t_with_complexity`
(`ppl_Octagonal_Shape_mpz_class_t * pph`, `ppl_const_BD_Shape_int16_t_t ph`, `int complexity`) [related]
- 10.49.2.13 `int ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_int32_t`
(`ppl_Octagonal_Shape_mpz_class_t * pph`, `ppl_const_BD_Shape_int32_t_t ph`)
[related]
- 10.49.2.14 `int ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_int32_t_with_complexity`
(`ppl_Octagonal_Shape_mpz_class_t * pph`, `ppl_const_BD_Shape_int32_t_t ph`, `int complexity`) [related]

- 10.49.2.15 `int ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_int64_t`
(`ppl_Octagonal_Shape_mpz_class_t * pph`, `ppl_const_BD_Shape_int64_t_t ph`)
[related]
- 10.49.2.16 `int ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_int64_t_with_complexity`
(`ppl_Octagonal_Shape_mpz_class_t * pph`, `ppl_const_BD_Shape_int64_t_t ph`, `int complexity`) [related]
- 10.49.2.17 `int ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_int8_t`
(`ppl_Octagonal_Shape_mpz_class_t * pph`, `ppl_const_BD_Shape_int8_t_t ph`)
[related]
- 10.49.2.18 `int ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_int8_t_with_complexity`
(`ppl_Octagonal_Shape_mpz_class_t * pph`, `ppl_const_BD_Shape_int8_t_t ph`, `int complexity`) [related]
- 10.49.2.19 `int ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_long_double`
(`ppl_Octagonal_Shape_mpz_class_t * pph`, `ppl_const_BD_Shape_long_double_t ph`)
[related]
- 10.49.2.20 `int ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_long_double_with_complexity`
(`ppl_Octagonal_Shape_mpz_class_t * pph`, `ppl_const_BD_Shape_long_double_t ph`, `int complexity`) [related]
- 10.49.2.21 `int ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_mpq_class`
(`ppl_Octagonal_Shape_mpz_class_t * pph`, `ppl_const_BD_Shape_mpq_class_t ph`)
[related]
- 10.49.2.22 `int ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_mpq_class_with_complexity`
(`ppl_Octagonal_Shape_mpz_class_t * pph`, `ppl_const_BD_Shape_mpq_class_t ph`, `int complexity`) [related]

- 10.49.2.23 `int ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_mpz_class`
 (`ppl_Octagonal_Shape_mpz_class_t * pph`, `ppl_const_BD_Shape_mpz_class_t ph`)
 [related]
- 10.49.2.24 `int ppl_new_Octagonal_Shape_mpz_class_from_BD_Shape_mpz_class_with_complexity` (`ppl_Octagonal_Shape_mpz_class_t * pph`,
`ppl_const_BD_Shape_mpz_class_t ph`, `int complexity`) [related]
- 10.49.2.25 `int ppl_new_Octagonal_Shape_mpz_class_from_C_Polyhedron`
 (`ppl_Octagonal_Shape_mpz_class_t * pph`, `ppl_const_Polyhedron_t ph`) [related]
- 10.49.2.26 `int ppl_new_Octagonal_Shape_mpz_class_from_C_Polyhedron_with_complexity`
 (`ppl_Octagonal_Shape_mpz_class_t * pph`, `ppl_const_Polyhedron_t ph`, `int complexity`)
 [related]
- 10.49.2.27 `int ppl_new_Octagonal_Shape_mpz_class_from_Congruence_System`
 (`ppl_Octagonal_Shape_mpz_class_t * pph`, `ppl_const_Congruence_System_t cs`)
 [related]
- 10.49.2.28 `int ppl_new_Octagonal_Shape_mpz_class_from_Constraint_System`
 (`ppl_Octagonal_Shape_mpz_class_t * pph`, `ppl_const_Constraint_System_t cs`)
 [related]
- 10.49.2.29 `int ppl_new_Octagonal_Shape_mpz_class_from_Double_Box`
 (`ppl_Octagonal_Shape_mpz_class_t * pph`, `ppl_const_Double_Box_t ph`) [related]
- 10.49.2.30 `int ppl_new_Octagonal_Shape_mpz_class_from_Double_Box_with_complexity`
 (`ppl_Octagonal_Shape_mpz_class_t * pph`, `ppl_const_Double_Box_t ph`, `int complexity`) [related]

- 10.49.2.31** `int ppl_new_Octagonal_Shape_mpz_class_from_Float_Box`
(`ppl_Octagonal_Shape_mpz_class_t *pph`, `ppl_const_Float_Box_t ph`) [`related`]
- 10.49.2.32** `int ppl_new_Octagonal_Shape_mpz_class_from_Float_Box_with_complexity`
(`ppl_Octagonal_Shape_mpz_class_t *pph`, `ppl_const_Float_Box_t ph`, `int complexity`)
[`related`]
- 10.49.2.33** `int ppl_new_Octagonal_Shape_mpz_class_from_Generator_System`
(`ppl_Octagonal_Shape_mpz_class_t *pph`, `ppl_const_Generator_System_t cs`)
[`related`]
- 10.49.2.34** `int ppl_new_Octagonal_Shape_mpz_class_from_Grid` (`ppl_Octagonal_Shape_mpz_class_t *pph`, `ppl_const_Grid_t ph`) [`related`]
- 10.49.2.35** `int ppl_new_Octagonal_Shape_mpz_class_from_Grid_with_complexity`
(`ppl_Octagonal_Shape_mpz_class_t *pph`, `ppl_const_Grid_t ph`, `int complexity`)
[`related`]
- 10.49.2.36** `int ppl_new_Octagonal_Shape_mpz_class_from_Int16_Box`
(`ppl_Octagonal_Shape_mpz_class_t *pph`, `ppl_const_Int16_Box_t ph`) [`related`]
- 10.49.2.37** `int ppl_new_Octagonal_Shape_mpz_class_from_Int16_Box_with_complexity`
(`ppl_Octagonal_Shape_mpz_class_t *pph`, `ppl_const_Int16_Box_t ph`, `int complexity`)
[`related`]
- 10.49.2.38** `int ppl_new_Octagonal_Shape_mpz_class_from_Int32_Box`
(`ppl_Octagonal_Shape_mpz_class_t *pph`, `ppl_const_Int32_Box_t ph`) [`related`]

- 10.49.2.39 `int ppl_new_Octagonal_Shape_mpz_class_from_Int32_Box_with_complexity`
(`ppl_Octagonal_Shape_mpz_class_t *pph`, `ppl_const_Int32_Box_t ph`, `int complexity`)
[related]
- 10.49.2.40 `int ppl_new_Octagonal_Shape_mpz_class_from_Int64_Box`
(`ppl_Octagonal_Shape_mpz_class_t *pph`, `ppl_const_Int64_Box_t ph`) [related]
- 10.49.2.41 `int ppl_new_Octagonal_Shape_mpz_class_from_Int64_Box_with_complexity`
(`ppl_Octagonal_Shape_mpz_class_t *pph`, `ppl_const_Int64_Box_t ph`, `int complexity`)
[related]
- 10.49.2.42 `int ppl_new_Octagonal_Shape_mpz_class_from_Int8_Box` (`ppl -`
`Octagonal_Shape_mpz_class_t *pph`, `ppl_const_Int8_Box_t ph`)
[related]
- 10.49.2.43 `int ppl_new_Octagonal_Shape_mpz_class_from_Int8_Box_with_complexity`
(`ppl_Octagonal_Shape_mpz_class_t *pph`, `ppl_const_Int8_Box_t ph`, `int complexity`)
[related]
- 10.49.2.44 `int ppl_new_Octagonal_Shape_mpz_class_from_Long_Double_Box`
(`ppl_Octagonal_Shape_mpz_class_t *pph`, `ppl_const_Long_Double_Box_t ph`)
[related]
- 10.49.2.45 `int ppl_new_Octagonal_Shape_mpz_class_from_Long_Double_Box_with_complexity`
(`ppl_Octagonal_Shape_mpz_class_t *pph`, `ppl_const_Long_Double_Box_t ph`, `int`
`complexity`) [related]
- 10.49.2.46 `int ppl_new_Octagonal_Shape_mpz_class_from_NNC_Polyhedron`
(`ppl_Octagonal_Shape_mpz_class_t *pph`, `ppl_const_Polyhedron_t ph`) [related]

- 10.49.2.47 `int ppl_new_Octagonal_Shape_mpz_class_from_NNC_Polyhedron_with_complexity`
(`ppl_Octagonal_Shape_mpz_class_t * pph`, `ppl_const_Polyhedron_t ph`, `int complexity`)
[related]
- 10.49.2.48 `int ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape_double`
(`ppl_Octagonal_Shape_mpz_class_t * pph`, `ppl_const_Octagonal_Shape_double_t ph`)
[related]
- 10.49.2.49 `int ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape -`
`double_with_complexity` (`ppl_Octagonal_Shape_mpz_class_t * pph`,
`ppl_const_Octagonal_Shape_double_t ph`, `int complexity`) [related]
- 10.49.2.50 `int ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape_float`
(`ppl_Octagonal_Shape_mpz_class_t * pph`, `ppl_const_Octagonal_Shape_float_t ph`)
[related]
- 10.49.2.51 `int ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape -`
`float_with_complexity` (`ppl_Octagonal_Shape_mpz_class_t * pph`,
`ppl_const_Octagonal_Shape_float_t ph`, `int complexity`) [related]
- 10.49.2.52 `int ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape_int16_t`
(`ppl_Octagonal_Shape_mpz_class_t * pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`)
[related]
- 10.49.2.53 `int ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape -`
`int16_t_with_complexity` (`ppl_Octagonal_Shape_mpz_class_t * pph`,
`ppl_const_Octagonal_Shape_int16_t_t ph`, `int complexity`) [related]
- 10.49.2.54 `int ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape_int32_t`
(`ppl_Octagonal_Shape_mpz_class_t * pph`, `ppl_const_Octagonal_Shape_int32_t_t ph`)
[related]

- 10.49.2.55 `int ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape_int32_t_with_complexity (ppl_Octagonal_Shape_mpz_class_t * pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)` [**related**]
- 10.49.2.56 `int ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape_int64_t (ppl_Octagonal_Shape_mpz_class_t * pph, ppl_const_Octagonal_Shape_int64_t_t ph)` [**related**]
- 10.49.2.57 `int ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape_int64_t_with_complexity (ppl_Octagonal_Shape_mpz_class_t * pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)` [**related**]
- 10.49.2.58 `int ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape_int8_t (ppl_Octagonal_Shape_mpz_class_t * pph, ppl_const_Octagonal_Shape_int8_t_t ph)` [**related**]
- 10.49.2.59 `int ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape_int8_t_with_complexity (ppl_Octagonal_Shape_mpz_class_t * pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)` [**related**]
- 10.49.2.60 `int ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape_long_double (ppl_Octagonal_Shape_mpz_class_t * pph, ppl_const_Octagonal_Shape_long_double_t ph)` [**related**]
- 10.49.2.61 `int ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape_long_double_with_complexity (ppl_Octagonal_Shape_mpz_class_t * pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)` [**related**]
- 10.49.2.62 `int ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape_mpq_class (ppl_Octagonal_Shape_mpz_class_t * pph, ppl_const_Octagonal_Shape_mpq_class_t ph)` [**related**]

- 10.49.2.63** `int ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape_mpq_class_with_complexity (ppl_Octagonal_Shape_mpz_class_t * pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)` `[related]`
- 10.49.2.64** `int ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape_mpz_class (ppl_Octagonal_Shape_mpz_class_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph)` `[related]`
- 10.49.2.65** `int ppl_new_Octagonal_Shape_mpz_class_from_Octagonal_Shape_mpz_class_with_complexity (ppl_Octagonal_Shape_mpz_class_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)` `[related]`
- 10.49.2.66** `int ppl_new_Octagonal_Shape_mpz_class_from_Rational_Box (ppl_Octagonal_Shape_mpz_class_t * pph, ppl_const_Rational_Box_t ph)` `[related]`
- 10.49.2.67** `int ppl_new_Octagonal_Shape_mpz_class_from_Rational_Box_with_complexity (ppl_Octagonal_Shape_mpz_class_t * pph, ppl_const_Rational_Box_t ph, int complexity)` `[related]`
- 10.49.2.68** `int ppl_new_Octagonal_Shape_mpz_class_from_space_dimension (ppl_Octagonal_Shape_mpz_class_t * pph, ppl_dimension_type d, int empty)` `[related]`
- 10.49.2.69** `int ppl_new_Octagonal_Shape_mpz_class_from_Uint16_Box (ppl_Octagonal_Shape_mpz_class_t * pph, ppl_const_Uint16_Box_t ph)` `[related]`
- 10.49.2.70** `int ppl_new_Octagonal_Shape_mpz_class_from_Uint16_Box_with_complexity (ppl_Octagonal_Shape_mpz_class_t * pph, ppl_const_Uint16_Box_t ph, int complexity)` `[related]`

- 10.49.2.71** `int ppl_new_Octagonal_Shape_mpz_class_from_Uint32_Box`
`(ppl_Octagonal_Shape_mpz_class_t * pph, ppl_const_Uint32_Box_t ph)` `[related]`
- 10.49.2.72** `int ppl_new_Octagonal_Shape_mpz_class_from_Uint32_Box_with_complexity`
`(ppl_Octagonal_Shape_mpz_class_t * pph, ppl_const_Uint32_Box_t ph, int`
`complexity)` `[related]`
- 10.49.2.73** `int ppl_new_Octagonal_Shape_mpz_class_from_Uint64_Box`
`(ppl_Octagonal_Shape_mpz_class_t * pph, ppl_const_Uint64_Box_t ph)` `[related]`
- 10.49.2.74** `int ppl_new_Octagonal_Shape_mpz_class_from_Uint64_Box_with_complexity`
`(ppl_Octagonal_Shape_mpz_class_t * pph, ppl_const_Uint64_Box_t ph, int`
`complexity)` `[related]`
- 10.49.2.75** `int ppl_new_Octagonal_Shape_mpz_class_from_Uint8_Box`
`(ppl_Octagonal_Shape_mpz_class_t * pph, ppl_const_Uint8_Box_t ph)` `[related]`
- 10.49.2.76** `int ppl_new_Octagonal_Shape_mpz_class_from_Uint8_Box_with_complexity`
`(ppl_Octagonal_Shape_mpz_class_t * pph, ppl_const_Uint8_Box_t ph, int complexity)`
`[related]`
- 10.49.2.77** `int ppl_new_Octagonal_Shape_mpz_class_from_Z_Box` `(ppl_-`
`Octagonal_Shape_mpz_class_t * pph, ppl_const_Z_Box_t ph)`
`[related]`
- 10.49.2.78** `int ppl_new_Octagonal_Shape_mpz_class_from_Z_Box_with_complexity`
`(ppl_Octagonal_Shape_mpz_class_t * pph, ppl_const_Z_Box_t ph, int complexity)`
`[related]`

- 10.49.2.79** int ppl_new_Octagonal_Shape_mpz_class_recycle_Congruence_System
(ppl_Octagonal_Shape_mpz_class_t * *pph*, ppl_Congruence_System_t *cs*)
[related]
- 10.49.2.80** int ppl_new_Octagonal_Shape_mpz_class_recycle_Constraint_System
(ppl_Octagonal_Shape_mpz_class_t * *pph*, ppl_Constraint_System_t *cs*) [related]
- 10.49.2.81** int ppl_new_Octagonal_Shape_mpz_class_recycle_Generator_System
(ppl_Octagonal_Shape_mpz_class_t * *pph*, ppl_Generator_System_t *cs*) [related]
- 10.49.2.82** int ppl_Octagonal_Shape_mpz_class_add_congruence (ppl_
Octagonal_Shape_mpz_class_t *ph*, ppl_const_Congruence_t *c*)
[related]
- 10.49.2.83** int ppl_Octagonal_Shape_mpz_class_add_congruences (ppl_
Octagonal_Shape_mpz_class_t *ph*, ppl_const_Congruence_System_t *cs*)
[related]
- 10.49.2.84** int ppl_Octagonal_Shape_mpz_class_add_constraint (ppl_Octagonal_Shape_mpz_
class_t *ph*, ppl_const_Constraint_t *c*) [related]
- 10.49.2.85** int ppl_Octagonal_Shape_mpz_class_add_constraints (ppl_
Octagonal_Shape_mpz_class_t *ph*, ppl_const_Constraint_System_t *cs*)
[related]
- 10.49.2.86** int ppl_Octagonal_Shape_mpz_class_add_recycled_congruences
(ppl_Octagonal_Shape_mpz_class_t *ph*, ppl_Congruence_System_t *cs*) [related]
- 10.49.2.87** int ppl_Octagonal_Shape_mpz_class_add_recycled_constraints
(ppl_Octagonal_Shape_mpz_class_t *ph*, ppl_Constraint_System_t *cs*) [related]

- 10.49.2.88** `int ppl_Octagonal_Shape_mpz_class_add_space_dimensions_and_embed`
 (`ppl_Octagonal_Shape_mpz_class_t ph`, `ppl_dimension_type d`) [**related**]
- 10.49.2.89** `int ppl_Octagonal_Shape_mpz_class_add_space_dimensions_and_project`
 (`ppl_Octagonal_Shape_mpz_class_t ph`, `ppl_dimension_type d`) [**related**]
- 10.49.2.90** `int ppl_Octagonal_Shape_mpz_class_affine_dimension` (`ppl_const_-`
`Octagonal_Shape_mpz_class_t ph`, `ppl_dimension_type * m`)
 [**related**]
- 10.49.2.91** `int ppl_Octagonal_Shape_mpz_class_affine_image` (`ppl_Octagonal_Shape_mpz_class_t`
`ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [**related**]
- 10.49.2.92** `int ppl_Octagonal_Shape_mpz_class_affine_preimage` (`ppl_Octagonal_Shape_-`
`mpz_class_t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [**related**]
- 10.49.2.93** `int ppl_Octagonal_Shape_mpz_class_BHMZ05_widening_assign`
 (`ppl_Octagonal_Shape_mpz_class_t x`, `ppl_const_Octagonal_Shape_mpz_class_t y`)
 [**related**]
- 10.49.2.94** `int ppl_Octagonal_Shape_mpz_class_BHMZ05_widening_assign_with_tokens`
 (`ppl_Octagonal_Shape_mpz_class_t x`, `ppl_const_Octagonal_Shape_mpz_class_t y`,
`unsigned * tp`) [**related**]
- 10.49.2.95** `int ppl_Octagonal_Shape_mpz_class_bounded_affine_image` (`ppl_Octagonal_Shape_-`
`mpz_class_t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t lb`,
`ppl_const_Linear_Expression_t ub`, `ppl_const_Coefficient_t d`) [**related**]

- 10.49.2.96** `int ppl_Octagonal_Shape_mpz_class_bounded_affine_preimage (ppl_Octagonal_Shape_mpz_class_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [**related**]
- 10.49.2.97** `int ppl_Octagonal_Shape_mpz_class_bounds_from_above (ppl_const_Octagonal_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t le)` [**related**]
- 10.49.2.98** `int ppl_Octagonal_Shape_mpz_class_bounds_from_below (ppl_const_Octagonal_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t le)` [**related**]
- 10.49.2.99** `int ppl_Octagonal_Shape_mpz_class_CC76_extrapolation_assign (ppl_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y)` [**related**]
- 10.49.2.100** `int ppl_Octagonal_Shape_mpz_class_CC76_extrapolation_assign_with_tokens (ppl_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y, unsigned * tp)` [**related**]
- 10.49.2.101** `int ppl_Octagonal_Shape_mpz_class_CC76_narrowing_assign (ppl_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y)` [**related**]
- 10.49.2.102** `int ppl_Octagonal_Shape_mpz_class_concatenate_assign (ppl_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y)` [**related**]
- 10.49.2.103** `int ppl_Octagonal_Shape_mpz_class_constrains (ppl_Octagonal_Shape_mpz_class_t ph, ppl_dimension_type var)` [**related**]

- 10.49.2.104 `int ppl_Octagonal_Shape_mpz_class_contains_integer_point`
(`ppl_const_Octagonal_Shape_mpz_class_t ph`) [`related`]
- 10.49.2.105 `int ppl_Octagonal_Shape_mpz_class_contains_Octagonal_Shape_mpz_class` (`ppl_-`
`const_Octagonal_Shape_mpz_class_t x`, `ppl_const_Octagonal_Shape_mpz_class_t y`)
[`related`]
- 10.49.2.106 `int ppl_Octagonal_Shape_mpz_class_difference_assign` (`ppl_Octagonal_-`
`Shape_mpz_class_t x`, `ppl_const_Octagonal_Shape_mpz_class_t y`)
[`related`]
- 10.49.2.107 `int ppl_Octagonal_Shape_mpz_class_drop_some_non_integer_points`
(`ppl_Octagonal_Shape_mpz_class_t ph`, `int complexity`) [`related`]
- 10.49.2.108 `int ppl_Octagonal_Shape_mpz_class_drop_some_non_integer_points_2`
(`ppl_Octagonal_Shape_mpz_class_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`, `int`
`complexity`) [`related`]
- 10.49.2.109 `int ppl_Octagonal_Shape_mpz_class_equals_Octagonal_Shape_mpz_class` (`ppl_-`
`const_Octagonal_Shape_mpz_class_t x`, `ppl_const_Octagonal_Shape_mpz_class_t y`)
[`related`]
- 10.49.2.110 `int ppl_Octagonal_Shape_mpz_class_expand_space_dimension`
(`ppl_Octagonal_Shape_mpz_class_t ph`, `ppl_dimension_type d`, `ppl_dimension_type`
`m`) [`related`]
- 10.49.2.111 `int ppl_Octagonal_Shape_mpz_class_external_memory_in_bytes`
(`ppl_const_Octagonal_Shape_mpz_class_t ps`, `size_t * sz`) [`related`]

- 10.49.2.112 `int ppl_Octagonal_Shape_mpz_class_fold_space_dimensions (ppl_Octagonal_Shape_mpz_class_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [related]
- 10.49.2.113 `int ppl_Octagonal_Shape_mpz_class_frequency (ppl_const_Octagonal_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)` [related]
- 10.49.2.114 `int ppl_Octagonal_Shape_mpz_class_generalized_affine_image (ppl_Octagonal_Shape_mpz_class_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [related]
- 10.49.2.115 `int ppl_Octagonal_Shape_mpz_class_generalized_affine_image_lhs_rhs (ppl_Octagonal_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t rhs)` [related]
- 10.49.2.116 `int ppl_Octagonal_Shape_mpz_class_generalized_affine_preimage (ppl_Octagonal_Shape_mpz_class_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [related]
- 10.49.2.117 `int ppl_Octagonal_Shape_mpz_class_generalized_affine_preimage_lhs_rhs (ppl_Octagonal_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t rhs)` [related]
- 10.49.2.118 `int ppl_Octagonal_Shape_mpz_class_get_congruences (ppl_const_Octagonal_Shape_mpz_class_t ph, ppl_const_Congruence_System_t * pcs)` [related]

- 10.49.2.119 `int ppl_Octagonal_Shape_mpz_class_get_constraints (ppl_const_Octagonal_Shape_mpz_class_t ph, ppl_const_Constraint_System_t * pcs)` `[related]`
- 10.49.2.120 `int ppl_Octagonal_Shape_mpz_class_get_minimized_congruences (ppl_const_Octagonal_Shape_mpz_class_t ph, ppl_const_Congruence_System_t * pcs)` `[related]`
- 10.49.2.121 `int ppl_Octagonal_Shape_mpz_class_get_minimized_constraints (ppl_const_Octagonal_Shape_mpz_class_t ph, ppl_const_Constraint_System_t * pcs)` `[related]`
- 10.49.2.122 `int ppl_Octagonal_Shape_mpz_class_intersection_assign (ppl_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y)` `[related]`
- 10.49.2.123 `int ppl_Octagonal_Shape_mpz_class_is_bounded (ppl_const_Octagonal_Shape_mpz_class_t ph)` `[related]`
- 10.49.2.124 `int ppl_Octagonal_Shape_mpz_class_is_discrete (ppl_const_Octagonal_Shape_mpz_class_t ph)` `[related]`
- 10.49.2.125 `int ppl_Octagonal_Shape_mpz_class_is_disjoint_from_Octagonal_Shape_mpz_class (ppl_const_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y)` `[related]`
- 10.49.2.126 `int ppl_Octagonal_Shape_mpz_class_is_empty (ppl_const_Octagonal_Shape_mpz_class_t ph)` `[related]`

- 10.49.2.127** `int ppl_Octagonal_Shape_mpz_class_is_topologically_closed`
`(ppl_const_Octagonal_Shape_mpz_class_t ph)` [**related**]
- 10.49.2.128** `int ppl_Octagonal_Shape_mpz_class_is_universe` (`ppl_const_Octagonal_Shape_mpz_class_t ph`) [**related**]
- 10.49.2.129** `int ppl_Octagonal_Shape_mpz_class_limited_BHMZ05_extrapolation_assign`
`(ppl_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y,
ppl_const_Constraint_System_t cs) [related]`
- 10.49.2.130** `int ppl_Octagonal_Shape_mpz_class_limited_BHMZ05_extrapolation_-`
`assign_with_tokens` (`ppl_Octagonal_Shape_mpz_class_t x,
ppl_const_Octagonal_Shape_mpz_class_t y, ppl_const_Constraint_System_t cs,
unsigned * tp) [related]`
- 10.49.2.131** `int ppl_Octagonal_Shape_mpz_class_limited_CC76_extrapolation_assign`
`(ppl_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y,
ppl_const_Constraint_System_t cs) [related]`
- 10.49.2.132** `int ppl_Octagonal_Shape_mpz_class_limited_CC76_extrapolation_-`
`assign_with_tokens` (`ppl_Octagonal_Shape_mpz_class_t x,
ppl_const_Octagonal_Shape_mpz_class_t y, ppl_const_Constraint_System_t cs,
unsigned * tp) [related]`
- 10.49.2.133** `int ppl_Octagonal_Shape_mpz_class_linear_partition` (`ppl_const_Octagonal_-`
`Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y,
ppl_Octagonal_Shape_mpz_class_t * p_inters, ppl_Pointset_Powerset_NNC_-
Polyhedron_t * p_rest) [related]`
- 10.49.2.134** `int ppl_Octagonal_Shape_mpz_class_map_space_dimensions`
`(ppl_Octagonal_Shape_mpz_class_t ph, ppl_dimension_type maps[], size_t n)`
[related]

- 10.49.2.135 `int ppl_Octagonal_Shape_mpz_class_maximize (ppl_const_Octagonal_Shape -
mpz_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n,
ppl_Coefficient_t ext_d, int *poptimum)` [related]
- 10.49.2.136 `int ppl_Octagonal_Shape_mpz_class_maximize_with_point (ppl_const_Octagonal -
Shape_mpz_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n,
ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` [related]
- 10.49.2.137 `int ppl_Octagonal_Shape_mpz_class_minimize (ppl_const_Octagonal_Shape -
mpz_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n,
ppl_Coefficient_t ext_d, int *poptimum)` [related]
- 10.49.2.138 `int ppl_Octagonal_Shape_mpz_class_minimize_with_point (ppl_const_Octagonal -
Shape_mpz_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n,
ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` [related]
- 10.49.2.139 `int ppl_Octagonal_Shape_mpz_class_OK (ppl_const_Octagonal_Shape_mpz_class_t
ph)` [related]
- 10.49.2.140 `int ppl_Octagonal_Shape_mpz_class_refine_with_congruence
(ppl_Octagonal_Shape_mpz_class_t ph, ppl_const_Congruence_t c)` [related]
- 10.49.2.141 `int ppl_Octagonal_Shape_mpz_class_refine_with_congruences
(ppl_Octagonal_Shape_mpz_class_t ph, ppl_const_Congruence_System_t cs)`
[related]
- 10.49.2.142 `int ppl_Octagonal_Shape_mpz_class_refine_with_constraint
(ppl_Octagonal_Shape_mpz_class_t ph, ppl_const_Constraint_t c)` [related]

- 10.49.2.143 `int ppl_Octagonal_Shape_mpz_class_refine_with_constraints`
(`ppl_Octagonal_Shape_mpz_class_t` *ph*, `ppl_const_Constraint_System_t` *cs*)
[related]
- 10.49.2.144 `int ppl_Octagonal_Shape_mpz_class_relation_with_Congruence`
(`ppl_const_Octagonal_Shape_mpz_class_t` *ph*, `ppl_const_Congruence_t` *c*)
[related]
- 10.49.2.145 `int ppl_Octagonal_Shape_mpz_class_relation_with_Constraint`
(`ppl_const_Octagonal_Shape_mpz_class_t` *ph*, `ppl_const_Constraint_t` *c*)
[related]
- 10.49.2.146 `int ppl_Octagonal_Shape_mpz_class_relation_with_Generator`
(`ppl_const_Octagonal_Shape_mpz_class_t` *ph*, `ppl_const_Generator_t` *c*)
[related]
- 10.49.2.147 `int ppl_Octagonal_Shape_mpz_class_remove_higher_space_dimensions`
(`ppl_Octagonal_Shape_mpz_class_t` *ph*, `ppl_dimension_type` *d*) [related]
- 10.49.2.148 `int ppl_Octagonal_Shape_mpz_class_remove_space_dimensions`
(`ppl_Octagonal_Shape_mpz_class_t` *ph*, `ppl_dimension_type` *ds*[], `size_t` *n*)
[related]
- 10.49.2.149 `int ppl_Octagonal_Shape_mpz_class_simplify_using_context_assign`
(`ppl_Octagonal_Shape_mpz_class_t` *x*, `ppl_const_Octagonal_Shape_mpz_class_t` *y*)
[related]
- 10.49.2.150 `int ppl_Octagonal_Shape_mpz_class_space_dimension` (`ppl_const_Octagonal_Shape_mpz_class_t` *ph*, `ppl_dimension_type` * *m*)
[related]

- 10.49.2.151** `int ppl_Octagonal_Shape_mpz_class_strictly_contains_Octagonal_Shape_mpz_class (ppl_const_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y) [related]`
- 10.49.2.152** `int ppl_Octagonal_Shape_mpz_class_time_elapse_assign (ppl_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y) [related]`
- 10.49.2.153** `int ppl_Octagonal_Shape_mpz_class_topological_closure_assign (ppl_Octagonal_Shape_mpz_class_t ph) [related]`
- 10.49.2.154** `int ppl_Octagonal_Shape_mpz_class_total_memory_in_bytes (ppl_const_Octagonal_Shape_mpz_class_t ps, size_t * sz) [related]`
- 10.49.2.155** `int ppl_Octagonal_Shape_mpz_class_unconstrain_space_dimension (ppl_Octagonal_Shape_mpz_class_t ph, ppl_dimension_type var) [related]`
- 10.49.2.156** `int ppl_Octagonal_Shape_mpz_class_unconstrain_space_dimensions (ppl_Octagonal_Shape_mpz_class_t ph, ppl_dimension_type ds[], size_t n) [related]`
- 10.49.2.157** `int ppl_Octagonal_Shape_mpz_class_upper_bound_assign (ppl_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y) [related]`
- 10.49.2.158** `int ppl_Octagonal_Shape_mpz_class_upper_bound_assign_if_exact (ppl_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y) [related]`

- 10.49.2.159** `int ppl_Octagonal_Shape_mpz_class_widening_assign (ppl_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y)`
[related]
- 10.49.2.160** `int ppl_Octagonal_Shape_mpz_class_widening_assign_with_tokens (ppl_Octagonal_Shape_mpz_class_t x, ppl_const_Octagonal_Shape_mpz_class_t y, unsigned *tp)` [related]
- 10.49.2.161** `int ppl_Octagonal_Shape_mpz_class_wrap_assign (ppl_Octagonal_Shape_mpz_class_t ph, ppl_dimension_type ds[], size_t n, enum ppl_enum_Bounded_Integer_Type_Width w, enum ppl_enum_Bounded_Integer_Type_Representation r, enum ppl_enum_Bounded_Integer_Type_Overflow o, const ppl_const_Constraint_System_t *pcs, unsigned complexity_threshold, int wrap_individually)` [related]
- 10.49.2.162** `int ppl_one_affine_ranking_function_MS_Octagonal_Shape_mpz_class (ppl_const_Octagonal_Shape_mpz_class_t pset, ppl_Generator_t point)`
[related]
- 10.49.2.163** `int ppl_one_affine_ranking_function_MS_Octagonal_Shape_mpz_class_2 (ppl_const_Octagonal_Shape_mpz_class_t pset_before, ppl_const_Octagonal_Shape_mpz_class_t pset_after, ppl_Generator_t point)`
[related]
- 10.49.2.164** `int ppl_one_affine_ranking_function_PR_Octagonal_Shape_mpz_class (ppl_const_Octagonal_Shape_mpz_class_t pset, ppl_Generator_t point)`
[related]
- 10.49.2.165** `int ppl_one_affine_ranking_function_PR_Octagonal_Shape_mpz_class_2 (ppl_const_Octagonal_Shape_mpz_class_t pset_before, ppl_const_Octagonal_Shape_mpz_class_t pset_after, ppl_Generator_t point)`
[related]

- 10.49.2.166** `int ppl_termination_test_MS_Octagonal_Shape_mpz_class`
`(ppl_const_Octagonal_Shape_mpz_class_t pset)` [**related**]
- 10.49.2.167** `int ppl_termination_test_MS_Octagonal_Shape_mpz_class_2` (`ppl_const_Octagonal_Shape_mpz_class_t pset_before`, `ppl_const_Octagonal_Shape_mpz_class_t pset_after`)
[related]
- 10.49.2.168** `int ppl_termination_test_PR_Octagonal_Shape_mpz_class`
`(ppl_const_Octagonal_Shape_mpz_class_t pset)` [**related**]
- 10.49.2.169** `int ppl_termination_test_PR_Octagonal_Shape_mpz_class_2` (`ppl_const_Octagonal_Shape_mpz_class_t pset_before`, `ppl_const_Octagonal_Shape_mpz_class_t pset_after`)
[related]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.50 ppl_PIP_Decision_Node_tag Interface Reference

Types and functions for PIP decision nodes.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_PIP_Decision_Node_get_child_node` (`ppl_const_PIP_Decision_Node_t pip_dec`, `int b`, `ppl_const_PIP_Tree_Node_t *pip_tree`)

Writes to `pip_tree` a const pointer to either the true branch (if `b` is not zero) or the false branch (if `b` is zero) of `pip_dec`.

10.50.1 Detailed Description

Types and functions for PIP decision nodes. The types and functions for decision nodes provide an interface towards *PIP_Decision_Node*.

10.50.2 Friends And Related Function Documentation

10.50.2.1 int ppl_PIP_Decision_Node_get_child_node (ppl_const_PIP_Decision_Node_t *pip_dec*, int *b*, ppl_const_PIP_Tree_Node_t **pip_tree*) [related]

Writes to `pip_tree` a const pointer to either the true branch (if `b` is not zero) or the false branch (if `b` is zero) of `pip_dec`.

Definition at line 2468 of file `ppl_c_implementation_common.cc`.

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.51 ppl_PIP_Problem_tag Interface Reference

Types and functions for PIP problems.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

Symbolic Constants

- int [PPL_PIP_PROBLEM_STATUS_UNFEASIBLE](#)
Code of the "unfeasible PIP problem" status.
- int [PPL_PIP_PROBLEM_STATUS_OPTIMIZED](#)
Code of the "optimized PIP problem" status.
- int [PPL_PIP_PROBLEM_CONTROL_PARAMETER_NAME_CUTTING_STRATEGY](#)
Code for the PIP problem's "cutting strategy" control parameter name.
- int [PPL_PIP_PROBLEM_CONTROL_PARAMETER_NAME_PIVOT_ROW_STRATEGY](#)
Code for the PIP problem's "pivot row strategy" control parameter name.
- int [PPL_PIP_PROBLEM_CONTROL_PARAMETER_CUTTING_STRATEGY_FIRST](#)
Code of PIP problem's "first" cutting strategy.
- int [PPL_PIP_PROBLEM_CONTROL_PARAMETER_CUTTING_STRATEGY_DEEPEST](#)
Code of PIP problem's "deepest" cutting strategy.
- int [PPL_PIP_PROBLEM_CONTROL_PARAMETER_CUTTING_STRATEGY_ALL](#)
Code of PIP problem's "all" cutting strategy.
- int [PPL_PIP_PROBLEM_CONTROL_PARAMETER_PIVOT_ROW_STRATEGY_FIRST](#)
Code of PIP problem's "first" pivot row strategy.
- int [PPL_PIP_PROBLEM_CONTROL_PARAMETER_PIVOT_ROW_STRATEGY_MAX_COLUMN](#)
Code of PIP problem's "max column" pivot row strategy.

Constructors, Assignment and Destructor

- `int ppl_new_PIP_Problem_from_space_dimension` (`ppl_PIP_Problem_t *ppip`, `ppl_dimension_type d`)
Builds a trivial PIP problem of dimension d and writes a handle to it at address $ppip$.
- `int ppl_new_PIP_Problem_from_PIP_Problem` (`ppl_PIP_Problem_t *ppip`, `ppl_const_PIP_Problem_t pip`)
Builds a PIP problem that is a copy of pip ; writes a handle for the newly created problem at address $ppip$.
- `int ppl_assign_PIP_Problem_from_PIP_Problem` (`ppl_PIP_Problem_t dst`, `ppl_const_PIP_Problem_t src`)
Assigns a copy of the PIP problem src to dst .
- `int ppl_new_PIP_Problem_from_constraints` (`ppl_PIP_Problem_t *ppip`, `ppl_dimension_type d`, `ppl_Constraint_System_const_iterator_t first`, `ppl_Constraint_System_const_iterator_t last`, `size_t n`, `ppl_dimension_type ds[]`)
Builds a PIP problem having space dimension d from the sequence of constraints in the range $[first, last)$; the n dimensions whose indices occur in ds are interpreted as parameters.
- `int ppl_delete_PIP_Problem` (`ppl_const_PIP_Problem_t pip`)
Invalidates the handle pip : this makes sure the corresponding resources will eventually be released.

Functions that Do Not Modify the PIP_Problem

- `int ppl_PIP_Problem_space_dimension` (`ppl_const_PIP_Problem_t pip`, `ppl_dimension_type *m`)
Writes to m the dimension of the vector space enclosing pip .
- `int ppl_PIP_Problem_number_of_parameter_space_dimensions` (`ppl_const_PIP_Problem_t pip`, `ppl_dimension_type *m`)
Writes to m the number of parameter space dimensions of pip .
- `int ppl_PIP_Problem_parameter_space_dimensions` (`ppl_const_PIP_Problem_t pip`, `ppl_dimension_type ds[]`)
Writes in the first positions of the array ds all the parameter space dimensions of problem pip . If the array is not big enough to hold all of the parameter space dimensions, the behavior is undefined.
- `int ppl_PIP_Problem_get_big_parameter_dimension` (`ppl_const_PIP_Problem_t pip`, `ppl_dimension_type *pd`)
Writes into $*pd$ the big parameter dimension of PIP problem pip .
- `int ppl_PIP_Problem_number_of_constraints` (`ppl_const_PIP_Problem_t pip`, `ppl_dimension_type *m`)
Writes to m the number of constraints defining the feasible region of pip .
- `int ppl_PIP_Problem_constraint_at_index` (`ppl_const_PIP_Problem_t pip`, `ppl_dimension_type i`, `ppl_const_Constraint_t *pc`)
Writes at address pc a const handle to the i -th constraint defining the feasible region of the PIP problem pip .

- `int ppl_PIP_Problem_total_memory_in_bytes` (`ppl_const_PIP_Problem_t pip`, `size_t *sz`)
Writes into `*sz` the size in bytes of the memory occupied by `pip`.
- `int ppl_PIP_Problem_external_memory_in_bytes` (`ppl_const_PIP_Problem_t pip`, `size_t *sz`)
Writes into `*sz` the size in bytes of the memory managed by `pip`.
- `int ppl_PIP_Problem_OK` (`ppl_const_PIP_Problem_t pip`)
Returns a positive integer if `pip` is well formed, i.e., if it satisfies all its implementation invariants; returns 0 and perhaps makes some noise if `pip` is broken. Useful for debugging purposes.

Functions that May Modify the PIP_Problem

- `int ppl_PIP_Problem_clear` (`ppl_PIP_Problem_t pip`)
Resets the PIP problem to be a trivial problem of space dimension 0.
- `int ppl_PIP_Problem_add_space_dimensions_and_embed` (`ppl_PIP_Problem_t pip`, `ppl_dimension_type pip_vars`, `ppl_dimension_type pip_params`)
Adds `pip_vars + pip_params` new space dimensions and embeds the PIP problem `pip` in the new vector space.
- `int ppl_PIP_Problem_add_to_parameter_space_dimensions` (`ppl_PIP_Problem_t pip`, `ppl_dimension_type ds[]`, `size_t n`)
Sets the space dimensions that are specified in first `n` positions of the array `ds` to be parameter dimensions of problem `pip`. The presence of duplicates in `ds` is a waste but an innocuous one.
- `int ppl_PIP_Problem_set_big_parameter_dimension` (`ppl_PIP_Problem_t pip`, `ppl_dimension_type d`)
Sets the big parameter dimension of PIP problem `pip` to `d`.
- `int ppl_PIP_Problem_add_constraint` (`ppl_PIP_Problem_t pip`, `ppl_const_Constraint_t c`)
Modifies the feasible region of the PIP problem `pip` by adding a copy of the constraint `c`.
- `int ppl_PIP_Problem_add_constraints` (`ppl_PIP_Problem_t pip`, `ppl_const_Constraint_System_t cs`)
Modifies the feasible region of the PIP problem `pip` by adding a copy of the constraints in `cs`.

Computing and Printing the Solution of the PIP_Problem

- `int ppl_PIP_Problem_is_satisfiable` (`ppl_const_PIP_Problem_t pip`)
Returns a positive integer if `pip` is satisfiable and an optimal solution can be found; returns 0 otherwise.
- `int ppl_PIP_Problem_solve` (`ppl_const_PIP_Problem_t pip`)
Solves the PIP problem `pip`, returning an exit status.
- `int ppl_PIP_Problem_solution` (`ppl_const_PIP_Problem_t pip`, `ppl_const_PIP_Tree_Node_t *pip_tree`)
Writes to `pip_tree` a solution for `pip`, if it exists.
- `int ppl_PIP_Problem_optimizing_solution` (`ppl_const_PIP_Problem_t pip`, `ppl_const_PIP_Tree_Node_t *pip_tree`)
Writes to `pip_tree` an optimizing solution for `pip`, if it exists.

Querying/Setting Control Parameters

- int `ppl_PIP_Problem_get_control_parameter` (`ppl_const_PIP_Problem_t` pip, int name)
Returns the value of control parameter name in problem pip.
- int `ppl_PIP_Problem_set_control_parameter` (`ppl_PIP_Problem_t` pip, int value)
Sets control parameter value in problem pip.

10.51.1 Detailed Description

Types and functions for PIP problems. The types and functions for PIP problems provide an interface towards *PIP_Problem*.

10.51.2 Friends And Related Function Documentation

10.51.2.1 int `ppl_assign_PIP_Problem_from_PIP_Problem` (`ppl_PIP_Problem_t` dst, `ppl_const_PIP_Problem_t` src) [**related**]

Assigns a copy of the PIP problem src to dst.

Definition at line 2180 of file `ppl_c_implementation_common.cc`.

10.51.2.2 int `ppl_delete_PIP_Problem` (`ppl_const_PIP_Problem_t` pip) [**related**]

Invalidates the handle pip: this makes sure the corresponding resources will eventually be released.

Definition at line 2190 of file `ppl_c_implementation_common.cc`.

10.51.2.3 int `ppl_new_PIP_Problem_from_constraints` (`ppl_PIP_Problem_t` * ppip, `ppl_dimension_type` d, `ppl_Constraint_System_const_iterator_t` first, `ppl_Constraint_System_const_iterator_t` last, `size_t` n, `ppl_dimension_type` ds[]) [**related**]

Builds a PIP problem having space dimension d from the sequence of constraints in the range [first, last); the n dimensions whose indices occur in ds are interpreted as parameters.

Definition at line 2164 of file `ppl_c_implementation_common.cc`.

10.51.2.4 int `ppl_new_PIP_Problem_from_PIP_Problem` (`ppl_PIP_Problem_t` * ppip, `ppl_const_PIP_Problem_t` pip) [**related**]

Builds a PIP problem that is a copy of pip; writes a handle for the newly created problem at address ppip.

Definition at line 2154 of file `ppl_c_implementation_common.cc`.

10.51.2.5 `int ppl_new_PIP_Problem_from_space_dimension (ppl_PIP_Problem_t * ppip,
ppl_dimension_type d)` [**related**]

Builds a trivial PIP problem of dimension *d* and writes a handle to it at address *ppip*.

Definition at line 2146 of file `ppl_c_implementation_common.cc`.

10.51.2.6 `int ppl_PIP_Problem_add_constraint (ppl_PIP_Problem_t pip, ppl_const_Constraint_t
c)` [**related**]

Modifies the feasible region of the PIP problem *pip* by adding a copy of the constraint *c*.

Definition at line 2278 of file `ppl_c_implementation_common.cc`.

10.51.2.7 `int ppl_PIP_Problem_add_constraints (ppl_PIP_Problem_t pip,
ppl_const_Constraint_System_t cs)` [**related**]

Modifies the feasible region of the PIP problem *pip* by adding a copy of the constraints in *cs*.

Definition at line 2288 of file `ppl_c_implementation_common.cc`.

10.51.2.8 `int ppl_PIP_Problem_add_space_dimensions_and_embed (ppl_PIP_Problem_t pip,
ppl_dimension_type pip_vars, ppl_dimension_type pip_params)` [**related**]

Adds *pip_vars* + *pip_params* new space dimensions and embeds the PIP problem *pip* in the new vector space.

Parameters

pip The PIP problem to be embedded in the new vector space.

pip_vars The number of space dimensions to add that are interpreted as PIP problem variables (i.e., non parameters). These are added *before* adding the *pip_params* parameters.

pip_params The number of space dimensions to add that are interpreted as PIP problem parameters. These are added *after* having added the *pip_vars* problem variables.

The new space dimensions will be those having the highest indexes in the new PIP problem; they are initially unconstrained.

Definition at line 2256 of file `ppl_c_implementation_common.cc`.

10.51.2.9 `int ppl_PIP_Problem_add_to_parameter_space_dimensions (ppl_PIP_Problem_t pip,
ppl_dimension_type ds[], size_t n)` [**related**]

Sets the space dimensions that are specified in first *n* positions of the array *ds* to be parameter dimensions of problem *pip*. The presence of duplicates in *ds* is a waste but an innocuous one.

Definition at line 2266 of file `ppl_c_implementation_common.cc`.

10.51.2.10 `int ppl_PIP_Problem_clear (ppl_PIP_Problem_t pip)` [**related**]

Resets the PIP problem to be a trivial problem of space dimension 0.

Definition at line 2250 of file `ppl_c_implementation_common.cc`.

10.51.2.11 `int ppl_PIP_Problem_constraint_at_index (ppl_const_PIP_Problem_t pip, ppl_dimension_type i, ppl_const_Constraint_t * pc)` [**related**]

Writes at address `pc` a const handle to the `i`-th constraint defining the feasible region of the PIP problem `pip`.

Definition at line 2235 of file `ppl_c_implementation_common.cc`.

10.51.2.12 `int PPL_PIP_PROBLEM_CONTROL_PARAMETER_CUTTING_STRATEGY_ALL` [**related**]

Code of PIP problem's "all" cutting strategy.

Definition at line 2523 of file `ppl_c.h`.

10.51.2.13 `int PPL_PIP_PROBLEM_CONTROL_PARAMETER_CUTTING_STRATEGY_- DEEPEST` [**related**]

Code of PIP problem's "deepest" cutting strategy.

Definition at line 2518 of file `ppl_c.h`.

10.51.2.14 `int PPL_PIP_PROBLEM_CONTROL_PARAMETER_CUTTING_STRATEGY_- FIRST` [**related**]

Code of PIP problem's "first" cutting strategy.

Definition at line 2513 of file `ppl_c.h`.

10.51.2.15 `int PPL_PIP_PROBLEM_CONTROL_PARAMETER_NAME_CUTTING_- STRATEGY` [**related**]

Code for the PIP problem's "cutting strategy" control parameter name.

Definition at line 2503 of file `ppl_c.h`.

10.51.2.16 `int PPL_PIP_PROBLEM_CONTROL_PARAMETER_NAME_PIVOT_ROW_STRATEGY` [related]

Code for the PIP problem's "pivot row strategy" control parameter name.

Definition at line 2508 of file `ppl_c.h`.

10.51.2.17 `int PPL_PIP_PROBLEM_CONTROL_PARAMETER_PIVOT_ROW_STRATEGY_FIRST` [related]

Code of PIP problem's "first" pivot row strategy.

Definition at line 2528 of file `ppl_c.h`.

10.51.2.18 `int PPL_PIP_PROBLEM_CONTROL_PARAMETER_PIVOT_ROW_STRATEGY_MAX_COLUMN` [related]

Code of PIP problem's "max column" pivot row strategy.

Definition at line 2533 of file `ppl_c.h`.

10.51.2.19 `int ppl_PIP_Problem_external_memory_in_bytes (ppl_const_PIP_Problem_t pip, size_t * sz)` [related]

Writes into `*sz` the size in bytes of the memory managed by `pip`.

Definition at line 2373 of file `ppl_c_implementation_common.cc`.

10.51.2.20 `int ppl_PIP_Problem_get_big_parameter_dimension (ppl_const_PIP_Problem_t pip, ppl_dimension_type * pd)` [related]

Writes into `*pd` the big parameter dimension of PIP problem `pip`.

Definition at line 2349 of file `ppl_c_implementation_common.cc`.

10.51.2.21 `int ppl_PIP_Problem_get_control_parameter (ppl_const_PIP_Problem_t pip, int name)` [related]

Returns the value of control parameter `name` in problem `pip`.

Definition at line 2330 of file `ppl_c_implementation_common.cc`.

10.51.2.22 `int ppl_PIP_Problem_is_satisfiable (ppl_const_PIP_Problem_t pip)` **[related]**

Returns a positive integer if `pip` is satisfiable and an optimal solution can be found; returns 0 otherwise.

Definition at line 2297 of file `ppl_c_implementation_common.cc`.

10.51.2.23 `int ppl_PIP_Problem_number_of_constraints (ppl_const_PIP_Problem_t pip, ppl_dimension_type * m)` **[related]**

Writes to `m` the number of constraints defining the feasible region of `pip`.

Definition at line 2226 of file `ppl_c_implementation_common.cc`.

Referenced by `ppl_PIP_Problem_constraint_at_index()`.

10.51.2.24 `int ppl_PIP_Problem_number_of_parameter_space_dimensions (ppl_const_PIP_Problem_t pip, ppl_dimension_type * m)` **[related]**

Writes to `m` the number of parameter space dimensions of `pip`.

Definition at line 2206 of file `ppl_c_implementation_common.cc`.

10.51.2.25 `int ppl_PIP_Problem_OK (ppl_const_PIP_Problem_t pip)` **[related]**

Returns a positive integer if `pip` is well formed, i.e., if it satisfies all its implementation invariants; returns 0 and perhaps makes some noise if `pip` is broken. Useful for debugging purposes.

Definition at line 2324 of file `ppl_c_implementation_common.cc`.

10.51.2.26 `int ppl_PIP_Problem_optimizing_solution (ppl_const_PIP_Problem_t pip, ppl_const_PIP_Tree_Node_t * pip_tree)` **[related]**

Writes to `pip_tree` an optimizing solution for `pip`, if it exists.

Definition at line 2316 of file `ppl_c_implementation_common.cc`.

10.51.2.27 `int ppl_PIP_Problem_parameter_space_dimensions (ppl_const_PIP_Problem_t pip, ppl_dimension_type ds[])` **[related]**

Writes in the first positions of the array `ds` all the parameter space dimensions of problem `pip`. If the array is not big enough to hold all of the parameter space dimensions, the behavior is undefined.

Definition at line 2214 of file `ppl_c_implementation_common.cc`.

10.51.2.28 `int ppl_PIP_Problem_set_big_parameter_dimension (ppl_PIP_Problem_t pip,
ppl_dimension_type d)` [**related**]

Sets the big parameter dimension of PIP problem *pip* to *d*.

Definition at line 2357 of file `ppl_c_implementation_common.cc`.

10.51.2.29 `int ppl_PIP_Problem_set_control_parameter (ppl_PIP_Problem_t pip, int value)`
[**related**]

Sets control parameter *value* in problem *pip*.

Definition at line 2339 of file `ppl_c_implementation_common.cc`.

10.51.2.30 `int ppl_PIP_Problem_solution (ppl_const_PIP_Problem_t pip,
ppl_const_PIP_Tree_Node_t *pip_tree)` [**related**]

Writes to *pip_tree* a solution for *pip*, if it exists.

Definition at line 2308 of file `ppl_c_implementation_common.cc`.

10.51.2.31 `int ppl_PIP_Problem_solve (ppl_const_PIP_Problem_t pip)` [**related**]

Solves the PIP problem *pip*, returning an exit status.

Returns

`PPL_PIP_PROBLEM_STATUS_UNFEASIBLE` if the PIP problem is not satisfiable; `PPL_PIP_PROBLEM_STATUS_OPTIMIZED` if the PIP problem admits an optimal solution.

Definition at line 2302 of file `ppl_c_implementation_common.cc`.

10.51.2.32 `int ppl_PIP_Problem_space_dimension (ppl_const_PIP_Problem_t pip,
ppl_dimension_type *m)` [**related**]

Writes to *m* the dimension of the vector space enclosing *pip*.

The vector space dimensions includes both the problem variables and the problem parameters, but they do not include the artificial parameters.

Definition at line 2197 of file `ppl_c_implementation_common.cc`.

10.51.2.33 `int PPL_PIP_PROBLEM_STATUS_OPTIMIZED` [**related**]

Code of the "optimized PIP problem" status.

Definition at line 2498 of file `ppl_c.h`.

10.51.2.34 `int PPL_PIP_PROBLEM_STATUS_UNFEASIBLE` [related]

Code of the "unfeasible PIP problem" status.

Definition at line 2493 of file `ppl_c.h`.

10.51.2.35 `int ppl_PIP_Problem_total_memory_in_bytes (ppl_const_PIP_Problem_t pip, size_t * sz)` [related]

Writes into `*sz` the size in bytes of the memory occupied by `pip`.

Definition at line 2365 of file `ppl_c_implementation_common.cc`.

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.52 `ppl_PIP_Solution_Node_tag` Interface Reference

Types and functions for PIP solution nodes.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- [int ppl_PIP_Solution_Node_get_parametric_values](#) (`ppl_const_PIP_Solution_Node_t pip_sol`, [ppl_dimension_type](#) `var`, `ppl_const_Linear_Expression_t *le`)

Writes to `le` a const pointer to the parametric expression of the values of variable `var` in solution node `pip_sol`.

10.52.1 Detailed Description

Types and functions for PIP solution nodes. The types and functions for solution nodes provide an interface towards *PIP_Solution_Node*.

10.52.2 Friends And Related Function Documentation

10.52.2.1 `int ppl_PIP_Solution_Node_get_parametric_values (ppl_const_PIP_Solution_Node_t pip_sol, ppl_dimension_type var, ppl_const_Linear_Expression_t *le)` [related]

Writes to `le` a const pointer to the parametric expression of the values of variable `var` in solution node `pip_sol`.

The linear expression assigned to `le` will only refer to (problem or artificial) parameters.

Parameters

- pip_sol* The solution tree node.
- var* The variable which is queried about.
- le* The returned expression for variable `var`.

Returns

PPL_ERROR_INVALID_ARGUMENT Returned if `var` is dimension-incompatible with `*this` or if `var` is a problem parameter.

Definition at line 2445 of file `ppl_c_implementation_common.cc`.

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.53 ppl_PIP_Tree_Node_tag Interface Reference

Types and functions for generic PIP tree nodes.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- int [ppl_PIP_Tree_Node_as_solution](#) (ppl_const_PIP_Tree_Node_t `spip_tree`, ppl_const_PIP_Solution_Node_t `*dip_tree`)
Writes to `dip_tree` the solution node if `spip_tree` is a solution node, and 0 otherwise.
- int [ppl_PIP_Tree_Node_as_decision](#) (ppl_const_PIP_Tree_Node_t `spip_tree`, ppl_const_PIP_Decision_Node_t `*dip_tree`)
Writes to `dip_tree` the decision node if `spip_tree` is a decision node, and 0 otherwise.
- int [ppl_PIP_Tree_Node_get_constraints](#) (ppl_const_PIP_Tree_Node_t `pip_tree`, ppl_const_Constraint_System_t `*pcs`)
Writes to `pcs` the local system of parameter constraints at the pip tree node `pip_tree`.
- int [ppl_PIP_Tree_Node_OK](#) (ppl_const_PIP_Tree_Node_t `pip`)
Returns a positive integer if `pip_tree` is well formed, i.e., if it satisfies all its implementation invariants; returns 0 and perhaps makes some noise if `pip_tree` is broken. Useful for debugging purposes.
- int [ppl_PIP_Tree_Node_number_of_artificials](#) (ppl_const_PIP_Tree_Node_t `pip_tree`, ppl_dimension_type `*m`)
Writes to `m` the number of elements in the artificial parameter sequence in the pip tree node `pip_tree`.

- `int ppl_PIP_Tree_Node_begin` (`ppl_const_PIP_Tree_Node_t pip_tree`, `ppl_Artificial_Parameter_Sequence_const_iterator_t pit`)
Assigns to `pit` a const iterator "pointing" to the beginning of the artificial parameter sequence in the pip tree node `pip_tree`.
- `int ppl_PIP_Tree_Node_end` (`ppl_const_PIP_Tree_Node_t pip_tree`, `ppl_Artificial_Parameter_Sequence_const_iterator_t pit`)
Assigns to `pit` a const iterator "pointing" to the end of the artificial parameter sequence in the pip tree node `pip_tree`.

10.53.1 Detailed Description

Types and functions for generic PIP tree nodes. The types and functions for tree nodes provide an interface towards *PIP_Tree_Node*.

10.53.2 Friends And Related Function Documentation

10.53.2.1 `int ppl_PIP_Tree_Node_as_decision` (`ppl_const_PIP_Tree_Node_t spip_tree`, `ppl_const_PIP_Decision_Node_t * dpip_tree`) [**related**]

Writes to `dpip_tree` the decision node if `spip_tree` is a decision node, and 0 otherwise.
 Definition at line 2389 of file `ppl_c_implementation_common.cc`.

10.53.2.2 `int ppl_PIP_Tree_Node_as_solution` (`ppl_const_PIP_Tree_Node_t spip_tree`, `ppl_const_PIP_Solution_Node_t * dpip_tree`) [**related**]

Writes to `dpip_tree` the solution node if `spip_tree` is a solution node, and 0 otherwise.
 Definition at line 2381 of file `ppl_c_implementation_common.cc`.

10.53.2.3 `int ppl_PIP_Tree_Node_begin` (`ppl_const_PIP_Tree_Node_t pip_tree`, `ppl_Artificial_Parameter_Sequence_const_iterator_t pit`) [**related**]

Assigns to `pit` a const iterator "pointing" to the beginning of the artificial parameter sequence in the pip tree node `pip_tree`.
 Definition at line 2423 of file `ppl_c_implementation_common.cc`.

10.53.2.4 `int ppl_PIP_Tree_Node_end` (`ppl_const_PIP_Tree_Node_t pip_tree`, `ppl_Artificial_Parameter_Sequence_const_iterator_t pit`) [**related**]

Assigns to `pit` a const iterator "pointing" to the end of the artificial parameter sequence in the pip tree node `pip_tree`.

Definition at line 2434 of file `ppl_c_implementation_common.cc`.

10.53.2.5 `int ppl_PIP_Tree_Node_get_constraints (ppl_const_PIP_Tree_Node_t pip_tree,
ppl_const_Constraint_System_t * pcs)` [**related**]

Writes to `pcs` the local system of parameter constraints at the pip tree node `pip_tree`.

Definition at line 2397 of file `ppl_c_implementation_common.cc`.

10.53.2.6 `int ppl_PIP_Tree_Node_number_of_artificials (ppl_const_PIP_Tree_Node_t pip_tree,
ppl_dimension_type * m)` [**related**]

Writes to `m` the number of elements in the artificial parameter sequence in the pip tree node `pip_tree`.

Definition at line 2413 of file `ppl_c_implementation_common.cc`.

10.53.2.7 `int ppl_PIP_Tree_Node_OK (ppl_const_PIP_Tree_Node_t pip)` [**related**]

Returns a positive integer if `pip_tree` is well formed, i.e., if it satisfies all its implementation invariants; returns 0 and perhaps makes some noise if `pip_tree` is broken. Useful for debugging purposes.

Definition at line 2407 of file `ppl_c_implementation_common.cc`.

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.54 `ppl_Pointset_Powerset_BD_Shape_double_const_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_BD_Shape_double_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int` [ppl_new_Pointset_Powerset_BD_Shape_double_const_iterator](#) (`ppl_Pointset_Powerset_BD_Shape_double_const_iterator_t` **pit*)
- `int` [ppl_new_Pointset_Powerset_BD_Shape_double_const_iterator_from_const_iterator](#) (`ppl_Pointset_Powerset_BD_Shape_double_const_iterator_t` **px*, `ppl_const_Pointset_Powerset_BD_Shape_double_const_iterator_t` *y*)
- `int` [ppl_Pointset_Powerset_BD_Shape_double_const_iterator_begin](#) (`ppl_const_Pointset_Powerset_BD_Shape_double_t` *ps*, `ppl_Pointset_Powerset_BD_Shape_double_const_iterator_t` *psit*)

- int [ppl_Pointset_Powerset_BD_Shape_double_const_iterator_end](#) (ppl_const_Pointset_Powerset_BD_Shape_double_t ps, ppl_Pointset_Powerset_BD_Shape_double_const_iterator_t psit)
- int [ppl_Pointset_Powerset_BD_Shape_double_const_iterator_equal_test](#) (ppl_const_Pointset_Powerset_BD_Shape_double_const_iterator_t x, ppl_const_Pointset_Powerset_BD_Shape_double_const_iterator_t y)
- int [ppl_Pointset_Powerset_BD_Shape_double_const_iterator_increment](#) (ppl_Pointset_Powerset_BD_Shape_double_const_iterator_t psit)
- int [ppl_Pointset_Powerset_BD_Shape_double_const_iterator_decrement](#) (ppl_Pointset_Powerset_BD_Shape_double_const_iterator_t psit)
- int [ppl_Pointset_Powerset_BD_Shape_double_const_iterator_dereference](#) (ppl_const_Pointset_Powerset_BD_Shape_double_const_iterator_t ps, ppl_const_BD_Shape_double_t *d)
- int [ppl_delete_Pointset_Powerset_BD_Shape_double_const_iterator](#) (ppl_const_Pointset_Powerset_BD_Shape_double_const_iterator_t psit)

10.54.1 Detailed Description

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_BD_Shape_double_tag](#).

10.54.2 Friends And Related Function Documentation

10.54.2.1 int [ppl_delete_Pointset_Powerset_BD_Shape_double_const_iterator](#) (ppl_const_Pointset_Powerset_BD_Shape_double_const_iterator_t *psit*) [**related**]

10.54.2.2 int [ppl_new_Pointset_Powerset_BD_Shape_double_const_iterator](#) (ppl_Pointset_Powerset_BD_Shape_double_const_iterator_t * *pit*) [**related**]

10.54.2.3 int [ppl_new_Pointset_Powerset_BD_Shape_double_const_iterator_from_const_iterator](#) (ppl_Pointset_Powerset_BD_Shape_double_const_iterator_t * *px*, ppl_const_Pointset_Powerset_BD_Shape_double_const_iterator_t *y*) [**related**]

10.54.2.4 int [ppl_Pointset_Powerset_BD_Shape_double_const_iterator_begin](#) (ppl_const_Pointset_Powerset_BD_Shape_double_t *ps*, ppl_Pointset_Powerset_BD_Shape_double_const_iterator_t *psit*) [**related**]

10.54.2.5 int [ppl_Pointset_Powerset_BD_Shape_double_const_iterator_decrement](#) (ppl_Pointset_Powerset_BD_Shape_double_const_iterator_t *psit*) [**related**]

- 10.54.2.6** `int ppl_Pointset_Powerset_BD_Shape_double_const_iterator_dereference`
 (`ppl_const_Pointset_Powerset_BD_Shape_double_const_iterator_t ps`,
`ppl_const_BD_Shape_double_t * d`) [`related`]
- 10.54.2.7** `int ppl_Pointset_Powerset_BD_Shape_double_const_iterator_end`
 (`ppl_const_Pointset_Powerset_BD_Shape_double_t ps`, `ppl_Pointset_Powerset_BD_-`
`Shape_double_const_iterator_t psit`) [`related`]
- 10.54.2.8** `int ppl_Pointset_Powerset_BD_Shape_double_const_iterator_equal_test`
 (`ppl_const_Pointset_Powerset_BD_Shape_double_const_iterator_t x`,
`ppl_const_Pointset_Powerset_BD_Shape_double_const_iterator_t y`) [`related`]
- 10.54.2.9** `int ppl_Pointset_Powerset_BD_Shape_double_const_iterator_increment`
 (`ppl_Pointset_Powerset_BD_Shape_double_const_iterator_t psit`) [`related`]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.55 `ppl_Pointset_Powerset_BD_Shape_double_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a `ppl_Pointset_Powerset_BD_Shape_double_tag`.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_BD_Shape_double_iterator` (`ppl_Pointset_Powerset_BD_Shape_-`
`double_iterator_t *pit`)
- `int ppl_new_Pointset_Powerset_BD_Shape_double_iterator_from_iterator` (`ppl_Pointset_-`
`Powerset_BD_Shape_double_iterator_t *px`, `ppl_const_Pointset_Powerset_BD_Shape_double_-`
`iterator_t y`)
- `int ppl_Pointset_Powerset_BD_Shape_double_iterator_begin` (`ppl_Pointset_Powerset_BD_Shape_-`
`double_t ps`, `ppl_Pointset_Powerset_BD_Shape_double_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_double_iterator_end` (`ppl_Pointset_Powerset_BD_Shape_-`
`double_t ps`, `ppl_Pointset_Powerset_BD_Shape_double_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_double_iterator_equal_test` (`ppl_const_Pointset_Powerset_-`
`BD_Shape_double_iterator_t x`, `ppl_const_Pointset_Powerset_BD_Shape_double_iterator_t y`)

- int [ppl_Pointset_Powerset_BD_Shape_double_iterator_increment](#) (ppl_Pointset_Powerset_BD_Shape_double_iterator_t psit)
- int [ppl_Pointset_Powerset_BD_Shape_double_iterator_decrement](#) (ppl_Pointset_Powerset_BD_Shape_double_iterator_t psit)
- int [ppl_Pointset_Powerset_BD_Shape_double_iterator_dereference](#) (ppl_const_Pointset_Powerset_BD_Shape_double_iterator_t ps, ppl_const_BD_Shape_double_t *d)
- int [ppl_delete_Pointset_Powerset_BD_Shape_double_iterator](#) (ppl_const_Pointset_Powerset_BD_Shape_double_iterator_t psit)

10.55.1 Detailed Description

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_BD_Shape_double_tag](#).

10.55.2 Friends And Related Function Documentation

- 10.55.2.1** int [ppl_delete_Pointset_Powerset_BD_Shape_double_iterator](#) (ppl_const_Pointset_Powerset_BD_Shape_double_iterator_t *psit*) [[related](#)]
- 10.55.2.2** int [ppl_new_Pointset_Powerset_BD_Shape_double_iterator](#) (ppl_Pointset_Powerset_BD_Shape_double_iterator_t * *pit*) [[related](#)]
- 10.55.2.3** int [ppl_new_Pointset_Powerset_BD_Shape_double_iterator_from_iterator](#) (ppl_Pointset_Powerset_BD_Shape_double_iterator_t * *px*, ppl_const_Pointset_Powerset_BD_Shape_double_iterator_t *y*) [[related](#)]
- 10.55.2.4** int [ppl_Pointset_Powerset_BD_Shape_double_iterator_begin](#) (ppl_Pointset_Powerset_BD_Shape_double_t *ps*, ppl_Pointset_Powerset_BD_Shape_double_iterator_t *psit*) [[related](#)]
- 10.55.2.5** int [ppl_Pointset_Powerset_BD_Shape_double_iterator_decrement](#) (ppl_Pointset_Powerset_BD_Shape_double_iterator_t *psit*) [[related](#)]
- 10.55.2.6** int [ppl_Pointset_Powerset_BD_Shape_double_iterator_dereference](#) (ppl_const_Pointset_Powerset_BD_Shape_double_iterator_t *ps*, ppl_const_BD_Shape_double_t * *d*) [[related](#)]

10.55.2.7 `int ppl_Pointset_Powerset_BD_Shape_double_iterator_end (ppl_Pointset_Powerset_BD_Shape_double_t ps, ppl_Pointset_Powerset_BD_Shape_double_iterator_t psit)` **[related]**

10.55.2.8 `int ppl_Pointset_Powerset_BD_Shape_double_iterator_equal_test (ppl_const_Pointset_Powerset_BD_Shape_double_iterator_t x, ppl_const_Pointset_Powerset_BD_Shape_double_iterator_t y)` **[related]**

10.55.2.9 `int ppl_Pointset_Powerset_BD_Shape_double_iterator_increment (ppl_Pointset_Powerset_BD_Shape_double_iterator_t psit)` **[related]**

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.56 ppl_Pointset_Powerset_BD_Shape_double_tag Interface Reference

Types and functions for [ppl_Pointset_Powerset_BD_Shape_double_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl\_delete\_Pointset\_Powerset\_BD\_Shape\_double (ppl_const_Pointset_Powerset_BD_Shape_double_t ph)`
- `int ppl\_new\_Pointset\_Powerset\_BD\_Shape\_double\_from\_space\_dimension (ppl_Pointset_Powerset_BD_Shape_double_t *pph, ppl_dimension_type d, int empty)`
- `int ppl\_new\_Pointset\_Powerset\_BD\_Shape\_double\_from\_Pointset\_Powerset\_BD\_Shape\_double (ppl_Pointset_Powerset_BD_Shape_double_t *pph, ppl_const_Pointset_Powerset_BD_Shape_double_t ph)`
- `int ppl\_new\_Pointset\_Powerset\_BD\_Shape\_double\_from\_BD\_Shape\_double (ppl_Pointset_Powerset_BD_Shape_double_t *pph, ppl_const_BD_Shape_double_t ph)`
- `int ppl\_new\_Pointset\_Powerset\_BD\_Shape\_double\_from\_Pointset\_Powerset\_BD\_Shape\_double\_with\_complexity (ppl_Pointset_Powerset_BD_Shape_double_t *pph, ppl_const_Pointset_Powerset_BD_Shape_double_t ph, int complexity)`
- `int ppl\_new\_Pointset\_Powerset\_BD\_Shape\_double\_from\_BD\_Shape\_double\_with\_complexity (ppl_Pointset_Powerset_BD_Shape_double_t *pph, ppl_const_BD_Shape_double_t ph, int complexity)`
- `int ppl\_new\_Pointset\_Powerset\_BD\_Shape\_double\_from\_Constraint\_System (ppl_Pointset_Powerset_BD_Shape_double_t *pph, ppl_const_Constraint_System_t cs)`
- `int ppl\_new\_Pointset\_Powerset\_BD\_Shape\_double\_from\_Congruence\_System (ppl_Pointset_Powerset_BD_Shape_double_t *pph, ppl_const_Congruence_System_t cs)`

- [int ppl_Pointset_Powerset_BD_Shape_double_space_dimension](#) (ppl_const_Pointset_Powerset_BD_Shape_double_t ph, ppl_dimension_type *m)
- [int ppl_Pointset_Powerset_BD_Shape_double_affine_dimension](#) (ppl_const_Pointset_Powerset_BD_Shape_double_t ph, ppl_dimension_type *m)
- [int ppl_Pointset_Powerset_BD_Shape_double_relation_with_Constraint](#) (ppl_const_Pointset_Powerset_BD_Shape_double_t ph, ppl_const_Constraint_t c)
- [int ppl_Pointset_Powerset_BD_Shape_double_relation_with_Generator](#) (ppl_const_Pointset_Powerset_BD_Shape_double_t ph, ppl_const_Generator_t c)
- [int ppl_Pointset_Powerset_BD_Shape_double_relation_with_Congruence](#) (ppl_const_Pointset_Powerset_BD_Shape_double_t ph, ppl_const_Congruence_t c)
- [int ppl_Pointset_Powerset_BD_Shape_double_is_empty](#) (ppl_const_Pointset_Powerset_BD_Shape_double_t ph)
- [int ppl_Pointset_Powerset_BD_Shape_double_is_universe](#) (ppl_const_Pointset_Powerset_BD_Shape_double_t ph)
- [int ppl_Pointset_Powerset_BD_Shape_double_is_bounded](#) (ppl_const_Pointset_Powerset_BD_Shape_double_t ph)
- [int ppl_Pointset_Powerset_BD_Shape_double_contains_integer_point](#) (ppl_const_Pointset_Powerset_BD_Shape_double_t ph)
- [int ppl_Pointset_Powerset_BD_Shape_double_is_topologically_closed](#) (ppl_const_Pointset_Powerset_BD_Shape_double_t ph)
- [int ppl_Pointset_Powerset_BD_Shape_double_is_discrete](#) (ppl_const_Pointset_Powerset_BD_Shape_double_t ph)
- [int ppl_Pointset_Powerset_BD_Shape_double_topological_closure_assign](#) (ppl_Pointset_Powerset_BD_Shape_double_t ph)
- [int ppl_Pointset_Powerset_BD_Shape_double_pairwise_reduce](#) (ppl_Pointset_Powerset_BD_Shape_double_t ph)
- [int ppl_Pointset_Powerset_BD_Shape_double_omega_reduce](#) (ppl_Pointset_Powerset_BD_Shape_double_t ph)
- [int ppl_Pointset_Powerset_BD_Shape_double_bounds_from_above](#) (ppl_const_Pointset_Powerset_BD_Shape_double_t ph, ppl_const_Linear_Expression_t le)
- [int ppl_Pointset_Powerset_BD_Shape_double_bounds_from_below](#) (ppl_const_Pointset_Powerset_BD_Shape_double_t ph, ppl_const_Linear_Expression_t le)
- [int ppl_Pointset_Powerset_BD_Shape_double_maximize](#) (ppl_const_Pointset_Powerset_BD_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- [int ppl_Pointset_Powerset_BD_Shape_double_minimize](#) (ppl_const_Pointset_Powerset_BD_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- [int ppl_Pointset_Powerset_BD_Shape_double_maximize_with_point](#) (ppl_const_Pointset_Powerset_BD_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- [int ppl_Pointset_Powerset_BD_Shape_double_minimize_with_point](#) (ppl_const_Pointset_Powerset_BD_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- [int ppl_Pointset_Powerset_BD_Shape_double_contains_Pointset_Powerset_BD_Shape_double](#) (ppl_const_Pointset_Powerset_BD_Shape_double_t x, ppl_const_Pointset_Powerset_BD_Shape_double_t y)
- [int ppl_Pointset_Powerset_BD_Shape_double_strictly_contains_Pointset_Powerset_BD_Shape_double](#) (ppl_const_Pointset_Powerset_BD_Shape_double_t x, ppl_const_Pointset_Powerset_BD_Shape_double_t y)
- [int ppl_Pointset_Powerset_BD_Shape_double_is_disjoint_from_Pointset_Powerset_BD_Shape_double](#) (ppl_const_Pointset_Powerset_BD_Shape_double_t x, ppl_const_Pointset_Powerset_BD_Shape_double_t y)

- int [ppl_Pointset_Powerset_BD_Shape_double_geometrically_covers_Pointset_Powerset_BD_Shape_double](#) (ppl_const_Pointset_Powerset_BD_Shape_double_t x, ppl_const_Pointset_Powerset_BD_Shape_double_t y)
- int [ppl_Pointset_Powerset_BD_Shape_double_geometrically_equals_Pointset_Powerset_BD_Shape_double](#) (ppl_const_Pointset_Powerset_BD_Shape_double_t x, ppl_const_Pointset_Powerset_BD_Shape_double_t y)
- int [ppl_Pointset_Powerset_BD_Shape_double_equals_Pointset_Powerset_BD_Shape_double](#) (ppl_const_Pointset_Powerset_BD_Shape_double_t x, ppl_const_Pointset_Powerset_BD_Shape_double_t y)
- int [ppl_Pointset_Powerset_BD_Shape_double_OK](#) (ppl_const_Pointset_Powerset_BD_Shape_double_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_double_add_constraint](#) (ppl_Pointset_Powerset_BD_Shape_double_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_BD_Shape_double_add_congruence](#) (ppl_Pointset_Powerset_BD_Shape_double_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_BD_Shape_double_add_constraints](#) (ppl_Pointset_Powerset_BD_Shape_double_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_BD_Shape_double_add_congruences](#) (ppl_Pointset_Powerset_BD_Shape_double_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_BD_Shape_double_refine_with_constraint](#) (ppl_Pointset_Powerset_BD_Shape_double_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_BD_Shape_double_refine_with_congruence](#) (ppl_Pointset_Powerset_BD_Shape_double_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_BD_Shape_double_refine_with_constraints](#) (ppl_Pointset_Powerset_BD_Shape_double_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_BD_Shape_double_refine_with_congruences](#) (ppl_Pointset_Powerset_BD_Shape_double_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_BD_Shape_double_intersection_assign](#) (ppl_Pointset_Powerset_BD_Shape_double_t x, ppl_const_Pointset_Powerset_BD_Shape_double_t y)
- int [ppl_Pointset_Powerset_BD_Shape_double_upper_bound_assign](#) (ppl_Pointset_Powerset_BD_Shape_double_t x, ppl_const_Pointset_Powerset_BD_Shape_double_t y)
- int [ppl_Pointset_Powerset_BD_Shape_double_difference_assign](#) (ppl_Pointset_Powerset_BD_Shape_double_t x, ppl_const_Pointset_Powerset_BD_Shape_double_t y)
- int [ppl_Pointset_Powerset_BD_Shape_double_concatenate_assign](#) (ppl_Pointset_Powerset_BD_Shape_double_t x, ppl_const_Pointset_Powerset_BD_Shape_double_t y)
- int [ppl_Pointset_Powerset_BD_Shape_double_time_elapse_assign](#) (ppl_Pointset_Powerset_BD_Shape_double_t x, ppl_const_Pointset_Powerset_BD_Shape_double_t y)
- int [ppl_Pointset_Powerset_BD_Shape_double_upper_bound_assign_if_exact](#) (ppl_Pointset_Powerset_BD_Shape_double_t x, ppl_const_Pointset_Powerset_BD_Shape_double_t y)
- int [ppl_Pointset_Powerset_BD_Shape_double_simplify_using_context_assign](#) (ppl_Pointset_Powerset_BD_Shape_double_t x, ppl_const_Pointset_Powerset_BD_Shape_double_t y)
- int [ppl_Pointset_Powerset_BD_Shape_double_constrains](#) (ppl_Pointset_Powerset_BD_Shape_double_t ph, ppl_dimension_type var)
- int [ppl_Pointset_Powerset_BD_Shape_double_unconstrain_space_dimension](#) (ppl_Pointset_Powerset_BD_Shape_double_t ph, ppl_dimension_type var)
- int [ppl_Pointset_Powerset_BD_Shape_double_unconstrain_space_dimensions](#) (ppl_Pointset_Powerset_BD_Shape_double_t ph, ppl_dimension_type ds[], size_t n)
- int [ppl_Pointset_Powerset_BD_Shape_double_affine_image](#) (ppl_Pointset_Powerset_BD_Shape_double_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_double_affine_preimage](#) (ppl_Pointset_Powerset_BD_Shape_double_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)

- int [ppl_Pointset_Powerset_BD_Shape_double_bounded_affine_image](#) (ppl_Pointset_Powerset_-
BD_Shape_double_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_-
Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_double_bounded_affine_preimage](#) (ppl_Pointset_Powerset_-
BD_Shape_double_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_-
Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_double_generalized_affine_image](#) (ppl_Pointset_Powerset_-
BD_Shape_double_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_-
const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_double_generalized_affine_preimage](#) (ppl_Pointset_-
Powerset_BD_Shape_double_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#)
relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_double_generalized_affine_image_lhs_rhs](#) (ppl_Pointset_-
Powerset_BD_Shape_double_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_-
Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_BD_Shape_double_generalized_affine_preimage_lhs_rhs](#) (ppl_-
Pointset_Powerset_BD_Shape_double_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_-
Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_BD_Shape_double_add_space_dimensions_and_embed](#) (ppl_Pointset_-
Powerset_BD_Shape_double_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_BD_Shape_double_add_space_dimensions_and_project](#) (ppl_Pointset_-
Powerset_BD_Shape_double_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_BD_Shape_double_remove_space_dimensions](#) (ppl_Pointset_-
Powerset_BD_Shape_double_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_BD_Shape_double_remove_higher_space_dimensions](#) (ppl_Pointset_-
Powerset_BD_Shape_double_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_BD_Shape_double_expand_space_dimension](#) (ppl_Pointset_Powerset_-
BD_Shape_double_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Pointset_Powerset_BD_Shape_double_fold_space_dimensions](#) (ppl_Pointset_Powerset_-
BD_Shape_double_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_BD_Shape_double_map_space_dimensions](#) (ppl_Pointset_Powerset_-
BD_Shape_double_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_Pointset_Powerset_BD_Shape_double_drop_some_non_integer_points](#) (ppl_Pointset_-
Powerset_BD_Shape_double_t ph, int complexity)
- int [ppl_Pointset_Powerset_BD_Shape_double_drop_some_non_integer_points_2](#) (ppl_Pointset_-
Powerset_BD_Shape_double_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_Pointset_Powerset_BD_Shape_double_external_memory_in_bytes](#) (ppl_const_Pointset_-
Powerset_BD_Shape_double_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_BD_Shape_double_total_memory_in_bytes](#) (ppl_const_Pointset_-
Powerset_BD_Shape_double_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_BD_Shape_double_size](#) (ppl_const_Pointset_Powerset_BD_Shape_-
double_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_BD_Shape_double_add_disjunct](#) (ppl_Pointset_Powerset_BD_Shape_-
double_t ps, ppl_const_BD_Shape_double_t d)
- int [ppl_Pointset_Powerset_BD_Shape_double_drop_disjunct](#) (ppl_Pointset_Powerset_BD_Shape_-
double_t ps, ppl_const_Pointset_Powerset_BD_Shape_double_iterator_t cit, ppl_Pointset_-
Powerset_BD_Shape_double_iterator_t it)
- int [ppl_Pointset_Powerset_BD_Shape_double_drop_disjuncts](#) (ppl_Pointset_Powerset_BD_-
Shape_double_t ps, ppl_const_Pointset_Powerset_BD_Shape_double_iterator_t first, ppl_const_-
Pointset_Powerset_BD_Shape_double_iterator_t last)
- int [ppl_Pointset_Powerset_BD_Shape_double_BHZ03_H79_BHMZ05_widening_assign](#) (ppl_-
Pointset_Powerset_BD_Shape_double_t x, ppl_const_Pointset_Powerset_BD_Shape_double_t
y)

- int [ppl_Pointset_Powerset_BD_Shape_double_BHZ03_H79_H79_widening_assign](#) (ppl_Pointset_Powerset_BD_Shape_double_t x, ppl_const_Pointset_Powerset_BD_Shape_double_t y)
- int [ppl_Pointset_Powerset_BD_Shape_double_BGP99_BHMZ05_extrapolation_assign](#) (ppl_Pointset_Powerset_BD_Shape_double_t x, ppl_const_Pointset_Powerset_BD_Shape_double_t y, int disjuncts)
- int [ppl_Pointset_Powerset_BD_Shape_double_BGP99_H79_extrapolation_assign](#) (ppl_Pointset_Powerset_BD_Shape_double_t x, ppl_const_Pointset_Powerset_BD_Shape_double_t y, int disjuncts)

10.56.1 Detailed Description

Types and functions for [ppl_Pointset_Powerset_BD_Shape_double_tag](#).

10.56.2 Friends And Related Function Documentation

10.56.2.1 int [ppl_delete_Pointset_Powerset_BD_Shape_double](#) (ppl_const_Pointset_Powerset_BD_Shape_double_t *ph*) [[related](#)]

10.56.2.2 int [ppl_new_Pointset_Powerset_BD_Shape_double_from_BD_Shape_double](#) (ppl_Pointset_Powerset_BD_Shape_double_t * *pph*, ppl_const_BD_Shape_double_t *ph*) [[related](#)]

10.56.2.3 int [ppl_new_Pointset_Powerset_BD_Shape_double_from_BD_Shape_double_with_complexity](#) (ppl_Pointset_Powerset_BD_Shape_double_t * *pph*, ppl_const_BD_Shape_double_t *ph*, int *complexity*) [[related](#)]

10.56.2.4 int [ppl_new_Pointset_Powerset_BD_Shape_double_from_Congruence_System](#) (ppl_Pointset_Powerset_BD_Shape_double_t * *pph*, ppl_const_Congruence_System_t *cs*) [[related](#)]

10.56.2.5 int [ppl_new_Pointset_Powerset_BD_Shape_double_from_Constraint_System](#) (ppl_Pointset_Powerset_BD_Shape_double_t * *pph*, ppl_const_Constraint_System_t *cs*) [[related](#)]

- 10.56.2.6** `int ppl_new_Pointset_Powerset_BD_Shape_double_from_Pointset_Powerset_-
BD_Shape_double (ppl_Pointset_Powerset_BD_Shape_double_t * pph,
ppl_const_Pointset_Powerset_BD_Shape_double_t ph)` **[related]**
- 10.56.2.7** `int ppl_new_Pointset_Powerset_BD_Shape_double_from_Pointset_Powerset_BD_-
Shape_double_with_complexity (ppl_Pointset_Powerset_BD_Shape_double_t * pph,
ppl_const_Pointset_Powerset_BD_Shape_double_t ph, int complexity)` **[related]**
- 10.56.2.8** `int ppl_new_Pointset_Powerset_BD_Shape_double_from_space_dimension
(ppl_Pointset_Powerset_BD_Shape_double_t * pph, ppl_dimension_type d, int empty)`
[related]
- 10.56.2.9** `int ppl_Pointset_Powerset_BD_Shape_double_add_congruence
(ppl_Pointset_Powerset_BD_Shape_double_t ph, ppl_const_Congruence_t c)`
[related]
- 10.56.2.10** `int ppl_Pointset_Powerset_BD_Shape_double_add_congruences
(ppl_Pointset_Powerset_BD_Shape_double_t ph, ppl_const_Congruence_System_t cs)`
[related]
- 10.56.2.11** `int ppl_Pointset_Powerset_BD_Shape_double_add_constraint
(ppl_Pointset_Powerset_BD_Shape_double_t ph, ppl_const_Constraint_t c)`
[related]
- 10.56.2.12** `int ppl_Pointset_Powerset_BD_Shape_double_add_constraints
(ppl_Pointset_Powerset_BD_Shape_double_t ph, ppl_const_Constraint_System_t cs)`
[related]
- 10.56.2.13** `int ppl_Pointset_Powerset_BD_Shape_double_add_disjunct (ppl_Pointset_-
Powerset_BD_Shape_double_t ps, ppl_const_BD_Shape_double_t d)`
[related]

- 10.56.2.14** `int ppl_Pointset_Powerset_BD_Shape_double_add_space_dimensions_and_embed`
`(ppl_Pointset_Powerset_BD_Shape_double_t ph, ppl_dimension_type d)` [**related**]
- 10.56.2.15** `int ppl_Pointset_Powerset_BD_Shape_double_add_space_dimensions_and_project`
`(ppl_Pointset_Powerset_BD_Shape_double_t ph, ppl_dimension_type d)` [**related**]
- 10.56.2.16** `int ppl_Pointset_Powerset_BD_Shape_double_affine_dimension`
`(ppl_const_Pointset_Powerset_BD_Shape_double_t ph, ppl_dimension_type * m)`
[related]
- 10.56.2.17** `int ppl_Pointset_Powerset_BD_Shape_double_affine_image` (`ppl_Pointset_Powerset_-`
`BD_Shape_double_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le,`
`ppl_const_Coefficient_t d)` [**related**]
- 10.56.2.18** `int ppl_Pointset_Powerset_BD_Shape_double_affine_preimage`
`(ppl_Pointset_Powerset_BD_Shape_double_t ph, ppl_dimension_type var,`
`ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.56.2.19** `int ppl_Pointset_Powerset_BD_Shape_double_BGP99_BHMZ05_-`
`extrapolation_assign` (`ppl_Pointset_Powerset_BD_Shape_double_t x,`
`ppl_const_Pointset_Powerset_BD_Shape_double_t y, int disjuncts)` [**related**]
- 10.56.2.20** `int ppl_Pointset_Powerset_BD_Shape_double_BGP99_H79_-`
`extrapolation_assign` (`ppl_Pointset_Powerset_BD_Shape_double_t x,`
`ppl_const_Pointset_Powerset_BD_Shape_double_t y, int disjuncts)` [**related**]
- 10.56.2.21** `int ppl_Pointset_Powerset_BD_Shape_double_BHZ03_H79_BHMZ05_-`
`widening_assign` (`ppl_Pointset_Powerset_BD_Shape_double_t x,`
`ppl_const_Pointset_Powerset_BD_Shape_double_t y)` [**related**]

- 10.56.2.22 `int ppl_Pointset_Powerset_BD_Shape_double_BHZ03_H79_H79_-widening_assign (ppl_Pointset_Powerset_BD_Shape_double_t x, ppl_const_Pointset_Powerset_BD_Shape_double_t y)` [**related**]
- 10.56.2.23 `int ppl_Pointset_Powerset_BD_Shape_double_bounded_affine_image (ppl_Pointset_Powerset_BD_Shape_double_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [**related**]
- 10.56.2.24 `int ppl_Pointset_Powerset_BD_Shape_double_bounded_affine_preimage (ppl_Pointset_Powerset_BD_Shape_double_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [**related**]
- 10.56.2.25 `int ppl_Pointset_Powerset_BD_Shape_double_bounds_from_above (ppl_const_Pointset_Powerset_BD_Shape_double_t ph, ppl_const_Linear_Expression_t le)` [**related**]
- 10.56.2.26 `int ppl_Pointset_Powerset_BD_Shape_double_bounds_from_below (ppl_const_Pointset_Powerset_BD_Shape_double_t ph, ppl_const_Linear_Expression_t le)` [**related**]
- 10.56.2.27 `int ppl_Pointset_Powerset_BD_Shape_double_concatenate_assign (ppl_Pointset_Powerset_BD_Shape_double_t x, ppl_const_Pointset_Powerset_BD_Shape_double_t y)` [**related**]
- 10.56.2.28 `int ppl_Pointset_Powerset_BD_Shape_double_constrains (ppl_Pointset_Powerset_BD_Shape_double_t ph, ppl_dimension_type var)` [**related**]
- 10.56.2.29 `int ppl_Pointset_Powerset_BD_Shape_double_contains_integer_point (ppl_const_Pointset_Powerset_BD_Shape_double_t ph)` [**related**]

- 10.56.2.30** `int ppl_Pointset_Powerset_BD_Shape_double_contains_Pointset_Powerset_-
BD_Shape_double (ppl_const_Pointset_Powerset_BD_Shape_double_t x,
ppl_const_Pointset_Powerset_BD_Shape_double_t y) [related]`
- 10.56.2.31** `int ppl_Pointset_Powerset_BD_Shape_double_difference_assign (ppl_Pointset_-
Powerset_BD_Shape_double_t x, ppl_const_Pointset_Powerset_BD_Shape_double_t y)
[related]`
- 10.56.2.32** `int ppl_Pointset_Powerset_BD_Shape_double_drop_disjunct (ppl_Pointset_Powerset_-
BD_Shape_double_t ps, ppl_const_Pointset_Powerset_BD_Shape_double_iterator_t
cit, ppl_Pointset_Powerset_BD_Shape_double_iterator_t it) [related]`
- 10.56.2.33** `int ppl_Pointset_Powerset_BD_Shape_double_drop_disjuncts (ppl_Pointset_-
Powerset_BD_Shape_double_t ps, ppl_const_Pointset_Powerset_BD_Shape_double_-
iterator_t first, ppl_const_Pointset_Powerset_BD_Shape_double_iterator_t last)
[related]`
- 10.56.2.34** `int ppl_Pointset_Powerset_BD_Shape_double_drop_some_non_integer_points
(ppl_Pointset_Powerset_BD_Shape_double_t ph, int complexity) [related]`
- 10.56.2.35** `int ppl_Pointset_Powerset_BD_Shape_double_drop_some_non_integer_points_2
(ppl_Pointset_Powerset_BD_Shape_double_t ph, ppl_dimension_type ds[], size_t n,
int complexity) [related]`
- 10.56.2.36** `int ppl_Pointset_Powerset_BD_Shape_double_equals_Pointset_Powerset_-
BD_Shape_double (ppl_const_Pointset_Powerset_BD_Shape_double_t x,
ppl_const_Pointset_Powerset_BD_Shape_double_t y) [related]`
- 10.56.2.37** `int ppl_Pointset_Powerset_BD_Shape_double_expand_space_dimension
(ppl_Pointset_Powerset_BD_Shape_double_t ph, ppl_dimension_type d,
ppl_dimension_type m) [related]`

- 10.56.2.38 `int ppl_Pointset_Powerset_BD_Shape_double_external_memory_in_bytes`
 (`ppl_const_Pointset_Powerset_BD_Shape_double_t ps`, `size_t * sz`) [`related`]
- 10.56.2.39 `int ppl_Pointset_Powerset_BD_Shape_double_fold_space_dimensions`
 (`ppl_Pointset_Powerset_BD_Shape_double_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`,
`ppl_dimension_type d`) [`related`]
- 10.56.2.40 `int ppl_Pointset_Powerset_BD_Shape_double_generalized_affine_image`
 (`ppl_Pointset_Powerset_BD_Shape_double_t ph`, `ppl_dimension_type var`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.56.2.41 `int ppl_Pointset_Powerset_BD_Shape_double_generalized_affine_image_lhs_rhs`
 (`ppl_Pointset_Powerset_BD_Shape_double_t ph`, `ppl_const_Linear_Expression_t`
`lhs`, `enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
 [`related`]
- 10.56.2.42 `int ppl_Pointset_Powerset_BD_Shape_double_generalized_affine_preimage`
 (`ppl_Pointset_Powerset_BD_Shape_double_t ph`, `ppl_dimension_type var`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.56.2.43 `int ppl_Pointset_Powerset_BD_Shape_double_generalized_affine_preimage_lhs_rhs`
 (`ppl_Pointset_Powerset_BD_Shape_double_t ph`, `ppl_const_Linear_Expression_t`
`lhs`, `enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
 [`related`]
- 10.56.2.44 `int ppl_Pointset_Powerset_BD_Shape_double_geometrically_covers_Pointset_`
`Powerset_BD_Shape_double` (`ppl_const_Pointset_Powerset_BD_Shape_double_t x`,
`ppl_const_Pointset_Powerset_BD_Shape_double_t y`) [`related`]

- 10.56.2.45** `int ppl_Pointset_Powerset_BD_Shape_double_geometrically_equals_Pointset_Powerset_BD_Shape_double (ppl_const_Pointset_Powerset_BD_Shape_double_t x, ppl_const_Pointset_Powerset_BD_Shape_double_t y) [related]`
- 10.56.2.46** `int ppl_Pointset_Powerset_BD_Shape_double_intersection_assign (ppl_Pointset_Powerset_BD_Shape_double_t x, ppl_const_Pointset_Powerset_BD_Shape_double_t y) [related]`
- 10.56.2.47** `int ppl_Pointset_Powerset_BD_Shape_double_is_bounded (ppl_const_Pointset_Powerset_BD_Shape_double_t ph) [related]`
- 10.56.2.48** `int ppl_Pointset_Powerset_BD_Shape_double_is_discrete (ppl_const_Pointset_Powerset_BD_Shape_double_t ph) [related]`
- 10.56.2.49** `int ppl_Pointset_Powerset_BD_Shape_double_is_disjoint_from_Pointset_Powerset_BD_Shape_double (ppl_const_Pointset_Powerset_BD_Shape_double_t x, ppl_const_Pointset_Powerset_BD_Shape_double_t y) [related]`
- 10.56.2.50** `int ppl_Pointset_Powerset_BD_Shape_double_is_empty (ppl_const_Pointset_Powerset_BD_Shape_double_t ph) [related]`
- 10.56.2.51** `int ppl_Pointset_Powerset_BD_Shape_double_is_topologically_closed (ppl_const_Pointset_Powerset_BD_Shape_double_t ph) [related]`
- 10.56.2.52** `int ppl_Pointset_Powerset_BD_Shape_double_is_universe (ppl_const_Pointset_Powerset_BD_Shape_double_t ph) [related]`
- 10.56.2.53** `int ppl_Pointset_Powerset_BD_Shape_double_map_space_dimensions (ppl_Pointset_Powerset_BD_Shape_double_t ph, ppl_dimension_type maps[], size_t n) [related]`

- 10.56.2.54 `int ppl_Pointset_Powerset_BD_Shape_double_maximize (ppl_const_Pointset_Powerset_BD_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)` [related]
- 10.56.2.55 `int ppl_Pointset_Powerset_BD_Shape_double_maximize_with_point (ppl_const_Pointset_Powerset_BD_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` [related]
- 10.56.2.56 `int ppl_Pointset_Powerset_BD_Shape_double_minimize (ppl_const_Pointset_Powerset_BD_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)` [related]
- 10.56.2.57 `int ppl_Pointset_Powerset_BD_Shape_double_minimize_with_point (ppl_const_Pointset_Powerset_BD_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` [related]
- 10.56.2.58 `int ppl_Pointset_Powerset_BD_Shape_double_OK (ppl_const_Pointset_Powerset_BD_Shape_double_t ph)` [related]
- 10.56.2.59 `int ppl_Pointset_Powerset_BD_Shape_double_omega_reduce (ppl_Pointset_Powerset_BD_Shape_double_t ph)` [related]
- 10.56.2.60 `int ppl_Pointset_Powerset_BD_Shape_double_pairwise_reduce (ppl_Pointset_Powerset_BD_Shape_double_t ph)` [related]
- 10.56.2.61 `int ppl_Pointset_Powerset_BD_Shape_double_refine_with_congruence (ppl_Pointset_Powerset_BD_Shape_double_t ph, ppl_const_Congruence_t c)` [related]

- 10.56.2.62** `int ppl_Pointset_Powerset_BD_Shape_double_refine_with_congruences`
 (`ppl_Pointset_Powerset_BD_Shape_double_t ph`, `ppl_const_Congruence_System_t cs`)
 [related]
- 10.56.2.63** `int ppl_Pointset_Powerset_BD_Shape_double_refine_with_constraint`
 (`ppl_Pointset_Powerset_BD_Shape_double_t ph`, `ppl_const_Constraint_t c`)
 [related]
- 10.56.2.64** `int ppl_Pointset_Powerset_BD_Shape_double_refine_with_constraints`
 (`ppl_Pointset_Powerset_BD_Shape_double_t ph`, `ppl_const_Constraint_System_t cs`)
 [related]
- 10.56.2.65** `int ppl_Pointset_Powerset_BD_Shape_double_relation_with_Congruence`
 (`ppl_const_Pointset_Powerset_BD_Shape_double_t ph`, `ppl_const_Congruence_t c`)
 [related]
- 10.56.2.66** `int ppl_Pointset_Powerset_BD_Shape_double_relation_with_Constraint`
 (`ppl_const_Pointset_Powerset_BD_Shape_double_t ph`, `ppl_const_Constraint_t c`)
 [related]
- 10.56.2.67** `int ppl_Pointset_Powerset_BD_Shape_double_relation_with_Generator`
 (`ppl_const_Pointset_Powerset_BD_Shape_double_t ph`, `ppl_const_Generator_t c`)
 [related]
- 10.56.2.68** `int ppl_Pointset_Powerset_BD_Shape_double_remove_higher_space_dimensions`
 (`ppl_Pointset_Powerset_BD_Shape_double_t ph`, `ppl_dimension_type d`) [related]
- 10.56.2.69** `int ppl_Pointset_Powerset_BD_Shape_double_remove_space_dimensions`
 (`ppl_Pointset_Powerset_BD_Shape_double_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`)
 [related]

- 10.56.2.70** `int ppl_Pointset_Powerset_BD_Shape_double_simplify_using_-
context_assign (ppl_Pointset_Powerset_BD_Shape_double_t x,
ppl_const_Pointset_Powerset_BD_Shape_double_t y) [related]`
- 10.56.2.71** `int ppl_Pointset_Powerset_BD_Shape_double_size (ppl_const_Pointset_Powerset_-
BD_Shape_double_t ps, size_t * sz) [related]`
- 10.56.2.72** `int ppl_Pointset_Powerset_BD_Shape_double_space_dimension
(ppl_const_Pointset_Powerset_BD_Shape_double_t ph, ppl_dimension_type * m)
[related]`
- 10.56.2.73** `int ppl_Pointset_Powerset_BD_Shape_double_strictly_contains_Pointset_-
Powerset_BD_Shape_double (ppl_const_Pointset_Powerset_BD_Shape_double_t x,
ppl_const_Pointset_Powerset_BD_Shape_double_t y) [related]`
- 10.56.2.74** `int ppl_Pointset_Powerset_BD_Shape_double_time_elapse_assign (ppl_Pointset_-
Powerset_BD_Shape_double_t x, ppl_const_Pointset_Powerset_BD_Shape_double_t y)
[related]`
- 10.56.2.75** `int ppl_Pointset_Powerset_BD_Shape_double_topological_closure_assign
(ppl_Pointset_Powerset_BD_Shape_double_t ph) [related]`
- 10.56.2.76** `int ppl_Pointset_Powerset_BD_Shape_double_total_memory_in_bytes
(ppl_const_Pointset_Powerset_BD_Shape_double_t ps, size_t * sz) [related]`
- 10.56.2.77** `int ppl_Pointset_Powerset_BD_Shape_double_unconstrain_space_dimension
(ppl_Pointset_Powerset_BD_Shape_double_t ph, ppl_dimension_type var)
[related]`

- 10.56.2.78** `int ppl_Pointset_Powerset_BD_Shape_double_unconstrain_space_dimensions`
 (`ppl_Pointset_Powerset_BD_Shape_double_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`)
 [**related**]
- 10.56.2.79** `int ppl_Pointset_Powerset_BD_Shape_double_upper_bound_assign` (`ppl_Pointset_Powerset_BD_Shape_double_t x`, `ppl_const_Pointset_Powerset_BD_Shape_double_t y`)
 [**related**]
- 10.56.2.80** `int ppl_Pointset_Powerset_BD_Shape_double_upper_bound_assign_if_exact` (`ppl_Pointset_Powerset_BD_Shape_double_t x`, `ppl_const_Pointset_Powerset_BD_Shape_double_t y`) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.57 ppl_Pointset_Powerset_BD_Shape_float_const_iterator_tag Interface Reference

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_BD_Shape_float_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_BD_Shape_float_const_iterator` (`ppl_Pointset_Powerset_BD_Shape_float_const_iterator_t *pit`)
- `int ppl_new_Pointset_Powerset_BD_Shape_float_const_iterator_from_const_iterator` (`ppl_Pointset_Powerset_BD_Shape_float_const_iterator_t *px`, `ppl_const_Pointset_Powerset_BD_Shape_float_const_iterator_t y`)
- `int ppl_Pointset_Powerset_BD_Shape_float_const_iterator_begin` (`ppl_const_Pointset_Powerset_BD_Shape_float_t ps`, `ppl_Pointset_Powerset_BD_Shape_float_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_float_const_iterator_end` (`ppl_const_Pointset_Powerset_BD_Shape_float_t ps`, `ppl_Pointset_Powerset_BD_Shape_float_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_float_const_iterator_equal_test` (`ppl_const_Pointset_Powerset_BD_Shape_float_const_iterator_t x`, `ppl_const_Pointset_Powerset_BD_Shape_float_const_iterator_t y`)
- `int ppl_Pointset_Powerset_BD_Shape_float_const_iterator_increment` (`ppl_Pointset_Powerset_BD_Shape_float_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_float_const_iterator_decrement` (`ppl_Pointset_Powerset_BD_Shape_float_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_float_const_iterator_dereference` (`ppl_const_Pointset_Powerset_BD_Shape_float_const_iterator_t ps`, `ppl_const_BD_Shape_float_t *d`)

- int [ppl_delete_Pointset_Powerset_BD_Shape_float_const_iterator](#) (ppl_const_Pointset_Powerset_BD_Shape_float_const_iterator_t psit)

10.57.1 Detailed Description

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_BD_Shape_float_tag](#).

10.57.2 Friends And Related Function Documentation

10.57.2.1 int [ppl_delete_Pointset_Powerset_BD_Shape_float_const_iterator](#)
(ppl_const_Pointset_Powerset_BD_Shape_float_const_iterator_t *psit*) [[related](#)]

10.57.2.2 int [ppl_new_Pointset_Powerset_BD_Shape_float_const_iterator](#)
(ppl_Pointset_Powerset_BD_Shape_float_const_iterator_t * *pit*) [[related](#)]

10.57.2.3 int [ppl_new_Pointset_Powerset_BD_Shape_float_const_iterator_from_const_iterator](#)
(ppl_Pointset_Powerset_BD_Shape_float_const_iterator_t * *px*,
ppl_const_Pointset_Powerset_BD_Shape_float_const_iterator_t *y*) [[related](#)]

10.57.2.4 int [ppl_Pointset_Powerset_BD_Shape_float_const_iterator_begin](#)
(ppl_const_Pointset_Powerset_BD_Shape_float_t *ps*, ppl_Pointset_Powerset_BD_Shape_float_const_iterator_t *psit*) [[related](#)]

10.57.2.5 int [ppl_Pointset_Powerset_BD_Shape_float_const_iterator_decrement](#)
(ppl_Pointset_Powerset_BD_Shape_float_const_iterator_t *psit*) [[related](#)]

10.57.2.6 int [ppl_Pointset_Powerset_BD_Shape_float_const_iterator_dereference](#)
(ppl_const_Pointset_Powerset_BD_Shape_float_const_iterator_t *ps*,
ppl_const_BD_Shape_float_t * *d*) [[related](#)]

10.57.2.7 int [ppl_Pointset_Powerset_BD_Shape_float_const_iterator_end](#)
(ppl_const_Pointset_Powerset_BD_Shape_float_t *ps*, ppl_Pointset_Powerset_BD_Shape_float_const_iterator_t *psit*) [[related](#)]

10.57.2.8 `int ppl_Pointset_Powerset_BD_Shape_float_const_iterator_equal_test`
 (`ppl_const_Pointset_Powerset_BD_Shape_float_const_iterator_t x`,
`ppl_const_Pointset_Powerset_BD_Shape_float_const_iterator_t y`) [**related**]

10.57.2.9 `int ppl_Pointset_Powerset_BD_Shape_float_const_iterator_increment`
 (`ppl_Pointset_Powerset_BD_Shape_float_const_iterator_t psit`) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.58 ppl_Pointset_Powerset_BD_Shape_float_iterator_tag Interface Reference

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_BD_Shape_float_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_BD_Shape_float_iterator` (`ppl_Pointset_Powerset_BD_Shape_float_iterator_t *pit`)
- `int ppl_new_Pointset_Powerset_BD_Shape_float_iterator_from_iterator` (`ppl_Pointset_Powerset_BD_Shape_float_iterator_t *px`, `ppl_const_Pointset_Powerset_BD_Shape_float_iterator_t y`)
- `int ppl_Pointset_Powerset_BD_Shape_float_iterator_begin` (`ppl_Pointset_Powerset_BD_Shape_float_t ps`, `ppl_Pointset_Powerset_BD_Shape_float_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_float_iterator_end` (`ppl_Pointset_Powerset_BD_Shape_float_t ps`, `ppl_Pointset_Powerset_BD_Shape_float_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_float_iterator_equal_test` (`ppl_const_Pointset_Powerset_BD_Shape_float_iterator_t x`, `ppl_const_Pointset_Powerset_BD_Shape_float_iterator_t y`)
- `int ppl_Pointset_Powerset_BD_Shape_float_iterator_increment` (`ppl_Pointset_Powerset_BD_Shape_float_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_float_iterator_decrement` (`ppl_Pointset_Powerset_BD_Shape_float_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_float_iterator_dereference` (`ppl_const_Pointset_Powerset_BD_Shape_float_iterator_t ps`, `ppl_const_BD_Shape_float_t *d`)
- `int ppl_delete_Pointset_Powerset_BD_Shape_float_iterator` (`ppl_const_Pointset_Powerset_BD_Shape_float_iterator_t psit`)

10.58.1 Detailed Description

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_BD_Shape_float_tag](#).

10.58.2 Friends And Related Function Documentation

- 10.58.2.1** `int ppl_delete_Pointset_Powerset_BD_Shape_float_iterator`
`(ppl_const_Pointset_Powerset_BD_Shape_float_iterator_t psit)` **[related]**
- 10.58.2.2** `int ppl_new_Pointset_Powerset_BD_Shape_float_iterator` `(ppl_Pointset_Powerset_BD_Shape_float_iterator_t * pit)` **[related]**
- 10.58.2.3** `int ppl_new_Pointset_Powerset_BD_Shape_float_iterator_from_iterator` `(ppl_Pointset_Powerset_BD_Shape_float_iterator_t * px,
ppl_const_Pointset_Powerset_BD_Shape_float_iterator_t y)` **[related]**
- 10.58.2.4** `int ppl_Pointset_Powerset_BD_Shape_float_iterator_begin` `(ppl_Pointset_Powerset_BD_Shape_float_t ps, ppl_Pointset_Powerset_BD_Shape_float_iterator_t psit)` **[related]**
- 10.58.2.5** `int ppl_Pointset_Powerset_BD_Shape_float_iterator_decrement`
`(ppl_Pointset_Powerset_BD_Shape_float_iterator_t psit)` **[related]**
- 10.58.2.6** `int ppl_Pointset_Powerset_BD_Shape_float_iterator_dereference` `(ppl_const_Pointset_Powerset_BD_Shape_float_iterator_t ps, ppl_const_BD_Shape_float_t * d)` **[related]**
- 10.58.2.7** `int ppl_Pointset_Powerset_BD_Shape_float_iterator_end` `(ppl_Pointset_Powerset_BD_Shape_float_t ps, ppl_Pointset_Powerset_BD_Shape_float_iterator_t psit)` **[related]**
- 10.58.2.8** `int ppl_Pointset_Powerset_BD_Shape_float_iterator_equal_test`
`(ppl_const_Pointset_Powerset_BD_Shape_float_iterator_t x,
ppl_const_Pointset_Powerset_BD_Shape_float_iterator_t y)` **[related]**

10.58.2.9 int ppl_Pointset_Powerset_BD_Shape_float_iterator_increment (ppl_Pointset_Powerset_BD_Shape_float_iterator_t *psit*) [related]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.59 ppl_Pointset_Powerset_BD_Shape_float_tag Interface Reference

Types and functions for [ppl_Pointset_Powerset_BD_Shape_float_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- int [ppl_delete_Pointset_Powerset_BD_Shape_float](#) (ppl_const_Pointset_Powerset_BD_Shape_float_t ph)
- int [ppl_new_Pointset_Powerset_BD_Shape_float_from_space_dimension](#) (ppl_Pointset_Powerset_BD_Shape_float_t *pph, ppl_dimension_type d, int empty)
- int [ppl_new_Pointset_Powerset_BD_Shape_float_from_Pointset_Powerset_BD_Shape_float](#) (ppl_Pointset_Powerset_BD_Shape_float_t *pph, ppl_const_Pointset_Powerset_BD_Shape_float_t ph)
- int [ppl_new_Pointset_Powerset_BD_Shape_float_from_BD_Shape_float](#) (ppl_Pointset_Powerset_BD_Shape_float_t *pph, ppl_const_BD_Shape_float_t ph)
- int [ppl_new_Pointset_Powerset_BD_Shape_float_from_Pointset_Powerset_BD_Shape_float_with_complexity](#) (ppl_Pointset_Powerset_BD_Shape_float_t *pph, ppl_const_Pointset_Powerset_BD_Shape_float_t ph, int complexity)
- int [ppl_new_Pointset_Powerset_BD_Shape_float_from_BD_Shape_float_with_complexity](#) (ppl_Pointset_Powerset_BD_Shape_float_t *pph, ppl_const_BD_Shape_float_t ph, int complexity)
- int [ppl_new_Pointset_Powerset_BD_Shape_float_from_Constraint_System](#) (ppl_Pointset_Powerset_BD_Shape_float_t *pph, ppl_const_Constraint_System_t cs)
- int [ppl_new_Pointset_Powerset_BD_Shape_float_from_Congruence_System](#) (ppl_Pointset_Powerset_BD_Shape_float_t *pph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_BD_Shape_float_space_dimension](#) (ppl_const_Pointset_Powerset_BD_Shape_float_t ph, ppl_dimension_type *m)
- int [ppl_Pointset_Powerset_BD_Shape_float_affine_dimension](#) (ppl_const_Pointset_Powerset_BD_Shape_float_t ph, ppl_dimension_type *m)
- int [ppl_Pointset_Powerset_BD_Shape_float_relation_with_Constraint](#) (ppl_const_Pointset_Powerset_BD_Shape_float_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_BD_Shape_float_relation_with_Generator](#) (ppl_const_Pointset_Powerset_BD_Shape_float_t ph, ppl_const_Generator_t c)
- int [ppl_Pointset_Powerset_BD_Shape_float_relation_with_Congruence](#) (ppl_const_Pointset_Powerset_BD_Shape_float_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_BD_Shape_float_is_empty](#) (ppl_const_Pointset_Powerset_BD_Shape_float_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_float_is_universe](#) (ppl_const_Pointset_Powerset_BD_Shape_float_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_float_is_bounded](#) (ppl_const_Pointset_Powerset_BD_Shape_float_t ph)

- int [ppl_Pointset_Powerset_BD_Shape_float_contains_integer_point](#) (ppl_const_Pointset_Powerset_BD_Shape_float_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_float_is_topologically_closed](#) (ppl_const_Pointset_Powerset_BD_Shape_float_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_float_is_discrete](#) (ppl_const_Pointset_Powerset_BD_Shape_float_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_float_topological_closure_assign](#) (ppl_Pointset_Powerset_BD_Shape_float_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_float_pairwise_reduce](#) (ppl_Pointset_Powerset_BD_Shape_float_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_float_omega_reduce](#) (ppl_Pointset_Powerset_BD_Shape_float_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_float_bounds_from_above](#) (ppl_const_Pointset_Powerset_BD_Shape_float_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_BD_Shape_float_bounds_from_below](#) (ppl_const_Pointset_Powerset_BD_Shape_float_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_BD_Shape_float_maximize](#) (ppl_const_Pointset_Powerset_BD_Shape_float_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_BD_Shape_float_minimize](#) (ppl_const_Pointset_Powerset_BD_Shape_float_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_BD_Shape_float_maximize_with_point](#) (ppl_const_Pointset_Powerset_BD_Shape_float_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_BD_Shape_float_minimize_with_point](#) (ppl_const_Pointset_Powerset_BD_Shape_float_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_BD_Shape_float_contains_Pointset_Powerset_BD_Shape_float](#) (ppl_const_Pointset_Powerset_BD_Shape_float_t x, ppl_const_Pointset_Powerset_BD_Shape_float_t y)
- int [ppl_Pointset_Powerset_BD_Shape_float_strictly_contains_Pointset_Powerset_BD_Shape_float](#) (ppl_const_Pointset_Powerset_BD_Shape_float_t x, ppl_const_Pointset_Powerset_BD_Shape_float_t y)
- int [ppl_Pointset_Powerset_BD_Shape_float_is_disjoint_from_Pointset_Powerset_BD_Shape_float](#) (ppl_const_Pointset_Powerset_BD_Shape_float_t x, ppl_const_Pointset_Powerset_BD_Shape_float_t y)
- int [ppl_Pointset_Powerset_BD_Shape_float_geometrically_covers_Pointset_Powerset_BD_Shape_float](#) (ppl_const_Pointset_Powerset_BD_Shape_float_t x, ppl_const_Pointset_Powerset_BD_Shape_float_t y)
- int [ppl_Pointset_Powerset_BD_Shape_float_geometrically_equals_Pointset_Powerset_BD_Shape_float](#) (ppl_const_Pointset_Powerset_BD_Shape_float_t x, ppl_const_Pointset_Powerset_BD_Shape_float_t y)
- int [ppl_Pointset_Powerset_BD_Shape_float_equals_Pointset_Powerset_BD_Shape_float](#) (ppl_const_Pointset_Powerset_BD_Shape_float_t x, ppl_const_Pointset_Powerset_BD_Shape_float_t y)
- int [ppl_Pointset_Powerset_BD_Shape_float_OK](#) (ppl_const_Pointset_Powerset_BD_Shape_float_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_float_add_constraint](#) (ppl_Pointset_Powerset_BD_Shape_float_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_BD_Shape_float_add_congruence](#) (ppl_Pointset_Powerset_BD_Shape_float_t ph, ppl_const_Congruence_t c)

- int [ppl_Pointset_Powerset_BD_Shape_float_add_constraints](#) (ppl_Pointset_Powerset_BD_Shape_float_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_BD_Shape_float_add_congruences](#) (ppl_Pointset_Powerset_BD_Shape_float_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_BD_Shape_float_refine_with_constraint](#) (ppl_Pointset_Powerset_BD_Shape_float_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_BD_Shape_float_refine_with_congruence](#) (ppl_Pointset_Powerset_BD_Shape_float_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_BD_Shape_float_refine_with_constraints](#) (ppl_Pointset_Powerset_BD_Shape_float_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_BD_Shape_float_refine_with_congruences](#) (ppl_Pointset_Powerset_BD_Shape_float_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_BD_Shape_float_intersection_assign](#) (ppl_Pointset_Powerset_BD_Shape_float_t x, ppl_const_Pointset_Powerset_BD_Shape_float_t y)
- int [ppl_Pointset_Powerset_BD_Shape_float_upper_bound_assign](#) (ppl_Pointset_Powerset_BD_Shape_float_t x, ppl_const_Pointset_Powerset_BD_Shape_float_t y)
- int [ppl_Pointset_Powerset_BD_Shape_float_difference_assign](#) (ppl_Pointset_Powerset_BD_Shape_float_t x, ppl_const_Pointset_Powerset_BD_Shape_float_t y)
- int [ppl_Pointset_Powerset_BD_Shape_float_concatenate_assign](#) (ppl_Pointset_Powerset_BD_Shape_float_t x, ppl_const_Pointset_Powerset_BD_Shape_float_t y)
- int [ppl_Pointset_Powerset_BD_Shape_float_time_elapse_assign](#) (ppl_Pointset_Powerset_BD_Shape_float_t x, ppl_const_Pointset_Powerset_BD_Shape_float_t y)
- int [ppl_Pointset_Powerset_BD_Shape_float_upper_bound_assign_if_exact](#) (ppl_Pointset_Powerset_BD_Shape_float_t x, ppl_const_Pointset_Powerset_BD_Shape_float_t y)
- int [ppl_Pointset_Powerset_BD_Shape_float_simplify_using_context_assign](#) (ppl_Pointset_Powerset_BD_Shape_float_t x, ppl_const_Pointset_Powerset_BD_Shape_float_t y)
- int [ppl_Pointset_Powerset_BD_Shape_float_constrains](#) (ppl_Pointset_Powerset_BD_Shape_float_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_BD_Shape_float_unconstrain_space_dimension](#) (ppl_Pointset_Powerset_BD_Shape_float_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_BD_Shape_float_unconstrain_space_dimensions](#) (ppl_Pointset_Powerset_BD_Shape_float_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_BD_Shape_float_affine_image](#) (ppl_Pointset_Powerset_BD_Shape_float_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_float_affine_preimage](#) (ppl_Pointset_Powerset_BD_Shape_float_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_float_bounded_affine_image](#) (ppl_Pointset_Powerset_BD_Shape_float_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_float_bounded_affine_preimage](#) (ppl_Pointset_Powerset_BD_Shape_float_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_float_generalized_affine_image](#) (ppl_Pointset_Powerset_BD_Shape_float_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_float_generalized_affine_preimage](#) (ppl_Pointset_Powerset_BD_Shape_float_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_float_generalized_affine_image_lhs_rhs](#) (ppl_Pointset_Powerset_BD_Shape_float_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)

- int [ppl_Pointset_Powerset_BD_Shape_float_generalized_affine_preimage_lhs_rhs](#) (ppl_Pointset_Powerset_BD_Shape_float_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_BD_Shape_float_add_space_dimensions_and_embed](#) (ppl_Pointset_Powerset_BD_Shape_float_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_BD_Shape_float_add_space_dimensions_and_project](#) (ppl_Pointset_Powerset_BD_Shape_float_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_BD_Shape_float_remove_space_dimensions](#) (ppl_Pointset_Powerset_BD_Shape_float_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_BD_Shape_float_remove_higher_space_dimensions](#) (ppl_Pointset_Powerset_BD_Shape_float_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_BD_Shape_float_expand_space_dimension](#) (ppl_Pointset_Powerset_BD_Shape_float_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Pointset_Powerset_BD_Shape_float_fold_space_dimensions](#) (ppl_Pointset_Powerset_BD_Shape_float_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_BD_Shape_float_map_space_dimensions](#) (ppl_Pointset_Powerset_BD_Shape_float_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_Pointset_Powerset_BD_Shape_float_drop_some_non_integer_points](#) (ppl_Pointset_Powerset_BD_Shape_float_t ph, int complexity)
- int [ppl_Pointset_Powerset_BD_Shape_float_drop_some_non_integer_points_2](#) (ppl_Pointset_Powerset_BD_Shape_float_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_Pointset_Powerset_BD_Shape_float_external_memory_in_bytes](#) (ppl_const_Pointset_Powerset_BD_Shape_float_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_BD_Shape_float_total_memory_in_bytes](#) (ppl_const_Pointset_Powerset_BD_Shape_float_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_BD_Shape_float_size](#) (ppl_const_Pointset_Powerset_BD_Shape_float_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_BD_Shape_float_add_disjunct](#) (ppl_Pointset_Powerset_BD_Shape_float_t ps, ppl_const_BD_Shape_float_t d)
- int [ppl_Pointset_Powerset_BD_Shape_float_drop_disjunct](#) (ppl_Pointset_Powerset_BD_Shape_float_t ps, ppl_const_Pointset_Powerset_BD_Shape_float_iterator_t cit, ppl_Pointset_Powerset_BD_Shape_float_iterator_t it)
- int [ppl_Pointset_Powerset_BD_Shape_float_drop_disjuncts](#) (ppl_Pointset_Powerset_BD_Shape_float_t ps, ppl_const_Pointset_Powerset_BD_Shape_float_iterator_t first, ppl_const_Pointset_Powerset_BD_Shape_float_iterator_t last)
- int [ppl_Pointset_Powerset_BD_Shape_float_BHZ03_H79_BHMZ05_widening_assign](#) (ppl_Pointset_Powerset_BD_Shape_float_t x, ppl_const_Pointset_Powerset_BD_Shape_float_t y)
- int [ppl_Pointset_Powerset_BD_Shape_float_BHZ03_H79_H79_widening_assign](#) (ppl_Pointset_Powerset_BD_Shape_float_t x, ppl_const_Pointset_Powerset_BD_Shape_float_t y)
- int [ppl_Pointset_Powerset_BD_Shape_float_BGP99_BHMZ05_extrapolation_assign](#) (ppl_Pointset_Powerset_BD_Shape_float_t x, ppl_const_Pointset_Powerset_BD_Shape_float_t y, int disjuncts)
- int [ppl_Pointset_Powerset_BD_Shape_float_BGP99_H79_extrapolation_assign](#) (ppl_Pointset_Powerset_BD_Shape_float_t x, ppl_const_Pointset_Powerset_BD_Shape_float_t y, int disjuncts)

10.59.1 Detailed Description

Types and functions for [ppl_Pointset_Powerset_BD_Shape_float_tag](#).

10.59.2 Friends And Related Function Documentation

10.59.2.1 `int ppl_delete_Pointset_Powerset_BD_Shape_float (ppl_const_Pointset_Powerset_BD_Shape_float_t ph)` [**related**]

10.59.2.2 `int ppl_new_Pointset_Powerset_BD_Shape_float_from_BD_Shape_float (ppl_Pointset_Powerset_BD_Shape_float_t * pph, ppl_const_BD_Shape_float_t ph)` [**related**]

10.59.2.3 `int ppl_new_Pointset_Powerset_BD_Shape_float_from_BD_Shape_float_with_complexity (ppl_Pointset_Powerset_BD_Shape_float_t * pph, ppl_const_BD_Shape_float_t ph, int complexity)` [**related**]

10.59.2.4 `int ppl_new_Pointset_Powerset_BD_Shape_float_from_Congruence_System (ppl_Pointset_Powerset_BD_Shape_float_t * pph, ppl_const_Congruence_System_t cs)` [**related**]

10.59.2.5 `int ppl_new_Pointset_Powerset_BD_Shape_float_from_Constraint_System (ppl_Pointset_Powerset_BD_Shape_float_t * pph, ppl_const_Constraint_System_t cs)` [**related**]

10.59.2.6 `int ppl_new_Pointset_Powerset_BD_Shape_float_from_Pointset_Powerset_BD_Shape_float (ppl_Pointset_Powerset_BD_Shape_float_t * pph, ppl_const_Pointset_Powerset_BD_Shape_float_t ph)` [**related**]

10.59.2.7 `int ppl_new_Pointset_Powerset_BD_Shape_float_from_Pointset_Powerset_BD_Shape_float_with_complexity (ppl_Pointset_Powerset_BD_Shape_float_t * pph, ppl_const_Pointset_Powerset_BD_Shape_float_t ph, int complexity)` [**related**]

10.59.2.8 `int ppl_new_Pointset_Powerset_BD_Shape_float_from_space_dimension (ppl_Pointset_Powerset_BD_Shape_float_t * pph, ppl_dimension_type d, int empty)` [**related**]

- 10.59.2.9 `int ppl_Pointset_Powerset_BD_Shape_float_add_congruence (ppl_Pointset_Powerset_BD_Shape_float_t ph, ppl_const_Congruence_t c)`
[related]
- 10.59.2.10 `int ppl_Pointset_Powerset_BD_Shape_float_add_congruences (ppl_Pointset_Powerset_BD_Shape_float_t ph, ppl_const_Congruence_System_t cs)`
[related]
- 10.59.2.11 `int ppl_Pointset_Powerset_BD_Shape_float_add_constraint (ppl_Pointset_Powerset_BD_Shape_float_t ph, ppl_const_Constraint_t c)`
[related]
- 10.59.2.12 `int ppl_Pointset_Powerset_BD_Shape_float_add_constraints (ppl_Pointset_Powerset_BD_Shape_float_t ph, ppl_const_Constraint_System_t cs)`
[related]
- 10.59.2.13 `int ppl_Pointset_Powerset_BD_Shape_float_add_disjunct (ppl_Pointset_Powerset_BD_Shape_float_t ps, ppl_const_BD_Shape_float_t d)`
[related]
- 10.59.2.14 `int ppl_Pointset_Powerset_BD_Shape_float_add_space_dimensions_and_embed (ppl_Pointset_Powerset_BD_Shape_float_t ph, ppl_dimension_type d)` [related]
- 10.59.2.15 `int ppl_Pointset_Powerset_BD_Shape_float_add_space_dimensions_and_project (ppl_Pointset_Powerset_BD_Shape_float_t ph, ppl_dimension_type d)` [related]
- 10.59.2.16 `int ppl_Pointset_Powerset_BD_Shape_float_affine_dimension (ppl_const_Pointset_Powerset_BD_Shape_float_t ph, ppl_dimension_type * m)`
[related]

- 10.59.2.17** `int ppl_Pointset_Powerset_BD_Shape_float_affine_image (ppl_Pointset_Powerset_BD_Shape_float_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.59.2.18** `int ppl_Pointset_Powerset_BD_Shape_float_affine_preimage (ppl_Pointset_Powerset_BD_Shape_float_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.59.2.19** `int ppl_Pointset_Powerset_BD_Shape_float_BGP99_BHMZ05_extrapolation_assign (ppl_Pointset_Powerset_BD_Shape_float_t x, ppl_const_Pointset_Powerset_BD_Shape_float_t y, int disjuncts)` [**related**]
- 10.59.2.20** `int ppl_Pointset_Powerset_BD_Shape_float_BGP99_H79_extrapolation_assign (ppl_Pointset_Powerset_BD_Shape_float_t x, ppl_const_Pointset_Powerset_BD_Shape_float_t y, int disjuncts)` [**related**]
- 10.59.2.21** `int ppl_Pointset_Powerset_BD_Shape_float_BHZ03_H79_BHMZ05_widening_assign (ppl_Pointset_Powerset_BD_Shape_float_t x, ppl_const_Pointset_Powerset_BD_Shape_float_t y)` [**related**]
- 10.59.2.22** `int ppl_Pointset_Powerset_BD_Shape_float_BHZ03_H79_H79_widening_assign (ppl_Pointset_Powerset_BD_Shape_float_t x, ppl_const_Pointset_Powerset_BD_Shape_float_t y)` [**related**]
- 10.59.2.23** `int ppl_Pointset_Powerset_BD_Shape_float_bounded_affine_image (ppl_Pointset_Powerset_BD_Shape_float_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [**related**]
- 10.59.2.24** `int ppl_Pointset_Powerset_BD_Shape_float_bounded_affine_preimage (ppl_Pointset_Powerset_BD_Shape_float_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [**related**]

- 10.59.2.25 `int ppl_Pointset_Powerset_BD_Shape_float_bounds_from_above`
 (`ppl_const_Pointset_Powerset_BD_Shape_float_t ph`, `ppl_const_Linear_Expression_t le`) [`related`]
- 10.59.2.26 `int ppl_Pointset_Powerset_BD_Shape_float_bounds_from_below`
 (`ppl_const_Pointset_Powerset_BD_Shape_float_t ph`, `ppl_const_Linear_Expression_t le`) [`related`]
- 10.59.2.27 `int ppl_Pointset_Powerset_BD_Shape_float_concatenate_assign` (`ppl_Pointset_Powerset_BD_Shape_float_t x`, `ppl_const_Pointset_Powerset_BD_Shape_float_t y`) [`related`]
- 10.59.2.28 `int ppl_Pointset_Powerset_BD_Shape_float_constrains` (`ppl_Pointset_Powerset_BD_Shape_float_t ph`, `ppl_dimension_type var`) [`related`]
- 10.59.2.29 `int ppl_Pointset_Powerset_BD_Shape_float_contains_integer_point`
 (`ppl_const_Pointset_Powerset_BD_Shape_float_t ph`) [`related`]
- 10.59.2.30 `int ppl_Pointset_Powerset_BD_Shape_float_contains_Pointset_Powerset_BD_Shape_float` (`ppl_const_Pointset_Powerset_BD_Shape_float_t x`, `ppl_const_Pointset_Powerset_BD_Shape_float_t y`) [`related`]
- 10.59.2.31 `int ppl_Pointset_Powerset_BD_Shape_float_difference_assign` (`ppl_Pointset_Powerset_BD_Shape_float_t x`, `ppl_const_Pointset_Powerset_BD_Shape_float_t y`) [`related`]
- 10.59.2.32 `int ppl_Pointset_Powerset_BD_Shape_float_drop_disjunct` (`ppl_Pointset_Powerset_BD_Shape_float_t ps`, `ppl_const_Pointset_Powerset_BD_Shape_float_iterator_t cit`, `ppl_Pointset_Powerset_BD_Shape_float_iterator_t it`) [`related`]

- 10.59.2.33** `int ppl_Pointset_Powerset_BD_Shape_float_drop_disjuncts (ppl_Pointset_Powerset_BD_Shape_float_t ps, ppl_const_Pointset_Powerset_BD_Shape_float_iterator_t first, ppl_const_Pointset_Powerset_BD_Shape_float_iterator_t last)` [**related**]
- 10.59.2.34** `int ppl_Pointset_Powerset_BD_Shape_float_drop_some_non_integer_points (ppl_Pointset_Powerset_BD_Shape_float_t ph, int complexity)` [**related**]
- 10.59.2.35** `int ppl_Pointset_Powerset_BD_Shape_float_drop_some_non_integer_points_2 (ppl_Pointset_Powerset_BD_Shape_float_t ph, ppl_dimension_type ds[], size_t n, int complexity)` [**related**]
- 10.59.2.36** `int ppl_Pointset_Powerset_BD_Shape_float_equals_Pointset_Powerset_BD_Shape_float (ppl_const_Pointset_Powerset_BD_Shape_float_t x, ppl_const_Pointset_Powerset_BD_Shape_float_t y)` [**related**]
- 10.59.2.37** `int ppl_Pointset_Powerset_BD_Shape_float_expand_space_dimension (ppl_Pointset_Powerset_BD_Shape_float_t ph, ppl_dimension_type d, ppl_dimension_type m)` [**related**]
- 10.59.2.38** `int ppl_Pointset_Powerset_BD_Shape_float_external_memory_in_bytes (ppl_const_Pointset_Powerset_BD_Shape_float_t ps, size_t * sz)` [**related**]
- 10.59.2.39** `int ppl_Pointset_Powerset_BD_Shape_float_fold_space_dimensions (ppl_Pointset_Powerset_BD_Shape_float_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [**related**]
- 10.59.2.40** `int ppl_Pointset_Powerset_BD_Shape_float_generalized_affine_image (ppl_Pointset_Powerset_BD_Shape_float_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]

- 10.59.2.41 `int ppl_Pointset_Powerset_BD_Shape_float_generalized_affine_image_lhs_rhs`
 (`ppl_Pointset_Powerset_BD_Shape_float_t ph`, `ppl_const_Linear_Expression_t lhs`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
 [related]
- 10.59.2.42 `int ppl_Pointset_Powerset_BD_Shape_float_generalized_affine_preimage`
 (`ppl_Pointset_Powerset_BD_Shape_float_t ph`, `ppl_dimension_type var`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [related]
- 10.59.2.43 `int ppl_Pointset_Powerset_BD_Shape_float_generalized_affine_preimage_lhs_rhs`
 (`ppl_Pointset_Powerset_BD_Shape_float_t ph`, `ppl_const_Linear_Expression_t lhs`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
 [related]
- 10.59.2.44 `int ppl_Pointset_Powerset_BD_Shape_float_geometrically_covers_Pointset_-`
`Powerset_BD_Shape_float` (`ppl_const_Pointset_Powerset_BD_Shape_float_t x`,
`ppl_const_Pointset_Powerset_BD_Shape_float_t y`) [related]
- 10.59.2.45 `int ppl_Pointset_Powerset_BD_Shape_float_geometrically_equals_Pointset_-`
`Powerset_BD_Shape_float` (`ppl_const_Pointset_Powerset_BD_Shape_float_t x`,
`ppl_const_Pointset_Powerset_BD_Shape_float_t y`) [related]
- 10.59.2.46 `int ppl_Pointset_Powerset_BD_Shape_float_intersection_assign` (`ppl_Pointset_-`
`Powerset_BD_Shape_float_t x`, `ppl_const_Pointset_Powerset_BD_Shape_float_t y`)
 [related]
- 10.59.2.47 `int ppl_Pointset_Powerset_BD_Shape_float_is_bounded` (`ppl_const_Pointset_-`
`Powerset_BD_Shape_float_t ph`) [related]
- 10.59.2.48 `int ppl_Pointset_Powerset_BD_Shape_float_is_discrete` (`ppl_const_Pointset_-`
`Powerset_BD_Shape_float_t ph`) [related]

- 10.59.2.49** `int ppl_Pointset_Powerset_BD_Shape_float_is_disjoint_from_Pointset_Powerset_BD_Shape_float (ppl_const_Pointset_Powerset_BD_Shape_float_t x, ppl_const_Pointset_Powerset_BD_Shape_float_t y) [related]`
- 10.59.2.50** `int ppl_Pointset_Powerset_BD_Shape_float_is_empty (ppl_const_Pointset_Powerset_BD_Shape_float_t ph) [related]`
- 10.59.2.51** `int ppl_Pointset_Powerset_BD_Shape_float_is_topologically_closed (ppl_const_Pointset_Powerset_BD_Shape_float_t ph) [related]`
- 10.59.2.52** `int ppl_Pointset_Powerset_BD_Shape_float_is_universe (ppl_const_Pointset_Powerset_BD_Shape_float_t ph) [related]`
- 10.59.2.53** `int ppl_Pointset_Powerset_BD_Shape_float_map_space_dimensions (ppl_Pointset_Powerset_BD_Shape_float_t ph, ppl_dimension_type maps[], size_t n) [related]`
- 10.59.2.54** `int ppl_Pointset_Powerset_BD_Shape_float_maximize (ppl_const_Pointset_Powerset_BD_Shape_float_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum) [related]`
- 10.59.2.55** `int ppl_Pointset_Powerset_BD_Shape_float_maximize_with_point (ppl_const_Pointset_Powerset_BD_Shape_float_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point) [related]`
- 10.59.2.56** `int ppl_Pointset_Powerset_BD_Shape_float_minimize (ppl_const_Pointset_Powerset_BD_Shape_float_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum) [related]`

- 10.59.2.57** `int ppl_Pointset_Powerset_BD_Shape_float_minimize_with_point`
 (`ppl_const_Pointset_Powerset_BD_Shape_float_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int * poptimum`, `ppl_Generator_t point`) [`related`]
- 10.59.2.58** `int ppl_Pointset_Powerset_BD_Shape_float_OK` (`ppl_const_Pointset_Powerset_BD_Shape_float_t ph`) [`related`]
- 10.59.2.59** `int ppl_Pointset_Powerset_BD_Shape_float_omega_reduce`
 (`ppl_Pointset_Powerset_BD_Shape_float_t ph`) [`related`]
- 10.59.2.60** `int ppl_Pointset_Powerset_BD_Shape_float_pairwise_reduce`
 (`ppl_Pointset_Powerset_BD_Shape_float_t ph`) [`related`]
- 10.59.2.61** `int ppl_Pointset_Powerset_BD_Shape_float_refine_with_congruence`
 (`ppl_Pointset_Powerset_BD_Shape_float_t ph`, `ppl_const_Congruence_t c`) [`related`]
- 10.59.2.62** `int ppl_Pointset_Powerset_BD_Shape_float_refine_with_congruences`
 (`ppl_Pointset_Powerset_BD_Shape_float_t ph`, `ppl_const_Congruence_System_t cs`) [`related`]
- 10.59.2.63** `int ppl_Pointset_Powerset_BD_Shape_float_refine_with_constraint`
 (`ppl_Pointset_Powerset_BD_Shape_float_t ph`, `ppl_const_Constraint_t c`) [`related`]
- 10.59.2.64** `int ppl_Pointset_Powerset_BD_Shape_float_refine_with_constraints`
 (`ppl_Pointset_Powerset_BD_Shape_float_t ph`, `ppl_const_Constraint_System_t cs`) [`related`]

- 10.59.2.65** int ppl_Pointset_Powerset_BD_Shape_float_relation_with_Congruence
(ppl_const_Pointset_Powerset_BD_Shape_float_t *ph*, ppl_const_Congruence_t *c*)
[related]
- 10.59.2.66** int ppl_Pointset_Powerset_BD_Shape_float_relation_with_Constraint
(ppl_const_Pointset_Powerset_BD_Shape_float_t *ph*, ppl_const_Constraint_t *c*)
[related]
- 10.59.2.67** int ppl_Pointset_Powerset_BD_Shape_float_relation_with_Generator
(ppl_const_Pointset_Powerset_BD_Shape_float_t *ph*, ppl_const_Generator_t *c*)
[related]
- 10.59.2.68** int ppl_Pointset_Powerset_BD_Shape_float_remove_higher_space_dimensions
(ppl_Pointset_Powerset_BD_Shape_float_t *ph*, ppl_dimension_type *d*) [related]
- 10.59.2.69** int ppl_Pointset_Powerset_BD_Shape_float_remove_space_dimensions
(ppl_Pointset_Powerset_BD_Shape_float_t *ph*, ppl_dimension_type *ds*[], size_t *n*)
[related]
- 10.59.2.70** int ppl_Pointset_Powerset_BD_Shape_float_simplify_using_context_assign
(ppl_Pointset_Powerset_BD_Shape_float_t *x*, ppl_const_Pointset_Powerset_BD_-
Shape_float_t *y*) [related]
- 10.59.2.71** int ppl_Pointset_Powerset_BD_Shape_float_size (ppl_const_Pointset_Powerset_BD_-
Shape_float_t *ps*, size_t * *sz*) [related]
- 10.59.2.72** int ppl_Pointset_Powerset_BD_Shape_float_space_dimension
(ppl_const_Pointset_Powerset_BD_Shape_float_t *ph*, ppl_dimension_type * *m*)
[related]

- 10.59.2.73** `int ppl_Pointset_Powerset_BD_Shape_float_strictly_contains_Pointset_Powerset_BD_Shape_float (ppl_const_Pointset_Powerset_BD_Shape_float_t x, ppl_const_Pointset_Powerset_BD_Shape_float_t y)` [**related**]
- 10.59.2.74** `int ppl_Pointset_Powerset_BD_Shape_float_time_elapse_assign (ppl_Pointset_Powerset_BD_Shape_float_t x, ppl_const_Pointset_Powerset_BD_Shape_float_t y)` [**related**]
- 10.59.2.75** `int ppl_Pointset_Powerset_BD_Shape_float_topological_closure_assign (ppl_Pointset_Powerset_BD_Shape_float_t ph)` [**related**]
- 10.59.2.76** `int ppl_Pointset_Powerset_BD_Shape_float_total_memory_in_bytes (ppl_const_Pointset_Powerset_BD_Shape_float_t ps, size_t * sz)` [**related**]
- 10.59.2.77** `int ppl_Pointset_Powerset_BD_Shape_float_unconstrain_space_dimension (ppl_Pointset_Powerset_BD_Shape_float_t ph, ppl_dimension_type var)` [**related**]
- 10.59.2.78** `int ppl_Pointset_Powerset_BD_Shape_float_unconstrain_space_dimensions (ppl_Pointset_Powerset_BD_Shape_float_t ph, ppl_dimension_type ds[], size_t n)` [**related**]
- 10.59.2.79** `int ppl_Pointset_Powerset_BD_Shape_float_upper_bound_assign (ppl_Pointset_Powerset_BD_Shape_float_t x, ppl_const_Pointset_Powerset_BD_Shape_float_t y)` [**related**]
- 10.59.2.80** `int ppl_Pointset_Powerset_BD_Shape_float_upper_bound_assign_if_exact (ppl_Pointset_Powerset_BD_Shape_float_t x, ppl_const_Pointset_Powerset_BD_Shape_float_t y)` [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.60 `ppl_Pointset_Powerset_BD_Shape_int16_t_const_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a const `ppl_Pointset_Powerset_BD_Shape_int16_t_tag`.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_BD_Shape_int16_t_const_iterator` (`ppl_Pointset_Powerset_BD_Shape_int16_t_const_iterator_t *pit`)
- `int ppl_new_Pointset_Powerset_BD_Shape_int16_t_const_iterator_from_const_iterator` (`ppl_Pointset_Powerset_BD_Shape_int16_t_const_iterator_t *px`, `ppl_const_Pointset_Powerset_BD_Shape_int16_t_const_iterator_t y`)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_const_iterator_begin` (`ppl_const_Pointset_Powerset_BD_Shape_int16_t ps`, `ppl_Pointset_Powerset_BD_Shape_int16_t_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_const_iterator_end` (`ppl_const_Pointset_Powerset_BD_Shape_int16_t ps`, `ppl_Pointset_Powerset_BD_Shape_int16_t_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_const_iterator_equal_test` (`ppl_const_Pointset_Powerset_BD_Shape_int16_t_const_iterator_t x`, `ppl_const_Pointset_Powerset_BD_Shape_int16_t_const_iterator_t y`)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_const_iterator_increment` (`ppl_Pointset_Powerset_BD_Shape_int16_t_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_const_iterator_decrement` (`ppl_Pointset_Powerset_BD_Shape_int16_t_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_const_iterator_dereference` (`ppl_const_Pointset_Powerset_BD_Shape_int16_t_const_iterator_t ps`, `ppl_const_BD_Shape_int16_t *d`)
- `int ppl_delete_Pointset_Powerset_BD_Shape_int16_t_const_iterator` (`ppl_const_Pointset_Powerset_BD_Shape_int16_t_const_iterator_t psit`)

10.60.1 Detailed Description

Types and functions for iterating on the disjuncts of a const `ppl_Pointset_Powerset_BD_Shape_int16_t_tag`.

10.60.2 Friends And Related Function Documentation

10.60.2.1 `int ppl_delete_Pointset_Powerset_BD_Shape_int16_t_const_iterator`
(`ppl_const_Pointset_Powerset_BD_Shape_int16_t_const_iterator_t psit`) [**related**]

10.60.2.2 `int ppl_new_Pointset_Powerset_BD_Shape_int16_t_const_iterator`
(`ppl_Pointset_Powerset_BD_Shape_int16_t_const_iterator_t *pit`) [**related**]

- 10.60.2.3 `int ppl_new_Pointset_Powerset_BD_Shape_int16_t_const_iterator_from_const_iterator`
`(ppl_Pointset_Powerset_BD_Shape_int16_t_const_iterator_t * px,`
`ppl_const_Pointset_Powerset_BD_Shape_int16_t_const_iterator_t y) [related]`

- 10.60.2.4 `int ppl_Pointset_Powerset_BD_Shape_int16_t_const_iterator_begin`
`(ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ps, ppl_Pointset_Powerset_BD_-`
`Shape_int16_t_const_iterator_t psit) [related]`

- 10.60.2.5 `int ppl_Pointset_Powerset_BD_Shape_int16_t_const_iterator_decrement`
`(ppl_Pointset_Powerset_BD_Shape_int16_t_const_iterator_t psit) [related]`

- 10.60.2.6 `int ppl_Pointset_Powerset_BD_Shape_int16_t_const_iterator_dereference`
`(ppl_const_Pointset_Powerset_BD_Shape_int16_t_const_iterator_t ps,`
`ppl_const_BD_Shape_int16_t_t * d) [related]`

- 10.60.2.7 `int ppl_Pointset_Powerset_BD_Shape_int16_t_const_iterator_end`
`(ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ps, ppl_Pointset_Powerset_BD_-`
`Shape_int16_t_const_iterator_t psit) [related]`

- 10.60.2.8 `int ppl_Pointset_Powerset_BD_Shape_int16_t_const_iterator_equal_test`
`(ppl_const_Pointset_Powerset_BD_Shape_int16_t_const_iterator_t x,`
`ppl_const_Pointset_Powerset_BD_Shape_int16_t_const_iterator_t y) [related]`

- 10.60.2.9 `int ppl_Pointset_Powerset_BD_Shape_int16_t_const_iterator_increment`
`(ppl_Pointset_Powerset_BD_Shape_int16_t_const_iterator_t psit) [related]`

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.61 `ppl_Pointset_Powerset_BD_Shape_int16_t_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a `ppl_Pointset_Powerset_BD_Shape_int16_t_tag`.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- int [ppl_new_Pointset_Powerset_BD_Shape_int16_t_iterator](#) (ppl_Pointset_Powerset_BD_Shape_int16_t_iterator_t *pit)
- int [ppl_new_Pointset_Powerset_BD_Shape_int16_t_iterator_from_iterator](#) (ppl_Pointset_Powerset_BD_Shape_int16_t_iterator_t *px, ppl_const_Pointset_Powerset_BD_Shape_int16_t_iterator_t y)
- int [ppl_Pointset_Powerset_BD_Shape_int16_t_iterator_begin](#) (ppl_Pointset_Powerset_BD_Shape_int16_t ps, ppl_Pointset_Powerset_BD_Shape_int16_t_iterator_t psit)
- int [ppl_Pointset_Powerset_BD_Shape_int16_t_iterator_end](#) (ppl_Pointset_Powerset_BD_Shape_int16_t ps, ppl_Pointset_Powerset_BD_Shape_int16_t_iterator_t psit)
- int [ppl_Pointset_Powerset_BD_Shape_int16_t_iterator_equal_test](#) (ppl_const_Pointset_Powerset_BD_Shape_int16_t_iterator_t x, ppl_const_Pointset_Powerset_BD_Shape_int16_t_iterator_t y)
- int [ppl_Pointset_Powerset_BD_Shape_int16_t_iterator_increment](#) (ppl_Pointset_Powerset_BD_Shape_int16_t_iterator_t psit)
- int [ppl_Pointset_Powerset_BD_Shape_int16_t_iterator_decrement](#) (ppl_Pointset_Powerset_BD_Shape_int16_t_iterator_t psit)
- int [ppl_Pointset_Powerset_BD_Shape_int16_t_iterator_dereference](#) (ppl_const_Pointset_Powerset_BD_Shape_int16_t_iterator_t ps, ppl_const_BD_Shape_int16_t *d)
- int [ppl_delete_Pointset_Powerset_BD_Shape_int16_t_iterator](#) (ppl_const_Pointset_Powerset_BD_Shape_int16_t_iterator_t psit)

10.61.1 Detailed Description

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_BD_Shape_int16_t_tag](#).

10.61.2 Friends And Related Function Documentation

10.61.2.1 int [ppl_delete_Pointset_Powerset_BD_Shape_int16_t_iterator](#) (ppl_const_Pointset_Powerset_BD_Shape_int16_t_iterator_t *psit*) [**related**]

10.61.2.2 int [ppl_new_Pointset_Powerset_BD_Shape_int16_t_iterator](#) (ppl_Pointset_Powerset_BD_Shape_int16_t_iterator_t * *pit*) [**related**]

10.61.2.3 int [ppl_new_Pointset_Powerset_BD_Shape_int16_t_iterator_from_iterator](#) (ppl_Pointset_Powerset_BD_Shape_int16_t_iterator_t * *px*, ppl_const_Pointset_Powerset_BD_Shape_int16_t_iterator_t *y*) [**related**]

- 10.61.2.4 `int ppl_Pointset_Powerset_BD_Shape_int16_t_iterator_begin (ppl_Pointset_Powerset_BD_Shape_int16_t_t ps, ppl_Pointset_Powerset_BD_Shape_int16_t_iterator_t psit)` **[related]**
- 10.61.2.5 `int ppl_Pointset_Powerset_BD_Shape_int16_t_iterator_decrement (ppl_Pointset_Powerset_BD_Shape_int16_t_iterator_t psit)` **[related]**
- 10.61.2.6 `int ppl_Pointset_Powerset_BD_Shape_int16_t_iterator_dereference (ppl_const_Pointset_Powerset_BD_Shape_int16_t_iterator_t ps, ppl_const_BD_Shape_int16_t_t * d)` **[related]**
- 10.61.2.7 `int ppl_Pointset_Powerset_BD_Shape_int16_t_iterator_end (ppl_Pointset_Powerset_BD_Shape_int16_t_t ps, ppl_Pointset_Powerset_BD_Shape_int16_t_iterator_t psit)` **[related]**
- 10.61.2.8 `int ppl_Pointset_Powerset_BD_Shape_int16_t_iterator_equal_test (ppl_const_Pointset_Powerset_BD_Shape_int16_t_iterator_t x, ppl_const_Pointset_Powerset_BD_Shape_int16_t_iterator_t y)` **[related]**
- 10.61.2.9 `int ppl_Pointset_Powerset_BD_Shape_int16_t_iterator_increment (ppl_Pointset_Powerset_BD_Shape_int16_t_iterator_t psit)` **[related]**

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.62 `ppl_Pointset_Powerset_BD_Shape_int16_t_tag` Interface Reference

Types and functions for [ppl_Pointset_Powerset_BD_Shape_int16_t_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl\_delete\_Pointset\_Powerset\_BD\_Shape\_int16\_t (ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ph)`

- int [ppl_new_Pointset_Powerset_BD_Shape_int16_t_from_space_dimension](#) (ppl_Pointset_Powerset_BD_Shape_int16_t_t *pph, ppl_dimension_type d, int empty)
- int [ppl_new_Pointset_Powerset_BD_Shape_int16_t_from_Pointset_Powerset_BD_Shape_int16_t](#) (ppl_Pointset_Powerset_BD_Shape_int16_t_t *pph, ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ph)
- int [ppl_new_Pointset_Powerset_BD_Shape_int16_t_from_BD_Shape_int16_t](#) (ppl_Pointset_Powerset_BD_Shape_int16_t_t *pph, ppl_const_BD_Shape_int16_t_t ph)
- int [ppl_new_Pointset_Powerset_BD_Shape_int16_t_from_Pointset_Powerset_BD_Shape_int16_t_with_complexity](#) (ppl_Pointset_Powerset_BD_Shape_int16_t_t *pph, ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ph, int complexity)
- int [ppl_new_Pointset_Powerset_BD_Shape_int16_t_from_BD_Shape_int16_t_with_complexity](#) (ppl_Pointset_Powerset_BD_Shape_int16_t_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)
- int [ppl_new_Pointset_Powerset_BD_Shape_int16_t_from_Constraint_System](#) (ppl_Pointset_Powerset_BD_Shape_int16_t_t *pph, ppl_const_Constraint_System_t cs)
- int [ppl_new_Pointset_Powerset_BD_Shape_int16_t_from_Congruence_System](#) (ppl_Pointset_Powerset_BD_Shape_int16_t_t *pph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_BD_Shape_int16_t_space_dimension](#) (ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ph, ppl_dimension_type *m)
- int [ppl_Pointset_Powerset_BD_Shape_int16_t_affine_dimension](#) (ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ph, ppl_dimension_type *m)
- int [ppl_Pointset_Powerset_BD_Shape_int16_t_relation_with_Constraint](#) (ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_BD_Shape_int16_t_relation_with_Generator](#) (ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ph, ppl_const_Generator_t c)
- int [ppl_Pointset_Powerset_BD_Shape_int16_t_relation_with_Congruence](#) (ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_BD_Shape_int16_t_is_empty](#) (ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int16_t_is_universe](#) (ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int16_t_is_bounded](#) (ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int16_t_contains_integer_point](#) (ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int16_t_is_topologically_closed](#) (ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int16_t_is_discrete](#) (ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int16_t_topological_closure_assign](#) (ppl_Pointset_Powerset_BD_Shape_int16_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int16_t_pairwise_reduce](#) (ppl_Pointset_Powerset_BD_Shape_int16_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int16_t_omega_reduce](#) (ppl_Pointset_Powerset_BD_Shape_int16_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int16_t_bounds_from_above](#) (ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_BD_Shape_int16_t_bounds_from_below](#) (ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_BD_Shape_int16_t_maximize](#) (ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)

- `int ppl_Pointset_Powerset_BD_Shape_int16_t_minimize` (`ppl_const_Pointset_Powerset_BD_Shape_int16_t` ph, `ppl_const_Linear_Expression_t` le, `ppl_Coefficient_t` ext_n, `ppl_Coefficient_t` ext_d, `int` *poptimum)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_maximize_with_point` (`ppl_const_Pointset_Powerset_BD_Shape_int16_t` ph, `ppl_const_Linear_Expression_t` le, `ppl_Coefficient_t` ext_n, `ppl_Coefficient_t` ext_d, `int` *poptimum, `ppl_Generator_t` point)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_minimize_with_point` (`ppl_const_Pointset_Powerset_BD_Shape_int16_t` ph, `ppl_const_Linear_Expression_t` le, `ppl_Coefficient_t` ext_n, `ppl_Coefficient_t` ext_d, `int` *poptimum, `ppl_Generator_t` point)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_contains_Pointset_Powerset_BD_Shape_int16_t` (`ppl_const_Pointset_Powerset_BD_Shape_int16_t` x, `ppl_const_Pointset_Powerset_BD_Shape_int16_t` y)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_strictly_contains_Pointset_Powerset_BD_Shape_int16_t` (`ppl_const_Pointset_Powerset_BD_Shape_int16_t` x, `ppl_const_Pointset_Powerset_BD_Shape_int16_t` y)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_is_disjoint_from_Pointset_Powerset_BD_Shape_int16_t` (`ppl_const_Pointset_Powerset_BD_Shape_int16_t` x, `ppl_const_Pointset_Powerset_BD_Shape_int16_t` y)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_geometrically_covers_Pointset_Powerset_BD_Shape_int16_t` (`ppl_const_Pointset_Powerset_BD_Shape_int16_t` x, `ppl_const_Pointset_Powerset_BD_Shape_int16_t` y)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_geometrically_equals_Pointset_Powerset_BD_Shape_int16_t` (`ppl_const_Pointset_Powerset_BD_Shape_int16_t` x, `ppl_const_Pointset_Powerset_BD_Shape_int16_t` y)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_equals_Pointset_Powerset_BD_Shape_int16_t` (`ppl_const_Pointset_Powerset_BD_Shape_int16_t` x, `ppl_const_Pointset_Powerset_BD_Shape_int16_t` y)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_OK` (`ppl_const_Pointset_Powerset_BD_Shape_int16_t` ph)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_add_constraint` (`ppl_Pointset_Powerset_BD_Shape_int16_t` ph, `ppl_const_Constraint_t` c)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_add_congruence` (`ppl_Pointset_Powerset_BD_Shape_int16_t` ph, `ppl_const_Congruence_t` c)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_add_constraints` (`ppl_Pointset_Powerset_BD_Shape_int16_t` ph, `ppl_const_Constraint_System_t` cs)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_add_congruences` (`ppl_Pointset_Powerset_BD_Shape_int16_t` ph, `ppl_const_Congruence_System_t` cs)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_refine_with_constraint` (`ppl_Pointset_Powerset_BD_Shape_int16_t` ph, `ppl_const_Constraint_t` c)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_refine_with_congruence` (`ppl_Pointset_Powerset_BD_Shape_int16_t` ph, `ppl_const_Congruence_t` c)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_refine_with_constraints` (`ppl_Pointset_Powerset_BD_Shape_int16_t` ph, `ppl_const_Constraint_System_t` cs)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_refine_with_congruences` (`ppl_Pointset_Powerset_BD_Shape_int16_t` ph, `ppl_const_Congruence_System_t` cs)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_intersection_assign` (`ppl_Pointset_Powerset_BD_Shape_int16_t` x, `ppl_const_Pointset_Powerset_BD_Shape_int16_t` y)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_upper_bound_assign` (`ppl_Pointset_Powerset_BD_Shape_int16_t` x, `ppl_const_Pointset_Powerset_BD_Shape_int16_t` y)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_difference_assign` (`ppl_Pointset_Powerset_BD_Shape_int16_t` x, `ppl_const_Pointset_Powerset_BD_Shape_int16_t` y)

- `int ppl_Pointset_Powerset_BD_Shape_int16_t_concatenate_assign` (`ppl_Pointset_Powerset_BD_Shape_int16_t` x, `ppl_const_Pointset_Powerset_BD_Shape_int16_t` y)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_time_elapse_assign` (`ppl_Pointset_Powerset_BD_Shape_int16_t` x, `ppl_const_Pointset_Powerset_BD_Shape_int16_t` y)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_upper_bound_assign_if_exact` (`ppl_Pointset_Powerset_BD_Shape_int16_t` x, `ppl_const_Pointset_Powerset_BD_Shape_int16_t` y)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_simplify_using_context_assign` (`ppl_Pointset_Powerset_BD_Shape_int16_t` x, `ppl_const_Pointset_Powerset_BD_Shape_int16_t` y)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_constrains` (`ppl_Pointset_Powerset_BD_Shape_int16_t` ph, `ppl_dimension_type` var)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_unconstrain_space_dimension` (`ppl_Pointset_Powerset_BD_Shape_int16_t` ph, `ppl_dimension_type` var)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_unconstrain_space_dimensions` (`ppl_Pointset_Powerset_BD_Shape_int16_t` ph, `ppl_dimension_type` ds[], `size_t` n)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_affine_image` (`ppl_Pointset_Powerset_BD_Shape_int16_t` ph, `ppl_dimension_type` var, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_affine_preimage` (`ppl_Pointset_Powerset_BD_Shape_int16_t` ph, `ppl_dimension_type` var, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_bounded_affine_image` (`ppl_Pointset_Powerset_BD_Shape_int16_t` ph, `ppl_dimension_type` var, `ppl_const_Linear_Expression_t` lb, `ppl_const_Linear_Expression_t` ub, `ppl_const_Coefficient_t` d)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_bounded_affine_preimage` (`ppl_Pointset_Powerset_BD_Shape_int16_t` ph, `ppl_dimension_type` var, `ppl_const_Linear_Expression_t` lb, `ppl_const_Linear_Expression_t` ub, `ppl_const_Coefficient_t` d)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_generalized_affine_image` (`ppl_Pointset_Powerset_BD_Shape_int16_t` ph, `ppl_dimension_type` var, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_generalized_affine_preimage` (`ppl_Pointset_Powerset_BD_Shape_int16_t` ph, `ppl_dimension_type` var, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_generalized_affine_image_lhs_rhs` (`ppl_Pointset_Powerset_BD_Shape_int16_t` ph, `ppl_const_Linear_Expression_t` lhs, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` rhs)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_generalized_affine_preimage_lhs_rhs` (`ppl_Pointset_Powerset_BD_Shape_int16_t` ph, `ppl_const_Linear_Expression_t` lhs, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` rhs)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_add_space_dimensions_and_embed` (`ppl_Pointset_Powerset_BD_Shape_int16_t` ph, `ppl_dimension_type` d)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_add_space_dimensions_and_project` (`ppl_Pointset_Powerset_BD_Shape_int16_t` ph, `ppl_dimension_type` d)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_remove_space_dimensions` (`ppl_Pointset_Powerset_BD_Shape_int16_t` ph, `ppl_dimension_type` ds[], `size_t` n)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_remove_higher_space_dimensions` (`ppl_Pointset_Powerset_BD_Shape_int16_t` ph, `ppl_dimension_type` d)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_expand_space_dimension` (`ppl_Pointset_Powerset_BD_Shape_int16_t` ph, `ppl_dimension_type` d, `ppl_dimension_type` m)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_fold_space_dimensions` (`ppl_Pointset_Powerset_BD_Shape_int16_t` ph, `ppl_dimension_type` ds[], `size_t` n, `ppl_dimension_type` d)
- `int ppl_Pointset_Powerset_BD_Shape_int16_t_map_space_dimensions` (`ppl_Pointset_Powerset_BD_Shape_int16_t` ph, `ppl_dimension_type` maps[], `size_t` n)

- [int ppl_Pointset_Powerset_BD_Shape_int16_t_drop_some_non_integer_points](#) (ppl_Pointset_Powerset_BD_Shape_int16_t ph, int complexity)
- [int ppl_Pointset_Powerset_BD_Shape_int16_t_drop_some_non_integer_points_2](#) (ppl_Pointset_Powerset_BD_Shape_int16_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- [int ppl_Pointset_Powerset_BD_Shape_int16_t_external_memory_in_bytes](#) (ppl_const_Pointset_Powerset_BD_Shape_int16_t ps, size_t *sz)
- [int ppl_Pointset_Powerset_BD_Shape_int16_t_total_memory_in_bytes](#) (ppl_const_Pointset_Powerset_BD_Shape_int16_t ps, size_t *sz)
- [int ppl_Pointset_Powerset_BD_Shape_int16_t_size](#) (ppl_const_Pointset_Powerset_BD_Shape_int16_t ps, size_t *sz)
- [int ppl_Pointset_Powerset_BD_Shape_int16_t_add_disjunct](#) (ppl_Pointset_Powerset_BD_Shape_int16_t ps, ppl_const_BD_Shape_int16_t d)
- [int ppl_Pointset_Powerset_BD_Shape_int16_t_drop_disjunct](#) (ppl_Pointset_Powerset_BD_Shape_int16_t ps, ppl_const_Pointset_Powerset_BD_Shape_int16_t_iterator_t cit, ppl_Pointset_Powerset_BD_Shape_int16_t_iterator_t it)
- [int ppl_Pointset_Powerset_BD_Shape_int16_t_drop_disjuncts](#) (ppl_Pointset_Powerset_BD_Shape_int16_t ps, ppl_const_Pointset_Powerset_BD_Shape_int16_t_iterator_t first, ppl_const_Pointset_Powerset_BD_Shape_int16_t_iterator_t last)
- [int ppl_Pointset_Powerset_BD_Shape_int16_t_BHZ03_H79_BHMZ05_widening_assign](#) (ppl_Pointset_Powerset_BD_Shape_int16_t x, ppl_const_Pointset_Powerset_BD_Shape_int16_t y)
- [int ppl_Pointset_Powerset_BD_Shape_int16_t_BHZ03_H79_H79_widening_assign](#) (ppl_Pointset_Powerset_BD_Shape_int16_t x, ppl_const_Pointset_Powerset_BD_Shape_int16_t y)
- [int ppl_Pointset_Powerset_BD_Shape_int16_t_BGP99_BHMZ05_extrapolation_assign](#) (ppl_Pointset_Powerset_BD_Shape_int16_t x, ppl_const_Pointset_Powerset_BD_Shape_int16_t y, int disjuncts)
- [int ppl_Pointset_Powerset_BD_Shape_int16_t_BGP99_H79_extrapolation_assign](#) (ppl_Pointset_Powerset_BD_Shape_int16_t x, ppl_const_Pointset_Powerset_BD_Shape_int16_t y, int disjuncts)

10.62.1 Detailed Description

Types and functions for [ppl_Pointset_Powerset_BD_Shape_int16_t_tag](#).

10.62.2 Friends And Related Function Documentation

10.62.2.1 [int ppl_delete_Pointset_Powerset_BD_Shape_int16_t](#) (ppl_const_Pointset_Powerset_BD_Shape_int16_t ph) [[related](#)]

10.62.2.2 [int ppl_new_Pointset_Powerset_BD_Shape_int16_t_from_BD_Shape_int16_t](#) (ppl_Pointset_Powerset_BD_Shape_int16_t *pph, ppl_const_BD_Shape_int16_t ph) [[related](#)]

- 10.62.2.3 `int ppl_new_Pointset_Powerset_BD_Shape_int16_t_from_BD_Shape_int16_t_with_complexity (ppl_Pointset_Powerset_BD_Shape_int16_t * pph, ppl_const_BD_Shape_int16_t ph, int complexity)` [`related`]
- 10.62.2.4 `int ppl_new_Pointset_Powerset_BD_Shape_int16_t_from_Congruence_System (ppl_Pointset_Powerset_BD_Shape_int16_t * pph, ppl_const_Congruence_System_t cs)` [`related`]
- 10.62.2.5 `int ppl_new_Pointset_Powerset_BD_Shape_int16_t_from_Constraint_System (ppl_Pointset_Powerset_BD_Shape_int16_t * pph, ppl_const_Constraint_System_t cs)` [`related`]
- 10.62.2.6 `int ppl_new_Pointset_Powerset_BD_Shape_int16_t_from_Pointset_Powerset_BD_Shape_int16_t (ppl_Pointset_Powerset_BD_Shape_int16_t * pph, ppl_const_Pointset_Powerset_BD_Shape_int16_t ph)` [`related`]
- 10.62.2.7 `int ppl_new_Pointset_Powerset_BD_Shape_int16_t_from_Pointset_Powerset_BD_Shape_int16_t_with_complexity (ppl_Pointset_Powerset_BD_Shape_int16_t * pph, ppl_const_Pointset_Powerset_BD_Shape_int16_t ph, int complexity)` [`related`]
- 10.62.2.8 `int ppl_new_Pointset_Powerset_BD_Shape_int16_t_from_space_dimension (ppl_Pointset_Powerset_BD_Shape_int16_t * pph, ppl_dimension_type d, int empty)` [`related`]
- 10.62.2.9 `int ppl_Pointset_Powerset_BD_Shape_int16_t_add_congruence (ppl_Pointset_Powerset_BD_Shape_int16_t ph, ppl_const_Congruence_t c)` [`related`]
- 10.62.2.10 `int ppl_Pointset_Powerset_BD_Shape_int16_t_add_congruences (ppl_Pointset_Powerset_BD_Shape_int16_t ph, ppl_const_Congruence_System_t cs)` [`related`]

- 10.62.2.11** `int ppl_Pointset_Powerset_BD_Shape_int16_t_add_constraint`
 (`ppl_Pointset_Powerset_BD_Shape_int16_t t ph`, `ppl_const_Constraint_t c`)
 [related]
- 10.62.2.12** `int ppl_Pointset_Powerset_BD_Shape_int16_t_add_constraints`
 (`ppl_Pointset_Powerset_BD_Shape_int16_t t ph`, `ppl_const_Constraint_System_t cs`)
 [related]
- 10.62.2.13** `int ppl_Pointset_Powerset_BD_Shape_int16_t_add_disjunct` (`ppl_Pointset_Powerset_BD_Shape_int16_t ps`, `ppl_const_BD_Shape_int16_t d`)
 [related]
- 10.62.2.14** `int ppl_Pointset_Powerset_BD_Shape_int16_t_add_space_dimensions_and_embed`
 (`ppl_Pointset_Powerset_BD_Shape_int16_t t ph`, `ppl_dimension_type d`)
 [related]
- 10.62.2.15** `int ppl_Pointset_Powerset_BD_Shape_int16_t_add_space_dimensions_and_project`
 (`ppl_Pointset_Powerset_BD_Shape_int16_t t ph`, `ppl_dimension_type d`)
 [related]
- 10.62.2.16** `int ppl_Pointset_Powerset_BD_Shape_int16_t_affine_dimension`
 (`ppl_const_Pointset_Powerset_BD_Shape_int16_t t ph`, `ppl_dimension_type * m`)
 [related]
- 10.62.2.17** `int ppl_Pointset_Powerset_BD_Shape_int16_t_affine_image` (`ppl_Pointset_Powerset_BD_Shape_int16_t t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`) [related]
- 10.62.2.18** `int ppl_Pointset_Powerset_BD_Shape_int16_t_affine_preimage`
 (`ppl_Pointset_Powerset_BD_Shape_int16_t t ph`, `ppl_dimension_type var`,
`ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`) [related]

- 10.62.2.19 `int ppl_Pointset_Powerset_BD_Shape_int16_t_BGP99_BHMZ05_-
extrapolation_assign (ppl_Pointset_Powerset_BD_Shape_int16_t_t x,
ppl_const_Pointset_Powerset_BD_Shape_int16_t_t y, int disjuncts)` [`related`]
- 10.62.2.20 `int ppl_Pointset_Powerset_BD_Shape_int16_t_BGP99_H79_-
extrapolation_assign (ppl_Pointset_Powerset_BD_Shape_int16_t_t x,
ppl_const_Pointset_Powerset_BD_Shape_int16_t_t y, int disjuncts)` [`related`]
- 10.62.2.21 `int ppl_Pointset_Powerset_BD_Shape_int16_t_BHZ03_H79_BHMZ05_-
widening_assign (ppl_Pointset_Powerset_BD_Shape_int16_t_t x,
ppl_const_Pointset_Powerset_BD_Shape_int16_t_t y)` [`related`]
- 10.62.2.22 `int ppl_Pointset_Powerset_BD_Shape_int16_t_BHZ03_H79_H79_-
widening_assign (ppl_Pointset_Powerset_BD_Shape_int16_t_t x,
ppl_const_Pointset_Powerset_BD_Shape_int16_t_t y)` [`related`]
- 10.62.2.23 `int ppl_Pointset_Powerset_BD_Shape_int16_t_bounded_affine_image
(ppl_Pointset_Powerset_BD_Shape_int16_t_t ph, ppl_dimension_type var,
ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub,
ppl_const_Coefficient_t d)` [`related`]
- 10.62.2.24 `int ppl_Pointset_Powerset_BD_Shape_int16_t_bounded_affine_preimage
(ppl_Pointset_Powerset_BD_Shape_int16_t_t ph, ppl_dimension_type var,
ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub,
ppl_const_Coefficient_t d)` [`related`]
- 10.62.2.25 `int ppl_Pointset_Powerset_BD_Shape_int16_t_bounds_from_above (ppl_const_
Pointset_Powerset_BD_Shape_int16_t_t ph, ppl_const_Linear_Expression_t le)`
[`related`]
- 10.62.2.26 `int ppl_Pointset_Powerset_BD_Shape_int16_t_bounds_from_below (ppl_const_
Pointset_Powerset_BD_Shape_int16_t_t ph, ppl_const_Linear_Expression_t le)`
[`related`]

- 10.62.2.27 `int ppl_Pointset_Powerset_BD_Shape_int16_t_concatenate_assign (ppl_Pointset_Powerset_BD_Shape_int16_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int16_t_t y) [related]`
- 10.62.2.28 `int ppl_Pointset_Powerset_BD_Shape_int16_t_constrains (ppl_Pointset_Powerset_BD_Shape_int16_t_t ph, ppl_dimension_type var) [related]`
- 10.62.2.29 `int ppl_Pointset_Powerset_BD_Shape_int16_t_contains_integer_point (ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ph) [related]`
- 10.62.2.30 `int ppl_Pointset_Powerset_BD_Shape_int16_t_contains_Pointset_Powerset_BD_Shape_int16_t (ppl_const_Pointset_Powerset_BD_Shape_int16_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int16_t_t y) [related]`
- 10.62.2.31 `int ppl_Pointset_Powerset_BD_Shape_int16_t_difference_assign (ppl_Pointset_Powerset_BD_Shape_int16_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int16_t_t y) [related]`
- 10.62.2.32 `int ppl_Pointset_Powerset_BD_Shape_int16_t_drop_disjunct (ppl_Pointset_Powerset_BD_Shape_int16_t_t ps, ppl_const_Pointset_Powerset_BD_Shape_int16_t_iterator_t cit, ppl_Pointset_Powerset_BD_Shape_int16_t_iterator_t it) [related]`
- 10.62.2.33 `int ppl_Pointset_Powerset_BD_Shape_int16_t_drop_disjuncts (ppl_Pointset_Powerset_BD_Shape_int16_t_t ps, ppl_const_Pointset_Powerset_BD_Shape_int16_t_iterator_t first, ppl_const_Pointset_Powerset_BD_Shape_int16_t_iterator_t last) [related]`
- 10.62.2.34 `int ppl_Pointset_Powerset_BD_Shape_int16_t_drop_some_non_integer_points (ppl_Pointset_Powerset_BD_Shape_int16_t_t ph, int complexity) [related]`

- 10.62.2.35** `int ppl_Pointset_Powerset_BD_Shape_int16_t_drop_some_non_integer_points_2`
 (`ppl_Pointset_Powerset_BD_Shape_int16_t_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`,
`int complexity`) [**related**]
- 10.62.2.36** `int ppl_Pointset_Powerset_BD_Shape_int16_t_equals_Pointset_Powerset_`
`BD_Shape_int16_t` (`ppl_const_Pointset_Powerset_BD_Shape_int16_t_t x`,
`ppl_const_Pointset_Powerset_BD_Shape_int16_t_t y`) [**related**]
- 10.62.2.37** `int ppl_Pointset_Powerset_BD_Shape_int16_t_expand_space_dimension`
 (`ppl_Pointset_Powerset_BD_Shape_int16_t_t ph`, `ppl_dimension_type d`,
`ppl_dimension_type m`) [**related**]
- 10.62.2.38** `int ppl_Pointset_Powerset_BD_Shape_int16_t_external_memory_in_bytes`
 (`ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ps`, `size_t * sz`) [**related**]
- 10.62.2.39** `int ppl_Pointset_Powerset_BD_Shape_int16_t_fold_space_dimensions`
 (`ppl_Pointset_Powerset_BD_Shape_int16_t_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`,
`ppl_dimension_type d`) [**related**]
- 10.62.2.40** `int ppl_Pointset_Powerset_BD_Shape_int16_t_generalized_affine_image`
 (`ppl_Pointset_Powerset_BD_Shape_int16_t_t ph`, `ppl_dimension_type var`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [**related**]
- 10.62.2.41** `int ppl_Pointset_Powerset_BD_Shape_int16_t_generalized_affine_image_lhs_rhs`
 (`ppl_Pointset_Powerset_BD_Shape_int16_t_t ph`, `ppl_const_Linear_Expression_t`
`lhs`, `enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
 [**related**]
- 10.62.2.42** `int ppl_Pointset_Powerset_BD_Shape_int16_t_generalized_affine_preimage`
 (`ppl_Pointset_Powerset_BD_Shape_int16_t_t ph`, `ppl_dimension_type var`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [**related**]

- 10.62.2.43 `int ppl_Pointset_Powerset_BD_Shape_int16_t_generalized_affine_preimage_lhs_rhs`
 (`ppl_Pointset_Powerset_BD_Shape_int16_t_t ph`, `ppl_const_Linear_Expression_t lhs`, `enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
 [related]
- 10.62.2.44 `int ppl_Pointset_Powerset_BD_Shape_int16_t_geometrically_covers_Pointset_Powerset_BD_Shape_int16_t`
 (`ppl_const_Pointset_Powerset_BD_Shape_int16_t_t x`, `ppl_const_Pointset_Powerset_BD_Shape_int16_t_t y`) [related]
- 10.62.2.45 `int ppl_Pointset_Powerset_BD_Shape_int16_t_geometrically_equals_Pointset_Powerset_BD_Shape_int16_t`
 (`ppl_const_Pointset_Powerset_BD_Shape_int16_t_t x`, `ppl_const_Pointset_Powerset_BD_Shape_int16_t_t y`) [related]
- 10.62.2.46 `int ppl_Pointset_Powerset_BD_Shape_int16_t_intersection_assign`
 (`ppl_Pointset_Powerset_BD_Shape_int16_t_t x`, `ppl_const_Pointset_Powerset_BD_Shape_int16_t_t y`) [related]
- 10.62.2.47 `int ppl_Pointset_Powerset_BD_Shape_int16_t_is_bounded`
 (`ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ph`) [related]
- 10.62.2.48 `int ppl_Pointset_Powerset_BD_Shape_int16_t_is_discrete`
 (`ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ph`) [related]
- 10.62.2.49 `int ppl_Pointset_Powerset_BD_Shape_int16_t_is_disjoint_from_Pointset_Powerset_BD_Shape_int16_t`
 (`ppl_const_Pointset_Powerset_BD_Shape_int16_t_t x`, `ppl_const_Pointset_Powerset_BD_Shape_int16_t_t y`) [related]
- 10.62.2.50 `int ppl_Pointset_Powerset_BD_Shape_int16_t_is_empty`
 (`ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ph`) [related]

- 10.62.2.51** `int ppl_Pointset_Powerset_BD_Shape_int16_t_is_topologically_closed`
`(ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ph)` [**related**]
- 10.62.2.52** `int ppl_Pointset_Powerset_BD_Shape_int16_t_is_universe`
`(ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ph)` [**related**]
- 10.62.2.53** `int ppl_Pointset_Powerset_BD_Shape_int16_t_map_space_dimensions`
`(ppl_Pointset_Powerset_BD_Shape_int16_t_t ph, ppl_dimension_type maps[], size_t n)` [**related**]
- 10.62.2.54** `int ppl_Pointset_Powerset_BD_Shape_int16_t_maximize` `(ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [**related**]
- 10.62.2.55** `int ppl_Pointset_Powerset_BD_Shape_int16_t_maximize_with_point` `(ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` [**related**]
- 10.62.2.56** `int ppl_Pointset_Powerset_BD_Shape_int16_t_minimize` `(ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [**related**]
- 10.62.2.57** `int ppl_Pointset_Powerset_BD_Shape_int16_t_minimize_with_point` `(ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` [**related**]
- 10.62.2.58** `int ppl_Pointset_Powerset_BD_Shape_int16_t_OK` `(ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ph)` [**related**]

- 10.62.2.59 `int ppl_Pointset_Powerset_BD_Shape_int16_t_omega_reduce`
`(ppl_Pointset_Powerset_BD_Shape_int16_t_t ph)` [`related`]

- 10.62.2.60 `int ppl_Pointset_Powerset_BD_Shape_int16_t_pairwise_reduce`
`(ppl_Pointset_Powerset_BD_Shape_int16_t_t ph)` [`related`]

- 10.62.2.61 `int ppl_Pointset_Powerset_BD_Shape_int16_t_refine_with_congruence`
`(ppl_Pointset_Powerset_BD_Shape_int16_t_t ph, ppl_const_Congruence_t c)`
`[related]`

- 10.62.2.62 `int ppl_Pointset_Powerset_BD_Shape_int16_t_refine_with_congruences`
`(ppl_Pointset_Powerset_BD_Shape_int16_t_t ph, ppl_const_Congruence_System_t cs)`
`[related]`

- 10.62.2.63 `int ppl_Pointset_Powerset_BD_Shape_int16_t_refine_with_constraint`
`(ppl_Pointset_Powerset_BD_Shape_int16_t_t ph, ppl_const_Constraint_t c)`
`[related]`

- 10.62.2.64 `int ppl_Pointset_Powerset_BD_Shape_int16_t_refine_with_constraints`
`(ppl_Pointset_Powerset_BD_Shape_int16_t_t ph, ppl_const_Constraint_System_t cs)`
`[related]`

- 10.62.2.65 `int ppl_Pointset_Powerset_BD_Shape_int16_t_relation_with_Congruence`
`(ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ph, ppl_const_Congruence_t c)`
`[related]`

- 10.62.2.66 `int ppl_Pointset_Powerset_BD_Shape_int16_t_relation_with_Constraint`
`(ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ph, ppl_const_Constraint_t c)`
`[related]`

- 10.62.2.67** int ppl_Pointset_Powerset_BD_Shape_int16_t_relation_with_Generator
(ppl_const_Pointset_Powerset_BD_Shape_int16_t *ph*, ppl_const_Generator_t *c*)
[related]
- 10.62.2.68** int ppl_Pointset_Powerset_BD_Shape_int16_t_remove_higher_space_dimensions
(ppl_Pointset_Powerset_BD_Shape_int16_t *ph*, ppl_dimension_type *d*)
[related]
- 10.62.2.69** int ppl_Pointset_Powerset_BD_Shape_int16_t_remove_space_dimensions
(ppl_Pointset_Powerset_BD_Shape_int16_t *ph*, ppl_dimension_type *ds*[], size_t *n*)
[related]
- 10.62.2.70** int ppl_Pointset_Powerset_BD_Shape_int16_t_simplify_using_-
context_assign (ppl_Pointset_Powerset_BD_Shape_int16_t *x*,
ppl_const_Pointset_Powerset_BD_Shape_int16_t *y*) [related]
- 10.62.2.71** int ppl_Pointset_Powerset_BD_Shape_int16_t_size (ppl_const_Pointset_Powerset_-
BD_Shape_int16_t *ps*, size_t * *sz*) [related]
- 10.62.2.72** int ppl_Pointset_Powerset_BD_Shape_int16_t_space_dimension
(ppl_const_Pointset_Powerset_BD_Shape_int16_t *ph*, ppl_dimension_type * *m*)
[related]
- 10.62.2.73** int ppl_Pointset_Powerset_BD_Shape_int16_t_strictly_contains_Pointset_-
Powerset_BD_Shape_int16_t (ppl_const_Pointset_Powerset_BD_Shape_int16_t *x*,
ppl_const_Pointset_Powerset_BD_Shape_int16_t *y*) [related]
- 10.62.2.74** int ppl_Pointset_Powerset_BD_Shape_int16_t_time_elapse_assign (ppl_Pointset_-
Powerset_BD_Shape_int16_t *x*, ppl_const_Pointset_Powerset_BD_Shape_int16_t
y) [related]

- 10.62.2.75** `int ppl_Pointset_Powerset_BD_Shape_int16_t_topological_closure_assign`
`(ppl_Pointset_Powerset_BD_Shape_int16_t_t ph)` [**related**]
- 10.62.2.76** `int ppl_Pointset_Powerset_BD_Shape_int16_t_total_memory_in_bytes`
`(ppl_const_Pointset_Powerset_BD_Shape_int16_t_t ps, size_t * sz)` [**related**]
- 10.62.2.77** `int ppl_Pointset_Powerset_BD_Shape_int16_t_unconstrain_space_dimension`
`(ppl_Pointset_Powerset_BD_Shape_int16_t_t ph, ppl_dimension_type var)`
[**related**]
- 10.62.2.78** `int ppl_Pointset_Powerset_BD_Shape_int16_t_unconstrain_space_dimensions`
`(ppl_Pointset_Powerset_BD_Shape_int16_t_t ph, ppl_dimension_type ds[], size_t n)`
[**related**]
- 10.62.2.79** `int ppl_Pointset_Powerset_BD_Shape_int16_t_upper_bound_assign` `(ppl_Pointset_Powerset_BD_Shape_int16_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int16_t_t y)` [**related**]
- 10.62.2.80** `int ppl_Pointset_Powerset_BD_Shape_int16_t_upper_bound_assign_if_exact` `(ppl_Pointset_Powerset_BD_Shape_int16_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int16_t_t y)` [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.63 `ppl_Pointset_Powerset_BD_Shape_int32_t_const_iterator_tag` **Interface Reference**

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_BD_Shape_int32_t_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_BD_Shape_int32_t_const_iterator` (`ppl_Pointset_Powerset_BD_Shape_int32_t_const_iterator_t *pit`)
- `int ppl_new_Pointset_Powerset_BD_Shape_int32_t_const_iterator_from_const_iterator` (`ppl_Pointset_Powerset_BD_Shape_int32_t_const_iterator_t *px`, `ppl_const_Pointset_Powerset_BD_Shape_int32_t_const_iterator_t y`)
- `int ppl_Pointset_Powerset_BD_Shape_int32_t_const_iterator_begin` (`ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ps`, `ppl_Pointset_Powerset_BD_Shape_int32_t_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_int32_t_const_iterator_end` (`ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ps`, `ppl_Pointset_Powerset_BD_Shape_int32_t_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_int32_t_const_iterator_equal_test` (`ppl_const_Pointset_Powerset_BD_Shape_int32_t_const_iterator_t x`, `ppl_const_Pointset_Powerset_BD_Shape_int32_t_const_iterator_t y`)
- `int ppl_Pointset_Powerset_BD_Shape_int32_t_const_iterator_increment` (`ppl_Pointset_Powerset_BD_Shape_int32_t_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_int32_t_const_iterator_decrement` (`ppl_Pointset_Powerset_BD_Shape_int32_t_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_int32_t_const_iterator_dereference` (`ppl_const_Pointset_Powerset_BD_Shape_int32_t_const_iterator_t ps`, `ppl_const_BD_Shape_int32_t_t *d`)
- `int ppl_delete_Pointset_Powerset_BD_Shape_int32_t_const_iterator` (`ppl_const_Pointset_Powerset_BD_Shape_int32_t_const_iterator_t psit`)

10.63.1 Detailed Description

Types and functions for iterating on the disjuncts of a const `ppl_Pointset_Powerset_BD_Shape_int32_t_tag`.

10.63.2 Friends And Related Function Documentation

10.63.2.1 `int ppl_delete_Pointset_Powerset_BD_Shape_int32_t_const_iterator`
(`ppl_const_Pointset_Powerset_BD_Shape_int32_t_const_iterator_t psit`) [**related**]

10.63.2.2 `int ppl_new_Pointset_Powerset_BD_Shape_int32_t_const_iterator`
(`ppl_Pointset_Powerset_BD_Shape_int32_t_const_iterator_t *pit`) [**related**]

10.63.2.3 `int ppl_new_Pointset_Powerset_BD_Shape_int32_t_const_iterator_from_const_iterator`
(`ppl_Pointset_Powerset_BD_Shape_int32_t_const_iterator_t *px`,
`ppl_const_Pointset_Powerset_BD_Shape_int32_t_const_iterator_t y`) [**related**]

10.63.2.4 `int ppl_Pointset_Powerset_BD_Shape_int32_t_const_iterator_begin`
(`ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ps`, `ppl_Pointset_Powerset_BD_Shape_int32_t_const_iterator_t psit`) [**related**]

- 10.63.2.5 `int ppl_Pointset_Powerset_BD_Shape_int32_t_const_iterator_decrement`
 (`ppl_Pointset_Powerset_BD_Shape_int32_t_const_iterator_t psit`) [**related**]
- 10.63.2.6 `int ppl_Pointset_Powerset_BD_Shape_int32_t_const_iterator_dereference`
 (`ppl_const_Pointset_Powerset_BD_Shape_int32_t_const_iterator_t ps`,
`ppl_const_BD_Shape_int32_t_t * d`) [**related**]
- 10.63.2.7 `int ppl_Pointset_Powerset_BD_Shape_int32_t_const_iterator_end`
 (`ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ps`, `ppl_Pointset_Powerset_BD_-`
`Shape_int32_t_const_iterator_t psit`) [**related**]
- 10.63.2.8 `int ppl_Pointset_Powerset_BD_Shape_int32_t_const_iterator_equal_test`
 (`ppl_const_Pointset_Powerset_BD_Shape_int32_t_const_iterator_t x`,
`ppl_const_Pointset_Powerset_BD_Shape_int32_t_const_iterator_t y`) [**related**]
- 10.63.2.9 `int ppl_Pointset_Powerset_BD_Shape_int32_t_const_iterator_increment`
 (`ppl_Pointset_Powerset_BD_Shape_int32_t_const_iterator_t psit`) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.64 `ppl_Pointset_Powerset_BD_Shape_int32_t_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a `ppl_Pointset_Powerset_BD_Shape_int32_t_tag`.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_BD_Shape_int32_t_iterator` (`ppl_Pointset_Powerset_BD_Shape_-`
`int32_t_iterator_t *pit`)
- `int ppl_new_Pointset_Powerset_BD_Shape_int32_t_iterator_from_iterator` (`ppl_Pointset_-`
`Powerset_BD_Shape_int32_t_iterator_t *px`, `ppl_const_Pointset_Powerset_BD_Shape_int32_-`
`t_iterator_t y`)
- `int ppl_Pointset_Powerset_BD_Shape_int32_t_iterator_begin` (`ppl_Pointset_Powerset_BD_-`
`Shape_int32_t_t ps`, `ppl_Pointset_Powerset_BD_Shape_int32_t_iterator_t psit`)

- int [ppl_Pointset_Powerset_BD_Shape_int32_t_iterator_end](#) (ppl_Pointset_Powerset_BD_Shape_int32_t ps, ppl_Pointset_Powerset_BD_Shape_int32_t_iterator_t psit)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_iterator_equal_test](#) (ppl_const_Pointset_Powerset_BD_Shape_int32_t_iterator_t x, ppl_const_Pointset_Powerset_BD_Shape_int32_t_iterator_t y)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_iterator_increment](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_iterator_t psit)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_iterator_decrement](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_iterator_t psit)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_iterator_dereference](#) (ppl_const_Pointset_Powerset_BD_Shape_int32_t_iterator_t ps, ppl_const_BD_Shape_int32_t *d)
- int [ppl_delete_Pointset_Powerset_BD_Shape_int32_t_iterator](#) (ppl_const_Pointset_Powerset_BD_Shape_int32_t_iterator_t psit)

10.64.1 Detailed Description

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_BD_Shape_int32_t_tag](#).

10.64.2 Friends And Related Function Documentation

- 10.64.2.1** int [ppl_delete_Pointset_Powerset_BD_Shape_int32_t_iterator](#) (ppl_const_Pointset_Powerset_BD_Shape_int32_t_iterator_t *psit*) [[related](#)]
- 10.64.2.2** int [ppl_new_Pointset_Powerset_BD_Shape_int32_t_iterator](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_iterator_t * *pit*) [[related](#)]
- 10.64.2.3** int [ppl_new_Pointset_Powerset_BD_Shape_int32_t_iterator_from_iterator](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_iterator_t * *px*, ppl_const_Pointset_Powerset_BD_Shape_int32_t_iterator_t *y*) [[related](#)]
- 10.64.2.4** int [ppl_Pointset_Powerset_BD_Shape_int32_t_iterator_begin](#) (ppl_Pointset_Powerset_BD_Shape_int32_t ps, ppl_Pointset_Powerset_BD_Shape_int32_t_iterator_t *psit*) [[related](#)]
- 10.64.2.5** int [ppl_Pointset_Powerset_BD_Shape_int32_t_iterator_decrement](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_iterator_t *psit*) [[related](#)]

10.64.2.6 `int ppl_Pointset_Powerset_BD_Shape_int32_t_iterator_dereference (ppl_const_Pointset_Powerset_BD_Shape_int32_t_iterator_t ps, ppl_const_BD_Shape_int32_t_t * d) [related]`

10.64.2.7 `int ppl_Pointset_Powerset_BD_Shape_int32_t_iterator_end (ppl_Pointset_Powerset_BD_Shape_int32_t_t ps, ppl_Pointset_Powerset_BD_Shape_int32_t_iterator_t psit) [related]`

10.64.2.8 `int ppl_Pointset_Powerset_BD_Shape_int32_t_iterator_equal_test (ppl_const_Pointset_Powerset_BD_Shape_int32_t_iterator_t x, ppl_const_Pointset_Powerset_BD_Shape_int32_t_iterator_t y) [related]`

10.64.2.9 `int ppl_Pointset_Powerset_BD_Shape_int32_t_iterator_increment (ppl_Pointset_Powerset_BD_Shape_int32_t_iterator_t psit) [related]`

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.65 `ppl_Pointset_Powerset_BD_Shape_int32_t_tag` Interface Reference

Types and functions for `ppl_Pointset_Powerset_BD_Shape_int32_t_tag`.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Pointset_Powerset_BD_Shape_int32_t (ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ph)`
- `int ppl_new_Pointset_Powerset_BD_Shape_int32_t_from_space_dimension (ppl_Pointset_Powerset_BD_Shape_int32_t_t *pph, ppl_dimension_type d, int empty)`
- `int ppl_new_Pointset_Powerset_BD_Shape_int32_t_from_Pointset_Powerset_BD_Shape_int32_t (ppl_Pointset_Powerset_BD_Shape_int32_t_t *pph, ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ph)`
- `int ppl_new_Pointset_Powerset_BD_Shape_int32_t_from_BD_Shape_int32_t (ppl_Pointset_Powerset_BD_Shape_int32_t_t *pph, ppl_const_BD_Shape_int32_t_t ph)`
- `int ppl_new_Pointset_Powerset_BD_Shape_int32_t_from_Pointset_Powerset_BD_Shape_int32_t_with_complexity (ppl_Pointset_Powerset_BD_Shape_int32_t_t *pph, ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ph, int complexity)`

- int [ppl_new_Pointset_Powerset_BD_Shape_int32_t_from_BD_Shape_int32_t_with_complexity](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)
- int [ppl_new_Pointset_Powerset_BD_Shape_int32_t_from_Constraint_System](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t *pph, ppl_const_Constraint_System_t cs)
- int [ppl_new_Pointset_Powerset_BD_Shape_int32_t_from_Congruence_System](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t *pph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_space_dimension](#) (ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ph, ppl_dimension_type *m)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_affine_dimension](#) (ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ph, ppl_dimension_type *m)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_relation_with_Constraint](#) (ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_relation_with_Generator](#) (ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ph, ppl_const_Generator_t c)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_relation_with_Congruence](#) (ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_is_empty](#) (ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_is_universe](#) (ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_is_bounded](#) (ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_contains_integer_point](#) (ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_is_topologically_closed](#) (ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_is_discrete](#) (ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_topological_closure_assign](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_pairwise_reduce](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_omega_reduce](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_bounds_from_above](#) (ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_bounds_from_below](#) (ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_maximize](#) (ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_minimize](#) (ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_maximize_with_point](#) (ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_minimize_with_point](#) (ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)

- [int ppl_Pointset_Powerset_BD_Shape_int32_t_contains_Pointset_Powerset_BD_Shape_int32_t](#) (ppl_const_Pointset_Powerset_BD_Shape_int32_t x, ppl_const_Pointset_Powerset_BD_Shape_int32_t y)
- [int ppl_Pointset_Powerset_BD_Shape_int32_t_strictly_contains_Pointset_Powerset_BD_Shape_int32_t](#) (ppl_const_Pointset_Powerset_BD_Shape_int32_t x, ppl_const_Pointset_Powerset_BD_Shape_int32_t y)
- [int ppl_Pointset_Powerset_BD_Shape_int32_t_is_disjoint_from_Pointset_Powerset_BD_Shape_int32_t](#) (ppl_const_Pointset_Powerset_BD_Shape_int32_t x, ppl_const_Pointset_Powerset_BD_Shape_int32_t y)
- [int ppl_Pointset_Powerset_BD_Shape_int32_t_geometrically_covers_Pointset_Powerset_BD_Shape_int32_t](#) (ppl_const_Pointset_Powerset_BD_Shape_int32_t x, ppl_const_Pointset_Powerset_BD_Shape_int32_t y)
- [int ppl_Pointset_Powerset_BD_Shape_int32_t_geometrically_equals_Pointset_Powerset_BD_Shape_int32_t](#) (ppl_const_Pointset_Powerset_BD_Shape_int32_t x, ppl_const_Pointset_Powerset_BD_Shape_int32_t y)
- [int ppl_Pointset_Powerset_BD_Shape_int32_t_equals_Pointset_Powerset_BD_Shape_int32_t](#) (ppl_const_Pointset_Powerset_BD_Shape_int32_t x, ppl_const_Pointset_Powerset_BD_Shape_int32_t y)
- [int ppl_Pointset_Powerset_BD_Shape_int32_t_OK](#) (ppl_const_Pointset_Powerset_BD_Shape_int32_t ph)
- [int ppl_Pointset_Powerset_BD_Shape_int32_t_add_constraint](#) (ppl_Pointset_Powerset_BD_Shape_int32_t ph, ppl_const_Constraint_t c)
- [int ppl_Pointset_Powerset_BD_Shape_int32_t_add_congruence](#) (ppl_Pointset_Powerset_BD_Shape_int32_t ph, ppl_const_Congruence_t c)
- [int ppl_Pointset_Powerset_BD_Shape_int32_t_add_constraints](#) (ppl_Pointset_Powerset_BD_Shape_int32_t ph, ppl_const_Constraint_System_t cs)
- [int ppl_Pointset_Powerset_BD_Shape_int32_t_add_congruences](#) (ppl_Pointset_Powerset_BD_Shape_int32_t ph, ppl_const_Congruence_System_t cs)
- [int ppl_Pointset_Powerset_BD_Shape_int32_t_refine_with_constraint](#) (ppl_Pointset_Powerset_BD_Shape_int32_t ph, ppl_const_Constraint_t c)
- [int ppl_Pointset_Powerset_BD_Shape_int32_t_refine_with_congruence](#) (ppl_Pointset_Powerset_BD_Shape_int32_t ph, ppl_const_Congruence_t c)
- [int ppl_Pointset_Powerset_BD_Shape_int32_t_refine_with_constraints](#) (ppl_Pointset_Powerset_BD_Shape_int32_t ph, ppl_const_Constraint_System_t cs)
- [int ppl_Pointset_Powerset_BD_Shape_int32_t_refine_with_congruences](#) (ppl_Pointset_Powerset_BD_Shape_int32_t ph, ppl_const_Congruence_System_t cs)
- [int ppl_Pointset_Powerset_BD_Shape_int32_t_intersection_assign](#) (ppl_Pointset_Powerset_BD_Shape_int32_t x, ppl_const_Pointset_Powerset_BD_Shape_int32_t y)
- [int ppl_Pointset_Powerset_BD_Shape_int32_t_upper_bound_assign](#) (ppl_Pointset_Powerset_BD_Shape_int32_t x, ppl_const_Pointset_Powerset_BD_Shape_int32_t y)
- [int ppl_Pointset_Powerset_BD_Shape_int32_t_difference_assign](#) (ppl_Pointset_Powerset_BD_Shape_int32_t x, ppl_const_Pointset_Powerset_BD_Shape_int32_t y)
- [int ppl_Pointset_Powerset_BD_Shape_int32_t_concatenate_assign](#) (ppl_Pointset_Powerset_BD_Shape_int32_t x, ppl_const_Pointset_Powerset_BD_Shape_int32_t y)
- [int ppl_Pointset_Powerset_BD_Shape_int32_t_time_elapse_assign](#) (ppl_Pointset_Powerset_BD_Shape_int32_t x, ppl_const_Pointset_Powerset_BD_Shape_int32_t y)
- [int ppl_Pointset_Powerset_BD_Shape_int32_t_upper_bound_assign_if_exact](#) (ppl_Pointset_Powerset_BD_Shape_int32_t x, ppl_const_Pointset_Powerset_BD_Shape_int32_t y)
- [int ppl_Pointset_Powerset_BD_Shape_int32_t_simplify_using_context_assign](#) (ppl_Pointset_Powerset_BD_Shape_int32_t x, ppl_const_Pointset_Powerset_BD_Shape_int32_t y)
- [int ppl_Pointset_Powerset_BD_Shape_int32_t_constrains](#) (ppl_Pointset_Powerset_BD_Shape_int32_t ph, [ppl_dimension_type](#) var)

- int [ppl_Pointset_Powerset_BD_Shape_int32_t_unconstrain_space_dimension](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_unconstrain_space_dimensions](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_affine_image](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_affine_preimage](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_bounded_affine_image](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_bounded_affine_preimage](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_generalized_affine_image](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_generalized_affine_preimage](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_generalized_affine_image_lhs_rhs](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_generalized_affine_preimage_lhs_rhs](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_add_space_dimensions_and_embed](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_add_space_dimensions_and_project](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_remove_space_dimensions](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_remove_higher_space_dimensions](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_expand_space_dimension](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_fold_space_dimensions](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_map_space_dimensions](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_drop_some_non_integer_points](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t ph, int complexity)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_drop_some_non_integer_points_2](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_external_memory_in_bytes](#) (ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_total_memory_in_bytes](#) (ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_size](#) (ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ps, size_t *sz)

- int [ppl_Pointset_Powerset_BD_Shape_int32_t_add_disjunct](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t ps, ppl_const_BD_Shape_int32_t_t d)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_drop_disjunct](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t ps, ppl_const_Pointset_Powerset_BD_Shape_int32_t_iterator_t cit, ppl_Pointset_Powerset_BD_Shape_int32_t_iterator_t it)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_drop_disjuncts](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t ps, ppl_const_Pointset_Powerset_BD_Shape_int32_t_iterator_t first, ppl_const_Pointset_Powerset_BD_Shape_int32_t_iterator_t last)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_BHZ03_H79_BHMZ05_widening_assign](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int32_t_t y)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_BHZ03_H79_H79_widening_assign](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int32_t_t y)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_BGP99_BHMZ05_extrapolation_assign](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int32_t_t y, int disjuncts)
- int [ppl_Pointset_Powerset_BD_Shape_int32_t_BGP99_H79_extrapolation_assign](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int32_t_t y, int disjuncts)

10.65.1 Detailed Description

Types and functions for [ppl_Pointset_Powerset_BD_Shape_int32_t_tag](#).

10.65.2 Friends And Related Function Documentation

- 10.65.2.1** int [ppl_delete_Pointset_Powerset_BD_Shape_int32_t](#) (ppl_const_Pointset_Powerset_BD_Shape_int32_t_t *ph*) [**related**]
- 10.65.2.2** int [ppl_new_Pointset_Powerset_BD_Shape_int32_t_from_BD_Shape_int32_t](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t * *pph*, ppl_const_BD_Shape_int32_t_t *ph*) [**related**]
- 10.65.2.3** int [ppl_new_Pointset_Powerset_BD_Shape_int32_t_from_BD_Shape_int32_t_with_complexity](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t * *pph*, ppl_const_BD_Shape_int32_t_t *ph*, int *complexity*) [**related**]
- 10.65.2.4** int [ppl_new_Pointset_Powerset_BD_Shape_int32_t_from_Congruence_System](#) (ppl_Pointset_Powerset_BD_Shape_int32_t_t * *pph*, ppl_const_Congruence_System_t *cs*) [**related**]

- 10.65.2.5** `int ppl_new_Pointset_Powerset_BD_Shape_int32_t_from_Constraint_System`
 (`ppl_Pointset_Powerset_BD_Shape_int32_t_t *pph`, `ppl_const_Constraint_System_t cs`)
 [related]
- 10.65.2.6** `int ppl_new_Pointset_Powerset_BD_Shape_int32_t_from_Pointset_Powerset_-`
`BD_Shape_int32_t` (`ppl_Pointset_Powerset_BD_Shape_int32_t_t *pph`,
`ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ph`) [related]
- 10.65.2.7** `int ppl_new_Pointset_Powerset_BD_Shape_int32_t_from_Pointset_Powerset_BD_-`
`Shape_int32_t_with_complexity` (`ppl_Pointset_Powerset_BD_Shape_int32_t_t *pph`,
`ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ph`, `int complexity`) [related]
- 10.65.2.8** `int ppl_new_Pointset_Powerset_BD_Shape_int32_t_from_space_dimension`
 (`ppl_Pointset_Powerset_BD_Shape_int32_t_t *pph`, `ppl_dimension_type d`, `int empty`)
 [related]
- 10.65.2.9** `int ppl_Pointset_Powerset_BD_Shape_int32_t_add_congruence`
 (`ppl_Pointset_Powerset_BD_Shape_int32_t_t ph`, `ppl_const_Congruence_t c`)
 [related]
- 10.65.2.10** `int ppl_Pointset_Powerset_BD_Shape_int32_t_add_congruences`
 (`ppl_Pointset_Powerset_BD_Shape_int32_t_t ph`, `ppl_const_Congruence_System_t cs`)
 [related]
- 10.65.2.11** `int ppl_Pointset_Powerset_BD_Shape_int32_t_add_constraint`
 (`ppl_Pointset_Powerset_BD_Shape_int32_t_t ph`, `ppl_const_Constraint_t c`)
 [related]
- 10.65.2.12** `int ppl_Pointset_Powerset_BD_Shape_int32_t_add_constraints`
 (`ppl_Pointset_Powerset_BD_Shape_int32_t_t ph`, `ppl_const_Constraint_System_t cs`)
 [related]

- 10.65.2.13 `int ppl_Pointset_Powerset_BD_Shape_int32_t_add_disjunct (ppl_Pointset_Powerset_BD_Shape_int32_t_t ps, ppl_const_BD_Shape_int32_t_t d)`
[related]
- 10.65.2.14 `int ppl_Pointset_Powerset_BD_Shape_int32_t_add_space_dimensions_and_embed (ppl_Pointset_Powerset_BD_Shape_int32_t_t ph, ppl_dimension_type d)`
[related]
- 10.65.2.15 `int ppl_Pointset_Powerset_BD_Shape_int32_t_add_space_dimensions_and_project (ppl_Pointset_Powerset_BD_Shape_int32_t_t ph, ppl_dimension_type d)`
[related]
- 10.65.2.16 `int ppl_Pointset_Powerset_BD_Shape_int32_t_affine_dimension (ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ph, ppl_dimension_type * m)`
[related]
- 10.65.2.17 `int ppl_Pointset_Powerset_BD_Shape_int32_t_affine_image (ppl_Pointset_Powerset_BD_Shape_int32_t_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [related]
- 10.65.2.18 `int ppl_Pointset_Powerset_BD_Shape_int32_t_affine_preimage (ppl_Pointset_Powerset_BD_Shape_int32_t_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [related]
- 10.65.2.19 `int ppl_Pointset_Powerset_BD_Shape_int32_t_BGP99_BHMZ05_extrapolation_assign (ppl_Pointset_Powerset_BD_Shape_int32_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int32_t_t y, int disjuncts)` [related]
- 10.65.2.20 `int ppl_Pointset_Powerset_BD_Shape_int32_t_BGP99_H79_extrapolation_assign (ppl_Pointset_Powerset_BD_Shape_int32_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int32_t_t y, int disjuncts)` [related]

- 10.65.2.21** `int ppl_Pointset_Powerset_BD_Shape_int32_t_BHZ03_H79_BHMZ05_widening_assign (ppl_Pointset_Powerset_BD_Shape_int32_t x, ppl_const_Pointset_Powerset_BD_Shape_int32_t y)` `[related]`
- 10.65.2.22** `int ppl_Pointset_Powerset_BD_Shape_int32_t_BHZ03_H79_H79_widening_assign (ppl_Pointset_Powerset_BD_Shape_int32_t x, ppl_const_Pointset_Powerset_BD_Shape_int32_t y)` `[related]`
- 10.65.2.23** `int ppl_Pointset_Powerset_BD_Shape_int32_t_bounded_affine_image (ppl_Pointset_Powerset_BD_Shape_int32_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` `[related]`
- 10.65.2.24** `int ppl_Pointset_Powerset_BD_Shape_int32_t_bounded_affine_preimage (ppl_Pointset_Powerset_BD_Shape_int32_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` `[related]`
- 10.65.2.25** `int ppl_Pointset_Powerset_BD_Shape_int32_t_bounds_from_above (ppl_const_Pointset_Powerset_BD_Shape_int32_t ph, ppl_const_Linear_Expression_t le)` `[related]`
- 10.65.2.26** `int ppl_Pointset_Powerset_BD_Shape_int32_t_bounds_from_below (ppl_const_Pointset_Powerset_BD_Shape_int32_t ph, ppl_const_Linear_Expression_t le)` `[related]`
- 10.65.2.27** `int ppl_Pointset_Powerset_BD_Shape_int32_t_concatenate_assign (ppl_Pointset_Powerset_BD_Shape_int32_t x, ppl_const_Pointset_Powerset_BD_Shape_int32_t y)` `[related]`
- 10.65.2.28** `int ppl_Pointset_Powerset_BD_Shape_int32_t_constrains (ppl_Pointset_Powerset_BD_Shape_int32_t ph, ppl_dimension_type var)` `[related]`

- 10.65.2.29 `int ppl_Pointset_Powerset_BD_Shape_int32_t_contains_integer_point (ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ph)` [**related**]
- 10.65.2.30 `int ppl_Pointset_Powerset_BD_Shape_int32_t_contains_Pointset_Powerset_-
BD_Shape_int32_t (ppl_const_Pointset_Powerset_BD_Shape_int32_t_t x,
ppl_const_Pointset_Powerset_BD_Shape_int32_t_t y)` [**related**]
- 10.65.2.31 `int ppl_Pointset_Powerset_BD_Shape_int32_t_difference_assign (ppl_Pointset_-
Powerset_BD_Shape_int32_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int32_t_t
y)` [**related**]
- 10.65.2.32 `int ppl_Pointset_Powerset_BD_Shape_int32_t_drop_disjunct (ppl_Pointset_Powerset_-
BD_Shape_int32_t_t ps, ppl_const_Pointset_Powerset_BD_Shape_int32_t_iterator_t
cit, ppl_Pointset_Powerset_BD_Shape_int32_t_iterator_t it)` [**related**]
- 10.65.2.33 `int ppl_Pointset_Powerset_BD_Shape_int32_t_drop_disjuncts (ppl_Pointset_-
Powerset_BD_Shape_int32_t_t ps, ppl_const_Pointset_Powerset_BD_Shape_int32_-
t_iterator_t first, ppl_const_Pointset_Powerset_BD_Shape_int32_t_iterator_t last)`
[**related**]
- 10.65.2.34 `int ppl_Pointset_Powerset_BD_Shape_int32_t_drop_some_non_integer_points
(ppl_Pointset_Powerset_BD_Shape_int32_t_t ph, int complexity)` [**related**]
- 10.65.2.35 `int ppl_Pointset_Powerset_BD_Shape_int32_t_drop_some_non_integer_points_2
(ppl_Pointset_Powerset_BD_Shape_int32_t_t ph, ppl_dimension_type ds[], size_t n,
int complexity)` [**related**]
- 10.65.2.36 `int ppl_Pointset_Powerset_BD_Shape_int32_t_equals_Pointset_Powerset_-
BD_Shape_int32_t (ppl_const_Pointset_Powerset_BD_Shape_int32_t_t x,
ppl_const_Pointset_Powerset_BD_Shape_int32_t_t y)` [**related**]

- 10.65.2.37** `int ppl_Pointset_Powerset_BD_Shape_int32_t_expand_space_dimension`
 (`ppl_Pointset_Powerset_BD_Shape_int32_t_t ph`, `ppl_dimension_type d`,
`ppl_dimension_type m`) [**related**]
- 10.65.2.38** `int ppl_Pointset_Powerset_BD_Shape_int32_t_external_memory_in_bytes`
 (`ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ps`, `size_t * sz`) [**related**]
- 10.65.2.39** `int ppl_Pointset_Powerset_BD_Shape_int32_t_fold_space_dimensions`
 (`ppl_Pointset_Powerset_BD_Shape_int32_t_t ph`, `ppl_dimension_type ds[]`, `size_t n`,
`ppl_dimension_type d`) [**related**]
- 10.65.2.40** `int ppl_Pointset_Powerset_BD_Shape_int32_t_generalized_affine_image`
 (`ppl_Pointset_Powerset_BD_Shape_int32_t_t ph`, `ppl_dimension_type var`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [**related**]
- 10.65.2.41** `int ppl_Pointset_Powerset_BD_Shape_int32_t_generalized_affine_image_lhs_rhs`
 (`ppl_Pointset_Powerset_BD_Shape_int32_t_t ph`, `ppl_const_Linear_Expression_t lhs`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
 [**related**]
- 10.65.2.42** `int ppl_Pointset_Powerset_BD_Shape_int32_t_generalized_affine_preimage`
 (`ppl_Pointset_Powerset_BD_Shape_int32_t_t ph`, `ppl_dimension_type var`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [**related**]
- 10.65.2.43** `int ppl_Pointset_Powerset_BD_Shape_int32_t_generalized_affine_preimage_lhs_rhs`
 (`ppl_Pointset_Powerset_BD_Shape_int32_t_t ph`, `ppl_const_Linear_Expression_t lhs`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
 [**related**]

- 10.65.2.44 `int ppl_Pointset_Powerset_BD_Shape_int32_t_geometrically_covers_Pointset - Powerset_BD_Shape_int32_t (ppl_const_Pointset_Powerset_BD_Shape_int32_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int32_t_t y) [related]`
- 10.65.2.45 `int ppl_Pointset_Powerset_BD_Shape_int32_t_geometrically_equals_Pointset - Powerset_BD_Shape_int32_t (ppl_const_Pointset_Powerset_BD_Shape_int32_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int32_t_t y) [related]`
- 10.65.2.46 `int ppl_Pointset_Powerset_BD_Shape_int32_t_intersection_assign (ppl_Pointset - Powerset_BD_Shape_int32_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int32_t_t y) [related]`
- 10.65.2.47 `int ppl_Pointset_Powerset_BD_Shape_int32_t_is_bounded (ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ph) [related]`
- 10.65.2.48 `int ppl_Pointset_Powerset_BD_Shape_int32_t_is_discrete (ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ph) [related]`
- 10.65.2.49 `int ppl_Pointset_Powerset_BD_Shape_int32_t_is_disjoint_from_Pointset - Powerset_BD_Shape_int32_t (ppl_const_Pointset_Powerset_BD_Shape_int32_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int32_t_t y) [related]`
- 10.65.2.50 `int ppl_Pointset_Powerset_BD_Shape_int32_t_is_empty (ppl_const_Pointset - Powerset_BD_Shape_int32_t_t ph) [related]`
- 10.65.2.51 `int ppl_Pointset_Powerset_BD_Shape_int32_t_is_topologically_closed (ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ph) [related]`
- 10.65.2.52 `int ppl_Pointset_Powerset_BD_Shape_int32_t_is_universe (ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ph) [related]`

- 10.65.2.53** `int ppl_Pointset_Powerset_BD_Shape_int32_t_map_space_dimensions`
 (`ppl_Pointset_Powerset_BD_Shape_int32_t t ph`, `ppl_dimension_type maps[]`, `size_t n`) [**related**]
- 10.65.2.54** `int ppl_Pointset_Powerset_BD_Shape_int32_t_maximize` (`ppl_const_Pointset_Powerset_BD_Shape_int32_t t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int * poptimum`) [**related**]
- 10.65.2.55** `int ppl_Pointset_Powerset_BD_Shape_int32_t_maximize_with_point` (`ppl_const_Pointset_Powerset_BD_Shape_int32_t t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int * poptimum`, `ppl_Generator_t point`) [**related**]
- 10.65.2.56** `int ppl_Pointset_Powerset_BD_Shape_int32_t_minimize` (`ppl_const_Pointset_Powerset_BD_Shape_int32_t t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int * poptimum`) [**related**]
- 10.65.2.57** `int ppl_Pointset_Powerset_BD_Shape_int32_t_minimize_with_point` (`ppl_const_Pointset_Powerset_BD_Shape_int32_t t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int * poptimum`, `ppl_Generator_t point`) [**related**]
- 10.65.2.58** `int ppl_Pointset_Powerset_BD_Shape_int32_t_OK` (`ppl_const_Pointset_Powerset_BD_Shape_int32_t t ph`) [**related**]
- 10.65.2.59** `int ppl_Pointset_Powerset_BD_Shape_int32_t_omega_reduce`
 (`ppl_Pointset_Powerset_BD_Shape_int32_t t ph`) [**related**]
- 10.65.2.60** `int ppl_Pointset_Powerset_BD_Shape_int32_t_pairwise_reduce`
 (`ppl_Pointset_Powerset_BD_Shape_int32_t t ph`) [**related**]

- 10.65.2.61 `int ppl_Pointset_Powerset_BD_Shape_int32_t_refine_with_congruence`
 (`ppl_Pointset_Powerset_BD_Shape_int32_t t ph`, `ppl_const_Congruence_t c`)
 [related]
- 10.65.2.62 `int ppl_Pointset_Powerset_BD_Shape_int32_t_refine_with_congruences`
 (`ppl_Pointset_Powerset_BD_Shape_int32_t t ph`, `ppl_const_Congruence_System_t cs`)
 [related]
- 10.65.2.63 `int ppl_Pointset_Powerset_BD_Shape_int32_t_refine_with_constraint`
 (`ppl_Pointset_Powerset_BD_Shape_int32_t t ph`, `ppl_const_Constraint_t c`)
 [related]
- 10.65.2.64 `int ppl_Pointset_Powerset_BD_Shape_int32_t_refine_with_constraints`
 (`ppl_Pointset_Powerset_BD_Shape_int32_t t ph`, `ppl_const_Constraint_System_t cs`)
 [related]
- 10.65.2.65 `int ppl_Pointset_Powerset_BD_Shape_int32_t_relation_with_Congruence`
 (`ppl_const_Pointset_Powerset_BD_Shape_int32_t t ph`, `ppl_const_Congruence_t c`)
 [related]
- 10.65.2.66 `int ppl_Pointset_Powerset_BD_Shape_int32_t_relation_with_Constraint`
 (`ppl_const_Pointset_Powerset_BD_Shape_int32_t t ph`, `ppl_const_Constraint_t c`)
 [related]
- 10.65.2.67 `int ppl_Pointset_Powerset_BD_Shape_int32_t_relation_with_Generator`
 (`ppl_const_Pointset_Powerset_BD_Shape_int32_t t ph`, `ppl_const_Generator_t c`)
 [related]
- 10.65.2.68 `int ppl_Pointset_Powerset_BD_Shape_int32_t_remove_higher_space_dimensions`
 (`ppl_Pointset_Powerset_BD_Shape_int32_t t ph`, `ppl_dimension_type d`)
 [related]

- 10.65.2.69 `int ppl_Pointset_Powerset_BD_Shape_int32_t_remove_space_dimensions`
(`ppl_Pointset_Powerset_BD_Shape_int32_t_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`)
[related]
- 10.65.2.70 `int ppl_Pointset_Powerset_BD_Shape_int32_t_simplify_using_-`
`context_assign` (`ppl_Pointset_Powerset_BD_Shape_int32_t_t x`,
`ppl_const_Pointset_Powerset_BD_Shape_int32_t_t y`) [related]
- 10.65.2.71 `int ppl_Pointset_Powerset_BD_Shape_int32_t_size` (`ppl_const_Pointset_Powerset_-`
`BD_Shape_int32_t_t ps`, `size_t * sz`) [related]
- 10.65.2.72 `int ppl_Pointset_Powerset_BD_Shape_int32_t_space_dimension`
(`ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ph`, `ppl_dimension_type * m`)
[related]
- 10.65.2.73 `int ppl_Pointset_Powerset_BD_Shape_int32_t_strictly_contains_Pointset_-`
`Powerset_BD_Shape_int32_t` (`ppl_const_Pointset_Powerset_BD_Shape_int32_t_t x`,
`ppl_const_Pointset_Powerset_BD_Shape_int32_t_t y`) [related]
- 10.65.2.74 `int ppl_Pointset_Powerset_BD_Shape_int32_t_time_elapse_assign` (`ppl_Pointset_-`
`Powerset_BD_Shape_int32_t_t x`, `ppl_const_Pointset_Powerset_BD_Shape_int32_t_t`
`y`) [related]
- 10.65.2.75 `int ppl_Pointset_Powerset_BD_Shape_int32_t_topological_closure_assign`
(`ppl_Pointset_Powerset_BD_Shape_int32_t_t ph`) [related]
- 10.65.2.76 `int ppl_Pointset_Powerset_BD_Shape_int32_t_total_memory_in_bytes`
(`ppl_const_Pointset_Powerset_BD_Shape_int32_t_t ps`, `size_t * sz`) [related]

- 10.65.2.77** `int ppl_Pointset_Powerset_BD_Shape_int32_t_unconstrain_space_dimension`
 (`ppl_Pointset_Powerset_BD_Shape_int32_t_t ph`, `ppl_dimension_type var`)
 [**related**]
- 10.65.2.78** `int ppl_Pointset_Powerset_BD_Shape_int32_t_unconstrain_space_dimensions`
 (`ppl_Pointset_Powerset_BD_Shape_int32_t_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`)
 [**related**]
- 10.65.2.79** `int ppl_Pointset_Powerset_BD_Shape_int32_t_upper_bound_assign` (`ppl_Pointset_Powerset_BD_Shape_int32_t_t x`, `ppl_const_Pointset_Powerset_BD_Shape_int32_t_t y`) [**related**]
- 10.65.2.80** `int ppl_Pointset_Powerset_BD_Shape_int32_t_upper_bound_assign_if_exact` (`ppl_Pointset_Powerset_BD_Shape_int32_t_t x`, `ppl_const_Pointset_Powerset_BD_Shape_int32_t_t y`) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.66 `ppl_Pointset_Powerset_BD_Shape_int64_t_const_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_BD_Shape_int64_t_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl\_new\_Pointset\_Powerset\_BD\_Shape\_int64\_t\_const\_iterator` (`ppl_Pointset_Powerset_BD_Shape_int64_t_const_iterator_t *pit`)
- `int ppl\_new\_Pointset\_Powerset\_BD\_Shape\_int64\_t\_const\_iterator\_from\_const\_iterator` (`ppl_Pointset_Powerset_BD_Shape_int64_t_const_iterator_t *px`, `ppl_const_Pointset_Powerset_BD_Shape_int64_t_const_iterator_t y`)
- `int ppl\_Pointset\_Powerset\_BD\_Shape\_int64\_t\_const\_iterator\_begin` (`ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ps`, `ppl_Pointset_Powerset_BD_Shape_int64_t_const_iterator_t psit`)
- `int ppl\_Pointset\_Powerset\_BD\_Shape\_int64\_t\_const\_iterator\_end` (`ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ps`, `ppl_Pointset_Powerset_BD_Shape_int64_t_const_iterator_t psit`)

- `int ppl_Pointset_Powerset_BD_Shape_int64_t_const_iterator_equal_test` (`ppl_const_Pointset_Powerset_BD_Shape_int64_t_const_iterator_t x`, `ppl_const_Pointset_Powerset_BD_Shape_int64_t_const_iterator_t y`)
- `int ppl_Pointset_Powerset_BD_Shape_int64_t_const_iterator_increment` (`ppl_Pointset_Powerset_BD_Shape_int64_t_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_int64_t_const_iterator_decrement` (`ppl_Pointset_Powerset_BD_Shape_int64_t_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_int64_t_const_iterator_dereference` (`ppl_const_Pointset_Powerset_BD_Shape_int64_t_const_iterator_t ps`, `ppl_const_BD_Shape_int64_t_t *d`)
- `int ppl_delete_Pointset_Powerset_BD_Shape_int64_t_const_iterator` (`ppl_const_Pointset_Powerset_BD_Shape_int64_t_const_iterator_t psit`)

10.66.1 Detailed Description

Types and functions for iterating on the disjuncts of a const `ppl_Pointset_Powerset_BD_Shape_int64_t_tag`.

10.66.2 Friends And Related Function Documentation

10.66.2.1 `int ppl_delete_Pointset_Powerset_BD_Shape_int64_t_const_iterator`
(`ppl_const_Pointset_Powerset_BD_Shape_int64_t_const_iterator_t psit`) [**related**]

10.66.2.2 `int ppl_new_Pointset_Powerset_BD_Shape_int64_t_const_iterator`
(`ppl_Pointset_Powerset_BD_Shape_int64_t_const_iterator_t * pit`) [**related**]

10.66.2.3 `int ppl_new_Pointset_Powerset_BD_Shape_int64_t_const_iterator_from_const_iterator`
(`ppl_Pointset_Powerset_BD_Shape_int64_t_const_iterator_t * px`,
`ppl_const_Pointset_Powerset_BD_Shape_int64_t_const_iterator_t y`) [**related**]

10.66.2.4 `int ppl_Pointset_Powerset_BD_Shape_int64_t_const_iterator_begin`
(`ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ps`, `ppl_Pointset_Powerset_BD_Shape_int64_t_const_iterator_t psit`) [**related**]

10.66.2.5 `int ppl_Pointset_Powerset_BD_Shape_int64_t_const_iterator_decrement`
(`ppl_Pointset_Powerset_BD_Shape_int64_t_const_iterator_t psit`) [**related**]

- 10.66.2.6** `int ppl_Pointset_Powerset_BD_Shape_int64_t_const_iterator_dereference`
 (`ppl_const_Pointset_Powerset_BD_Shape_int64_t_const_iterator_t ps`,
`ppl_const_BD_Shape_int64_t_t * d`) [**related**]
- 10.66.2.7** `int ppl_Pointset_Powerset_BD_Shape_int64_t_const_iterator_end`
 (`ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ps`, `ppl_Pointset_Powerset_BD_-`
`Shape_int64_t_const_iterator_t psit`) [**related**]
- 10.66.2.8** `int ppl_Pointset_Powerset_BD_Shape_int64_t_const_iterator_equal_test`
 (`ppl_const_Pointset_Powerset_BD_Shape_int64_t_const_iterator_t x`,
`ppl_const_Pointset_Powerset_BD_Shape_int64_t_const_iterator_t y`) [**related**]
- 10.66.2.9** `int ppl_Pointset_Powerset_BD_Shape_int64_t_const_iterator_increment`
 (`ppl_Pointset_Powerset_BD_Shape_int64_t_const_iterator_t psit`) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.67 `ppl_Pointset_Powerset_BD_Shape_int64_t_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a `ppl_Pointset_Powerset_BD_Shape_int64_t_tag`.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_BD_Shape_int64_t_iterator` (`ppl_Pointset_Powerset_BD_Shape_-`
`int64_t_iterator_t *pit`)
- `int ppl_new_Pointset_Powerset_BD_Shape_int64_t_iterator_from_iterator` (`ppl_Pointset_-`
`Powerset_BD_Shape_int64_t_iterator_t *px`, `ppl_const_Pointset_Powerset_BD_Shape_int64_-`
`t_iterator_t y`)
- `int ppl_Pointset_Powerset_BD_Shape_int64_t_iterator_begin` (`ppl_Pointset_Powerset_BD_-`
`Shape_int64_t_t ps`, `ppl_Pointset_Powerset_BD_Shape_int64_t_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_int64_t_iterator_end` (`ppl_Pointset_Powerset_BD_Shape_-`
`int64_t_t ps`, `ppl_Pointset_Powerset_BD_Shape_int64_t_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_int64_t_iterator_equal_test` (`ppl_const_Pointset_Powerset_-`
`BD_Shape_int64_t_iterator_t x`, `ppl_const_Pointset_Powerset_BD_Shape_int64_t_iterator_t y`)

- int [ppl_Pointset_Powerset_BD_Shape_int64_t_iterator_increment](#) (ppl_Pointset_Powerset_BD_Shape_int64_t_iterator_t psit)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_iterator_decrement](#) (ppl_Pointset_Powerset_BD_Shape_int64_t_iterator_t psit)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_iterator_dereference](#) (ppl_const_Pointset_Powerset_BD_Shape_int64_t_iterator_t ps, ppl_const_BD_Shape_int64_t_t *d)
- int [ppl_delete_Pointset_Powerset_BD_Shape_int64_t_iterator](#) (ppl_const_Pointset_Powerset_BD_Shape_int64_t_iterator_t psit)

10.67.1 Detailed Description

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_BD_Shape_int64_t_tag](#).

10.67.2 Friends And Related Function Documentation

- 10.67.2.1** int [ppl_delete_Pointset_Powerset_BD_Shape_int64_t_iterator](#) (ppl_const_Pointset_Powerset_BD_Shape_int64_t_iterator_t *psit*) [[related](#)]
- 10.67.2.2** int [ppl_new_Pointset_Powerset_BD_Shape_int64_t_iterator](#) (ppl_Pointset_Powerset_BD_Shape_int64_t_iterator_t * *pit*) [[related](#)]
- 10.67.2.3** int [ppl_new_Pointset_Powerset_BD_Shape_int64_t_iterator_from_iterator](#) (ppl_Pointset_Powerset_BD_Shape_int64_t_iterator_t * *px*, ppl_const_Pointset_Powerset_BD_Shape_int64_t_iterator_t *y*) [[related](#)]
- 10.67.2.4** int [ppl_Pointset_Powerset_BD_Shape_int64_t_iterator_begin](#) (ppl_Pointset_Powerset_BD_Shape_int64_t_t *ps*, ppl_Pointset_Powerset_BD_Shape_int64_t_iterator_t *psit*) [[related](#)]
- 10.67.2.5** int [ppl_Pointset_Powerset_BD_Shape_int64_t_iterator_decrement](#) (ppl_Pointset_Powerset_BD_Shape_int64_t_iterator_t *psit*) [[related](#)]
- 10.67.2.6** int [ppl_Pointset_Powerset_BD_Shape_int64_t_iterator_dereference](#) (ppl_const_Pointset_Powerset_BD_Shape_int64_t_iterator_t *ps*, ppl_const_BD_Shape_int64_t_t * *d*) [[related](#)]

10.67.2.7 `int ppl_Pointset_Powerset_BD_Shape_int64_t_iterator_end (ppl_Pointset_Powerset_BD_Shape_int64_t_t ps, ppl_Pointset_Powerset_BD_Shape_int64_t_iterator_t psit)` **[related]**

10.67.2.8 `int ppl_Pointset_Powerset_BD_Shape_int64_t_iterator_equal_test (ppl_const_Pointset_Powerset_BD_Shape_int64_t_iterator_t x, ppl_const_Pointset_Powerset_BD_Shape_int64_t_iterator_t y)` **[related]**

10.67.2.9 `int ppl_Pointset_Powerset_BD_Shape_int64_t_iterator_increment (ppl_Pointset_Powerset_BD_Shape_int64_t_iterator_t psit)` **[related]**

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.68 ppl_Pointset_Powerset_BD_Shape_int64_t_tag Interface Reference

Types and functions for [ppl_Pointset_Powerset_BD_Shape_int64_t_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl\_delete\_Pointset\_Powerset\_BD\_Shape\_int64\_t (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ph)`
- `int ppl\_new\_Pointset\_Powerset\_BD\_Shape\_int64\_t\_from\_space\_dimension (ppl_Pointset_Powerset_BD_Shape_int64_t_t *pph, ppl\_dimension\_type d, int empty)`
- `int ppl\_new\_Pointset\_Powerset\_BD\_Shape\_int64\_t\_from\_Pointset\_Powerset\_BD\_Shape\_int64\_t (ppl_Pointset_Powerset_BD_Shape_int64_t_t *pph, ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ph)`
- `int ppl\_new\_Pointset\_Powerset\_BD\_Shape\_int64\_t\_from\_BD\_Shape\_int64\_t (ppl_Pointset_Powerset_BD_Shape_int64_t_t *pph, ppl_const_BD_Shape_int64_t_t ph)`
- `int ppl\_new\_Pointset\_Powerset\_BD\_Shape\_int64\_t\_from\_Pointset\_Powerset\_BD\_Shape\_int64\_t\_with\_complexity (ppl_Pointset_Powerset_BD_Shape_int64_t_t *pph, ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ph, int complexity)`
- `int ppl\_new\_Pointset\_Powerset\_BD\_Shape\_int64\_t\_from\_BD\_Shape\_int64\_t\_with\_complexity (ppl_Pointset_Powerset_BD_Shape_int64_t_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)`
- `int ppl\_new\_Pointset\_Powerset\_BD\_Shape\_int64\_t\_from\_Constraint\_System (ppl_Pointset_Powerset_BD_Shape_int64_t_t *pph, ppl_const_Constraint_System_t cs)`
- `int ppl\_new\_Pointset\_Powerset\_BD\_Shape\_int64\_t\_from\_Congruence\_System (ppl_Pointset_Powerset_BD_Shape_int64_t_t *pph, ppl_const_Congruence_System_t cs)`

- int [ppl_Pointset_Powerset_BD_Shape_int64_t_space_dimension](#) (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ph, ppl_dimension_type *m)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_affine_dimension](#) (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ph, ppl_dimension_type *m)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_relation_with_Constraint](#) (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_relation_with_Generator](#) (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ph, ppl_const_Generator_t c)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_relation_with_Congruence](#) (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_is_empty](#) (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_is_universe](#) (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_is_bounded](#) (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_contains_integer_point](#) (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_is_topologically_closed](#) (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_is_discrete](#) (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_topological_closure_assign](#) (ppl_Pointset_Powerset_BD_Shape_int64_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_pairwise_reduce](#) (ppl_Pointset_Powerset_BD_Shape_int64_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_omega_reduce](#) (ppl_Pointset_Powerset_BD_Shape_int64_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_bounds_from_above](#) (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_bounds_from_below](#) (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_maximize](#) (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_minimize](#) (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_maximize_with_point](#) (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_minimize_with_point](#) (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_contains_Pointset_Powerset_BD_Shape_int64_t](#) (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int64_t_t y)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_strictly_contains_Pointset_Powerset_BD_Shape_int64_t](#) (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int64_t_t y)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_is_disjoint_from_Pointset_Powerset_BD_Shape_int64_t](#) (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int64_t_t y)

- [int ppl_Pointset_Powerset_BD_Shape_int64_t_geometrically_covers_Pointset_Powerset_BD_Shape_int64_t](#) (ppl_const_Pointset_Powerset_BD_Shape_int64_t x, ppl_const_Pointset_Powerset_BD_Shape_int64_t y)
- [int ppl_Pointset_Powerset_BD_Shape_int64_t_geometrically_equals_Pointset_Powerset_BD_Shape_int64_t](#) (ppl_const_Pointset_Powerset_BD_Shape_int64_t x, ppl_const_Pointset_Powerset_BD_Shape_int64_t y)
- [int ppl_Pointset_Powerset_BD_Shape_int64_t_equals_Pointset_Powerset_BD_Shape_int64_t](#) (ppl_const_Pointset_Powerset_BD_Shape_int64_t x, ppl_const_Pointset_Powerset_BD_Shape_int64_t y)
- [int ppl_Pointset_Powerset_BD_Shape_int64_t_OK](#) (ppl_const_Pointset_Powerset_BD_Shape_int64_t ph)
- [int ppl_Pointset_Powerset_BD_Shape_int64_t_add_constraint](#) (ppl_Pointset_Powerset_BD_Shape_int64_t ph, ppl_const_Constraint_t c)
- [int ppl_Pointset_Powerset_BD_Shape_int64_t_add_congruence](#) (ppl_Pointset_Powerset_BD_Shape_int64_t ph, ppl_const_Congruence_t c)
- [int ppl_Pointset_Powerset_BD_Shape_int64_t_add_constraints](#) (ppl_Pointset_Powerset_BD_Shape_int64_t ph, ppl_const_Constraint_System_t cs)
- [int ppl_Pointset_Powerset_BD_Shape_int64_t_add_congruences](#) (ppl_Pointset_Powerset_BD_Shape_int64_t ph, ppl_const_Congruence_System_t cs)
- [int ppl_Pointset_Powerset_BD_Shape_int64_t_refine_with_constraint](#) (ppl_Pointset_Powerset_BD_Shape_int64_t ph, ppl_const_Constraint_t c)
- [int ppl_Pointset_Powerset_BD_Shape_int64_t_refine_with_congruence](#) (ppl_Pointset_Powerset_BD_Shape_int64_t ph, ppl_const_Congruence_t c)
- [int ppl_Pointset_Powerset_BD_Shape_int64_t_refine_with_constraints](#) (ppl_Pointset_Powerset_BD_Shape_int64_t ph, ppl_const_Constraint_System_t cs)
- [int ppl_Pointset_Powerset_BD_Shape_int64_t_refine_with_congruences](#) (ppl_Pointset_Powerset_BD_Shape_int64_t ph, ppl_const_Congruence_System_t cs)
- [int ppl_Pointset_Powerset_BD_Shape_int64_t_intersection_assign](#) (ppl_Pointset_Powerset_BD_Shape_int64_t x, ppl_const_Pointset_Powerset_BD_Shape_int64_t y)
- [int ppl_Pointset_Powerset_BD_Shape_int64_t_upper_bound_assign](#) (ppl_Pointset_Powerset_BD_Shape_int64_t x, ppl_const_Pointset_Powerset_BD_Shape_int64_t y)
- [int ppl_Pointset_Powerset_BD_Shape_int64_t_difference_assign](#) (ppl_Pointset_Powerset_BD_Shape_int64_t x, ppl_const_Pointset_Powerset_BD_Shape_int64_t y)
- [int ppl_Pointset_Powerset_BD_Shape_int64_t_concatenate_assign](#) (ppl_Pointset_Powerset_BD_Shape_int64_t x, ppl_const_Pointset_Powerset_BD_Shape_int64_t y)
- [int ppl_Pointset_Powerset_BD_Shape_int64_t_time_elapse_assign](#) (ppl_Pointset_Powerset_BD_Shape_int64_t x, ppl_const_Pointset_Powerset_BD_Shape_int64_t y)
- [int ppl_Pointset_Powerset_BD_Shape_int64_t_upper_bound_assign_if_exact](#) (ppl_Pointset_Powerset_BD_Shape_int64_t x, ppl_const_Pointset_Powerset_BD_Shape_int64_t y)
- [int ppl_Pointset_Powerset_BD_Shape_int64_t_simplify_using_context_assign](#) (ppl_Pointset_Powerset_BD_Shape_int64_t x, ppl_const_Pointset_Powerset_BD_Shape_int64_t y)
- [int ppl_Pointset_Powerset_BD_Shape_int64_t_constrains](#) (ppl_Pointset_Powerset_BD_Shape_int64_t ph, ppl_dimension_type var)
- [int ppl_Pointset_Powerset_BD_Shape_int64_t_unconstrain_space_dimension](#) (ppl_Pointset_Powerset_BD_Shape_int64_t ph, ppl_dimension_type var)
- [int ppl_Pointset_Powerset_BD_Shape_int64_t_unconstrain_space_dimensions](#) (ppl_Pointset_Powerset_BD_Shape_int64_t ph, ppl_dimension_type ds[], size_t n)
- [int ppl_Pointset_Powerset_BD_Shape_int64_t_affine_image](#) (ppl_Pointset_Powerset_BD_Shape_int64_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- [int ppl_Pointset_Powerset_BD_Shape_int64_t_affine_preimage](#) (ppl_Pointset_Powerset_BD_Shape_int64_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)

- int [ppl_Pointset_Powerset_BD_Shape_int64_t_bounded_affine_image](#) (ppl_Pointset_Powerset_BD_Shape_int64_t_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_bounded_affine_preimage](#) (ppl_Pointset_Powerset_BD_Shape_int64_t_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_generalized_affine_image](#) (ppl_Pointset_Powerset_BD_Shape_int64_t_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_generalized_affine_preimage](#) (ppl_Pointset_Powerset_BD_Shape_int64_t_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_generalized_affine_image_lhs_rhs](#) (ppl_Pointset_Powerset_BD_Shape_int64_t_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_generalized_affine_preimage_lhs_rhs](#) (ppl_Pointset_Powerset_BD_Shape_int64_t_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_add_space_dimensions_and_embed](#) (ppl_Pointset_Powerset_BD_Shape_int64_t_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_add_space_dimensions_and_project](#) (ppl_Pointset_Powerset_BD_Shape_int64_t_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_remove_space_dimensions](#) (ppl_Pointset_Powerset_BD_Shape_int64_t_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_remove_higher_space_dimensions](#) (ppl_Pointset_Powerset_BD_Shape_int64_t_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_expand_space_dimension](#) (ppl_Pointset_Powerset_BD_Shape_int64_t_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_fold_space_dimensions](#) (ppl_Pointset_Powerset_BD_Shape_int64_t_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_map_space_dimensions](#) (ppl_Pointset_Powerset_BD_Shape_int64_t_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_drop_some_non_integer_points](#) (ppl_Pointset_Powerset_BD_Shape_int64_t_t ph, int complexity)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_drop_some_non_integer_points_2](#) (ppl_Pointset_Powerset_BD_Shape_int64_t_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_external_memory_in_bytes](#) (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_total_memory_in_bytes](#) (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_size](#) (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_add_disjunct](#) (ppl_Pointset_Powerset_BD_Shape_int64_t_t ps, ppl_const_BD_Shape_int64_t_t d)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_drop_disjunct](#) (ppl_Pointset_Powerset_BD_Shape_int64_t_t ps, ppl_const_Pointset_Powerset_BD_Shape_int64_t_iterator_t cit, ppl_Pointset_Powerset_BD_Shape_int64_t_iterator_t it)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_drop_disjuncts](#) (ppl_Pointset_Powerset_BD_Shape_int64_t_t ps, ppl_const_Pointset_Powerset_BD_Shape_int64_t_iterator_t first, ppl_const_Pointset_Powerset_BD_Shape_int64_t_iterator_t last)
- int [ppl_Pointset_Powerset_BD_Shape_int64_t_BHZ03_H79_BHMZ05_widening_assign](#) (ppl_Pointset_Powerset_BD_Shape_int64_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int64_t_t y)

- `int ppl_Pointset_Powerset_BD_Shape_int64_t_BHZ03_H79_H79_widening_assign` (`ppl_Pointset_Powerset_BD_Shape_int64_t_t` `x`, `ppl_const_Pointset_Powerset_BD_Shape_int64_t_t` `y`)
- `int ppl_Pointset_Powerset_BD_Shape_int64_t_BGP99_BHMZ05_extrapolation_assign` (`ppl_Pointset_Powerset_BD_Shape_int64_t_t` `x`, `ppl_const_Pointset_Powerset_BD_Shape_int64_t_t` `y`, `int` `disjuncts`)
- `int ppl_Pointset_Powerset_BD_Shape_int64_t_BGP99_H79_extrapolation_assign` (`ppl_Pointset_Powerset_BD_Shape_int64_t_t` `x`, `ppl_const_Pointset_Powerset_BD_Shape_int64_t_t` `y`, `int` `disjuncts`)

10.68.1 Detailed Description

Types and functions for `ppl_Pointset_Powerset_BD_Shape_int64_t_tag`.

10.68.2 Friends And Related Function Documentation

- 10.68.2.1** `int ppl_delete_Pointset_Powerset_BD_Shape_int64_t (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ph)` [**related**]
- 10.68.2.2** `int ppl_new_Pointset_Powerset_BD_Shape_int64_t_from_BD_Shape_int64_t (ppl_Pointset_Powerset_BD_Shape_int64_t_t * pph, ppl_const_BD_Shape_int64_t_t ph)` [**related**]
- 10.68.2.3** `int ppl_new_Pointset_Powerset_BD_Shape_int64_t_from_BD_Shape_int64_t_with_complexity (ppl_Pointset_Powerset_BD_Shape_int64_t_t * pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)` [**related**]
- 10.68.2.4** `int ppl_new_Pointset_Powerset_BD_Shape_int64_t_from_Congruence_System (ppl_Pointset_Powerset_BD_Shape_int64_t_t * pph, ppl_const_Congruence_System_t cs)` [**related**]
- 10.68.2.5** `int ppl_new_Pointset_Powerset_BD_Shape_int64_t_from_Constraint_System (ppl_Pointset_Powerset_BD_Shape_int64_t_t * pph, ppl_const_Constraint_System_t cs)` [**related**]

- 10.68.2.6** `int ppl_new_Pointset_Powerset_BD_Shape_int64_t_from_Pointset_Powerset_BD_Shape_int64_t (ppl_Pointset_Powerset_BD_Shape_int64_t * pph, ppl_const_Pointset_Powerset_BD_Shape_int64_t ph)` `[related]`
- 10.68.2.7** `int ppl_new_Pointset_Powerset_BD_Shape_int64_t_from_Pointset_Powerset_BD_Shape_int64_t_with_complexity (ppl_Pointset_Powerset_BD_Shape_int64_t * pph, ppl_const_Pointset_Powerset_BD_Shape_int64_t ph, int complexity)` `[related]`
- 10.68.2.8** `int ppl_new_Pointset_Powerset_BD_Shape_int64_t_from_space_dimension (ppl_Pointset_Powerset_BD_Shape_int64_t * pph, ppl_dimension_type d, int empty)` `[related]`
- 10.68.2.9** `int ppl_Pointset_Powerset_BD_Shape_int64_t_add_congruence (ppl_Pointset_Powerset_BD_Shape_int64_t ph, ppl_const_Congruence_t c)` `[related]`
- 10.68.2.10** `int ppl_Pointset_Powerset_BD_Shape_int64_t_add_congruences (ppl_Pointset_Powerset_BD_Shape_int64_t ph, ppl_const_Congruence_System_t cs)` `[related]`
- 10.68.2.11** `int ppl_Pointset_Powerset_BD_Shape_int64_t_add_constraint (ppl_Pointset_Powerset_BD_Shape_int64_t ph, ppl_const_Constraint_t c)` `[related]`
- 10.68.2.12** `int ppl_Pointset_Powerset_BD_Shape_int64_t_add_constraints (ppl_Pointset_Powerset_BD_Shape_int64_t ph, ppl_const_Constraint_System_t cs)` `[related]`
- 10.68.2.13** `int ppl_Pointset_Powerset_BD_Shape_int64_t_add_disjunct (ppl_Pointset_Powerset_BD_Shape_int64_t ps, ppl_const_BD_Shape_int64_t d)` `[related]`

- 10.68.2.14 `int ppl_Pointset_Powerset_BD_Shape_int64_t_add_space_dimensions_and_embed`
(`ppl_Pointset_Powerset_BD_Shape_int64_t t ph`, `ppl_dimension_type d`)
[related]
- 10.68.2.15 `int ppl_Pointset_Powerset_BD_Shape_int64_t_add_space_dimensions_and_project`
(`ppl_Pointset_Powerset_BD_Shape_int64_t t ph`, `ppl_dimension_type d`)
[related]
- 10.68.2.16 `int ppl_Pointset_Powerset_BD_Shape_int64_t_affine_dimension`
(`ppl_const_Pointset_Powerset_BD_Shape_int64_t t ph`, `ppl_dimension_type * m`)
[related]
- 10.68.2.17 `int ppl_Pointset_Powerset_BD_Shape_int64_t_affine_image` (`ppl_Pointset_Powerset_-`
`BD_Shape_int64_t t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [related]
- 10.68.2.18 `int ppl_Pointset_Powerset_BD_Shape_int64_t_affine_preimage`
(`ppl_Pointset_Powerset_BD_Shape_int64_t t ph`, `ppl_dimension_type var`,
`ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`) [related]
- 10.68.2.19 `int ppl_Pointset_Powerset_BD_Shape_int64_t_BGP99_BHMZ05_-`
`extrapolation_assign` (`ppl_Pointset_Powerset_BD_Shape_int64_t t x`,
`ppl_const_Pointset_Powerset_BD_Shape_int64_t t y`, `int disjuncts`) [related]
- 10.68.2.20 `int ppl_Pointset_Powerset_BD_Shape_int64_t_BGP99_H79_-`
`extrapolation_assign` (`ppl_Pointset_Powerset_BD_Shape_int64_t t x`,
`ppl_const_Pointset_Powerset_BD_Shape_int64_t t y`, `int disjuncts`) [related]
- 10.68.2.21 `int ppl_Pointset_Powerset_BD_Shape_int64_t_BHZ03_H79_BHMZ05_-`
`widening_assign` (`ppl_Pointset_Powerset_BD_Shape_int64_t t x`,
`ppl_const_Pointset_Powerset_BD_Shape_int64_t t y`) [related]

- 10.68.2.22 `int ppl_Pointset_Powerset_BD_Shape_int64_t_BHZ03_H79_H79_widening_assign (ppl_Pointset_Powerset_BD_Shape_int64_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int64_t_t y)` [**related**]
- 10.68.2.23 `int ppl_Pointset_Powerset_BD_Shape_int64_t_bounded_affine_image (ppl_Pointset_Powerset_BD_Shape_int64_t_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [**related**]
- 10.68.2.24 `int ppl_Pointset_Powerset_BD_Shape_int64_t_bounded_affine_preimage (ppl_Pointset_Powerset_BD_Shape_int64_t_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [**related**]
- 10.68.2.25 `int ppl_Pointset_Powerset_BD_Shape_int64_t_bounds_from_above (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le)` [**related**]
- 10.68.2.26 `int ppl_Pointset_Powerset_BD_Shape_int64_t_bounds_from_below (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le)` [**related**]
- 10.68.2.27 `int ppl_Pointset_Powerset_BD_Shape_int64_t_concatenate_assign (ppl_Pointset_Powerset_BD_Shape_int64_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int64_t_t y)` [**related**]
- 10.68.2.28 `int ppl_Pointset_Powerset_BD_Shape_int64_t_constrains (ppl_Pointset_Powerset_BD_Shape_int64_t_t ph, ppl_dimension_type var)` [**related**]
- 10.68.2.29 `int ppl_Pointset_Powerset_BD_Shape_int64_t_contains_integer_point (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ph)` [**related**]

- 10.68.2.30 `int ppl_Pointset_Powerset_BD_Shape_int64_t_contains_Pointset_Powerset_-
BD_Shape_int64_t (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t x,
ppl_const_Pointset_Powerset_BD_Shape_int64_t_t y) [related]`
- 10.68.2.31 `int ppl_Pointset_Powerset_BD_Shape_int64_t_difference_assign (ppl_Pointset_-
Powerset_BD_Shape_int64_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int64_t_t
y) [related]`
- 10.68.2.32 `int ppl_Pointset_Powerset_BD_Shape_int64_t_drop_disjunct (ppl_Pointset_Powerset_-
BD_Shape_int64_t_t ps, ppl_const_Pointset_Powerset_BD_Shape_int64_t_iterator_t
cit, ppl_Pointset_Powerset_BD_Shape_int64_t_iterator_t it) [related]`
- 10.68.2.33 `int ppl_Pointset_Powerset_BD_Shape_int64_t_drop_disjuncts (ppl_Pointset_-
Powerset_BD_Shape_int64_t_t ps, ppl_const_Pointset_Powerset_BD_Shape_int64_-
t_iterator_t first, ppl_const_Pointset_Powerset_BD_Shape_int64_t_iterator_t last)
[related]`
- 10.68.2.34 `int ppl_Pointset_Powerset_BD_Shape_int64_t_drop_some_non_integer_points
(ppl_Pointset_Powerset_BD_Shape_int64_t_t ph, int complexity) [related]`
- 10.68.2.35 `int ppl_Pointset_Powerset_BD_Shape_int64_t_drop_some_non_integer_points_2
(ppl_Pointset_Powerset_BD_Shape_int64_t_t ph, ppl_dimension_type ds[], size_t n,
int complexity) [related]`
- 10.68.2.36 `int ppl_Pointset_Powerset_BD_Shape_int64_t_equals_Pointset_Powerset_-
BD_Shape_int64_t (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t x,
ppl_const_Pointset_Powerset_BD_Shape_int64_t_t y) [related]`
- 10.68.2.37 `int ppl_Pointset_Powerset_BD_Shape_int64_t_expand_space_dimension
(ppl_Pointset_Powerset_BD_Shape_int64_t_t ph, ppl_dimension_type d,
ppl_dimension_type m) [related]`

- 10.68.2.38 `int ppl_Pointset_Powerset_BD_Shape_int64_t_external_memory_in_bytes`
(`ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ps`, `size_t * sz`) [`related`]
- 10.68.2.39 `int ppl_Pointset_Powerset_BD_Shape_int64_t_fold_space_dimensions`
(`ppl_Pointset_Powerset_BD_Shape_int64_t_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`,
`ppl_dimension_type d`) [`related`]
- 10.68.2.40 `int ppl_Pointset_Powerset_BD_Shape_int64_t_generalized_affine_image`
(`ppl_Pointset_Powerset_BD_Shape_int64_t_t ph`, `ppl_dimension_type var`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.68.2.41 `int ppl_Pointset_Powerset_BD_Shape_int64_t_generalized_affine_image_lhs_rhs`
(`ppl_Pointset_Powerset_BD_Shape_int64_t_t ph`, `ppl_const_Linear_Expression_t`
`lhs`, `enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
[`related`]
- 10.68.2.42 `int ppl_Pointset_Powerset_BD_Shape_int64_t_generalized_affine_preimage`
(`ppl_Pointset_Powerset_BD_Shape_int64_t_t ph`, `ppl_dimension_type var`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.68.2.43 `int ppl_Pointset_Powerset_BD_Shape_int64_t_generalized_affine_preimage_lhs_rhs`
(`ppl_Pointset_Powerset_BD_Shape_int64_t_t ph`, `ppl_const_Linear_Expression_t`
`lhs`, `enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
[`related`]
- 10.68.2.44 `int ppl_Pointset_Powerset_BD_Shape_int64_t_geometrically_covers_Pointset -`
`Powerset_BD_Shape_int64_t` (`ppl_const_Pointset_Powerset_BD_Shape_int64_t_t x`,
`ppl_const_Pointset_Powerset_BD_Shape_int64_t_t y`) [`related`]

- 10.68.2.45 `int ppl_Pointset_Powerset_BD_Shape_int64_t_geometrically_equals_Pointset_Powerset_BD_Shape_int64_t (ppl_const_Pointset_Powerset_BD_Shape_int64_t tx, ppl_const_Pointset_Powerset_BD_Shape_int64_t ty)` **[related]**
- 10.68.2.46 `int ppl_Pointset_Powerset_BD_Shape_int64_t_intersection_assign (ppl_Pointset_Powerset_BD_Shape_int64_t tx, ppl_const_Pointset_Powerset_BD_Shape_int64_t ty)` **[related]**
- 10.68.2.47 `int ppl_Pointset_Powerset_BD_Shape_int64_t_is_bounded (ppl_const_Pointset_Powerset_BD_Shape_int64_t tph)` **[related]**
- 10.68.2.48 `int ppl_Pointset_Powerset_BD_Shape_int64_t_is_discrete (ppl_const_Pointset_Powerset_BD_Shape_int64_t tph)` **[related]**
- 10.68.2.49 `int ppl_Pointset_Powerset_BD_Shape_int64_t_is_disjoint_from_Pointset_Powerset_BD_Shape_int64_t (ppl_const_Pointset_Powerset_BD_Shape_int64_t tx, ppl_const_Pointset_Powerset_BD_Shape_int64_t ty)` **[related]**
- 10.68.2.50 `int ppl_Pointset_Powerset_BD_Shape_int64_t_is_empty (ppl_const_Pointset_Powerset_BD_Shape_int64_t tph)` **[related]**
- 10.68.2.51 `int ppl_Pointset_Powerset_BD_Shape_int64_t_is_topologically_closed (ppl_const_Pointset_Powerset_BD_Shape_int64_t tph)` **[related]**
- 10.68.2.52 `int ppl_Pointset_Powerset_BD_Shape_int64_t_is_universe (ppl_const_Pointset_Powerset_BD_Shape_int64_t tph)` **[related]**
- 10.68.2.53 `int ppl_Pointset_Powerset_BD_Shape_int64_t_map_space_dimensions (ppl_Pointset_Powerset_BD_Shape_int64_t tph, ppl_dimension_type maps[], size_t n)` **[related]**

- 10.68.2.54 `int ppl_Pointset_Powerset_BD_Shape_int64_t_maximize (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)` [related]
- 10.68.2.55 `int ppl_Pointset_Powerset_BD_Shape_int64_t_maximize_with_point (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` [related]
- 10.68.2.56 `int ppl_Pointset_Powerset_BD_Shape_int64_t_minimize (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)` [related]
- 10.68.2.57 `int ppl_Pointset_Powerset_BD_Shape_int64_t_minimize_with_point (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` [related]
- 10.68.2.58 `int ppl_Pointset_Powerset_BD_Shape_int64_t_OK (ppl_const_Pointset_Powerset_BD_Shape_int64_t_t ph)` [related]
- 10.68.2.59 `int ppl_Pointset_Powerset_BD_Shape_int64_t_omega_reduce (ppl_Pointset_Powerset_BD_Shape_int64_t_t ph)` [related]
- 10.68.2.60 `int ppl_Pointset_Powerset_BD_Shape_int64_t_pairwise_reduce (ppl_Pointset_Powerset_BD_Shape_int64_t_t ph)` [related]
- 10.68.2.61 `int ppl_Pointset_Powerset_BD_Shape_int64_t_refine_with_congruence (ppl_Pointset_Powerset_BD_Shape_int64_t_t ph, ppl_const_Congruence_t c)` [related]

- 10.68.2.62 `int ppl_Pointset_Powerset_BD_Shape_int64_t_refine_with_congruences`
 (`ppl_Pointset_Powerset_BD_Shape_int64_t t ph`, `ppl_const_Congruence_System_t cs`)
 [related]
- 10.68.2.63 `int ppl_Pointset_Powerset_BD_Shape_int64_t_refine_with_constraint`
 (`ppl_Pointset_Powerset_BD_Shape_int64_t t ph`, `ppl_const_Constraint_t c`)
 [related]
- 10.68.2.64 `int ppl_Pointset_Powerset_BD_Shape_int64_t_refine_with_constraints`
 (`ppl_Pointset_Powerset_BD_Shape_int64_t t ph`, `ppl_const_Constraint_System_t cs`)
 [related]
- 10.68.2.65 `int ppl_Pointset_Powerset_BD_Shape_int64_t_relation_with_Congruence`
 (`ppl_const_Pointset_Powerset_BD_Shape_int64_t t ph`, `ppl_const_Congruence_t c`)
 [related]
- 10.68.2.66 `int ppl_Pointset_Powerset_BD_Shape_int64_t_relation_with_Constraint`
 (`ppl_const_Pointset_Powerset_BD_Shape_int64_t t ph`, `ppl_const_Constraint_t c`)
 [related]
- 10.68.2.67 `int ppl_Pointset_Powerset_BD_Shape_int64_t_relation_with_Generator`
 (`ppl_const_Pointset_Powerset_BD_Shape_int64_t t ph`, `ppl_const_Generator_t c`)
 [related]
- 10.68.2.68 `int ppl_Pointset_Powerset_BD_Shape_int64_t_remove_higher_space_dimensions`
 (`ppl_Pointset_Powerset_BD_Shape_int64_t t ph`, `ppl_dimension_type d`)
 [related]
- 10.68.2.69 `int ppl_Pointset_Powerset_BD_Shape_int64_t_remove_space_dimensions`
 (`ppl_Pointset_Powerset_BD_Shape_int64_t t ph`, `ppl_dimension_type ds[ ]`, `size_t n`)
 [related]

- 10.68.2.70** `int ppl_Pointset_Powerset_BD_Shape_int64_t_simplify_using_context_assign (ppl_Pointset_Powerset_BD_Shape_int64_t x, ppl_const_Pointset_Powerset_BD_Shape_int64_t y)` [**related**]
- 10.68.2.71** `int ppl_Pointset_Powerset_BD_Shape_int64_t_size (ppl_const_Pointset_Powerset_BD_Shape_int64_t ps, size_t * sz)` [**related**]
- 10.68.2.72** `int ppl_Pointset_Powerset_BD_Shape_int64_t_space_dimension (ppl_const_Pointset_Powerset_BD_Shape_int64_t ph, ppl_dimension_type * m)` [**related**]
- 10.68.2.73** `int ppl_Pointset_Powerset_BD_Shape_int64_t_strictly_contains_Pointset_Powerset_BD_Shape_int64_t (ppl_const_Pointset_Powerset_BD_Shape_int64_t x, ppl_const_Pointset_Powerset_BD_Shape_int64_t y)` [**related**]
- 10.68.2.74** `int ppl_Pointset_Powerset_BD_Shape_int64_t_time_elapse_assign (ppl_Pointset_Powerset_BD_Shape_int64_t x, ppl_const_Pointset_Powerset_BD_Shape_int64_t y)` [**related**]
- 10.68.2.75** `int ppl_Pointset_Powerset_BD_Shape_int64_t_topological_closure_assign (ppl_Pointset_Powerset_BD_Shape_int64_t ph)` [**related**]
- 10.68.2.76** `int ppl_Pointset_Powerset_BD_Shape_int64_t_total_memory_in_bytes (ppl_const_Pointset_Powerset_BD_Shape_int64_t ps, size_t * sz)` [**related**]
- 10.68.2.77** `int ppl_Pointset_Powerset_BD_Shape_int64_t_unconstrain_space_dimension (ppl_Pointset_Powerset_BD_Shape_int64_t ph, ppl_dimension_type var)` [**related**]

- 10.68.2.78** `int ppl_Pointset_Powerset_BD_Shape_int64_t_unconstrain_space_dimensions`
 (`ppl_Pointset_Powerset_BD_Shape_int64_t_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`)
 [**related**]
- 10.68.2.79** `int ppl_Pointset_Powerset_BD_Shape_int64_t_upper_bound_assign` (`ppl_Pointset_Powerset_BD_Shape_int64_t_t x`, `ppl_const_Pointset_Powerset_BD_Shape_int64_t_t y`) [**related**]
- 10.68.2.80** `int ppl_Pointset_Powerset_BD_Shape_int64_t_upper_bound_assign_if_exact` (`ppl_Pointset_Powerset_BD_Shape_int64_t_t x`, `ppl_const_Pointset_Powerset_BD_Shape_int64_t_t y`) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.69 `ppl_Pointset_Powerset_BD_Shape_int8_t_const_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a `const ppl_Pointset_Powerset_BD_Shape_int8_t_tag`.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_BD_Shape_int8_t_const_iterator` (`ppl_Pointset_Powerset_BD_Shape_int8_t_const_iterator_t *pit`)
- `int ppl_new_Pointset_Powerset_BD_Shape_int8_t_const_iterator_from_const_iterator` (`ppl_Pointset_Powerset_BD_Shape_int8_t_const_iterator_t *px`, `ppl_const_Pointset_Powerset_BD_Shape_int8_t_const_iterator_t y`)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_const_iterator_begin` (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_t ps`, `ppl_Pointset_Powerset_BD_Shape_int8_t_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_const_iterator_end` (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_t ps`, `ppl_Pointset_Powerset_BD_Shape_int8_t_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_const_iterator_equal_test` (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_const_iterator_t x`, `ppl_const_Pointset_Powerset_BD_Shape_int8_t_const_iterator_t y`)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_const_iterator_increment` (`ppl_Pointset_Powerset_BD_Shape_int8_t_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_const_iterator_decrement` (`ppl_Pointset_Powerset_BD_Shape_int8_t_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_const_iterator_dereference` (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_const_iterator_t ps`, `ppl_const_BD_Shape_int8_t_t *d`)

- int [ppl_delete_Pointset_Powerset_BD_Shape_int8_t_const_iterator](#) (ppl_const_Pointset_Powerset_BD_Shape_int8_t_const_iterator_t *psit*)

10.69.1 Detailed Description

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_BD_Shape_int8_t_tag](#).

10.69.2 Friends And Related Function Documentation

10.69.2.1 int [ppl_delete_Pointset_Powerset_BD_Shape_int8_t_const_iterator](#) (ppl_const_Pointset_Powerset_BD_Shape_int8_t_const_iterator_t *psit*) [[related](#)]

10.69.2.2 int [ppl_new_Pointset_Powerset_BD_Shape_int8_t_const_iterator](#) (ppl_Pointset_Powerset_BD_Shape_int8_t_const_iterator_t * *pit*) [[related](#)]

10.69.2.3 int [ppl_new_Pointset_Powerset_BD_Shape_int8_t_const_iterator_from_const_iterator](#) (ppl_Pointset_Powerset_BD_Shape_int8_t_const_iterator_t * *px*, ppl_const_Pointset_Powerset_BD_Shape_int8_t_const_iterator_t *y*) [[related](#)]

10.69.2.4 int [ppl_Pointset_Powerset_BD_Shape_int8_t_const_iterator_begin](#) (ppl_const_Pointset_Powerset_BD_Shape_int8_t_t *ps*, ppl_Pointset_Powerset_BD_Shape_int8_t_const_iterator_t *psit*) [[related](#)]

10.69.2.5 int [ppl_Pointset_Powerset_BD_Shape_int8_t_const_iterator_decrement](#) (ppl_Pointset_Powerset_BD_Shape_int8_t_const_iterator_t *psit*) [[related](#)]

10.69.2.6 int [ppl_Pointset_Powerset_BD_Shape_int8_t_const_iterator_dereference](#) (ppl_const_Pointset_Powerset_BD_Shape_int8_t_const_iterator_t *ps*, ppl_const_BD_Shape_int8_t_t * *d*) [[related](#)]

10.69.2.7 int [ppl_Pointset_Powerset_BD_Shape_int8_t_const_iterator_end](#) (ppl_const_Pointset_Powerset_BD_Shape_int8_t_t *ps*, ppl_Pointset_Powerset_BD_Shape_int8_t_const_iterator_t *psit*) [[related](#)]

10.69.2.8 `int ppl_Pointset_Powerset_BD_Shape_int8_t_const_iterator_equal_test`
 (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_const_iterator_t x`,
`ppl_const_Pointset_Powerset_BD_Shape_int8_t_const_iterator_t y`) [**related**]

10.69.2.9 `int ppl_Pointset_Powerset_BD_Shape_int8_t_const_iterator_increment`
 (`ppl_Pointset_Powerset_BD_Shape_int8_t_const_iterator_t psit`) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.70 `ppl_Pointset_Powerset_BD_Shape_int8_t_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a `ppl_Pointset_Powerset_BD_Shape_int8_t_tag`.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_BD_Shape_int8_t_iterator` (`ppl_Pointset_Powerset_BD_Shape_int8_t_iterator_t *pit`)
- `int ppl_new_Pointset_Powerset_BD_Shape_int8_t_iterator_from_iterator` (`ppl_Pointset_Powerset_BD_Shape_int8_t_iterator_t *px`, `ppl_const_Pointset_Powerset_BD_Shape_int8_t_iterator_t y`)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_iterator_begin` (`ppl_Pointset_Powerset_BD_Shape_int8_t_t ps`, `ppl_Pointset_Powerset_BD_Shape_int8_t_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_iterator_end` (`ppl_Pointset_Powerset_BD_Shape_int8_t_t ps`, `ppl_Pointset_Powerset_BD_Shape_int8_t_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_iterator_equal_test` (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_iterator_t x`, `ppl_const_Pointset_Powerset_BD_Shape_int8_t_iterator_t y`)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_iterator_increment` (`ppl_Pointset_Powerset_BD_Shape_int8_t_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_iterator_decrement` (`ppl_Pointset_Powerset_BD_Shape_int8_t_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_iterator_dereference` (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_iterator_t ps`, `ppl_const_BD_Shape_int8_t_t *d`)
- `int ppl_delete_Pointset_Powerset_BD_Shape_int8_t_iterator` (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_iterator_t psit`)

10.70.1 Detailed Description

Types and functions for iterating on the disjuncts of a `ppl_Pointset_Powerset_BD_Shape_int8_t_tag`.

10.70.2 Friends And Related Function Documentation

- 10.70.2.1** `int ppl_delete_Pointset_Powerset_BD_Shape_int8_t_iterator`
`(ppl_const_Pointset_Powerset_BD_Shape_int8_t_iterator_t psit)` [**related**]
- 10.70.2.2** `int ppl_new_Pointset_Powerset_BD_Shape_int8_t_iterator`
`(ppl_Pointset_Powerset_BD_Shape_int8_t_iterator_t * pit)` [**related**]
- 10.70.2.3** `int ppl_new_Pointset_Powerset_BD_Shape_int8_t_iterator_from_-`
`iterator (ppl_Pointset_Powerset_BD_Shape_int8_t_iterator_t * px,`
`ppl_const_Pointset_Powerset_BD_Shape_int8_t_iterator_t y)` [**related**]
- 10.70.2.4** `int ppl_Pointset_Powerset_BD_Shape_int8_t_iterator_begin` `(ppl_Pointset_Powerset_-`
`BD_Shape_int8_t_t ps, ppl_Pointset_Powerset_BD_Shape_int8_t_iterator_t psit)`
[related]
- 10.70.2.5** `int ppl_Pointset_Powerset_BD_Shape_int8_t_iterator_decrement`
`(ppl_Pointset_Powerset_BD_Shape_int8_t_iterator_t psit)` [**related**]
- 10.70.2.6** `int ppl_Pointset_Powerset_BD_Shape_int8_t_iterator_dereference` `(ppl_const_-`
`Pointset_Powerset_BD_Shape_int8_t_iterator_t ps, ppl_const_BD_Shape_int8_t_t * d)`
[related]
- 10.70.2.7** `int ppl_Pointset_Powerset_BD_Shape_int8_t_iterator_end` `(ppl_Pointset_Powerset_-`
`BD_Shape_int8_t_t ps, ppl_Pointset_Powerset_BD_Shape_int8_t_iterator_t psit)`
[related]
- 10.70.2.8** `int ppl_Pointset_Powerset_BD_Shape_int8_t_iterator_equal_test`
`(ppl_const_Pointset_Powerset_BD_Shape_int8_t_iterator_t x,`
`ppl_const_Pointset_Powerset_BD_Shape_int8_t_iterator_t y)` [**related**]

10.70.2.9 `int ppl_Pointset_Powerset_BD_Shape_int8_t_iterator_increment` `(ppl_Pointset_Powerset_BD_Shape_int8_t_iterator_t psit)` [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.71 `ppl_Pointset_Powerset_BD_Shape_int8_t_tag` Interface Reference

Types and functions for [ppl_Pointset_Powerset_BD_Shape_int8_t_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Pointset_Powerset_BD_Shape_int8_t` (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_t` *ph*)
- `int ppl_new_Pointset_Powerset_BD_Shape_int8_t_from_space_dimension` (`ppl_Pointset_Powerset_BD_Shape_int8_t_t` **pph*, `ppl_dimension_type` *d*, `int` *empty*)
- `int ppl_new_Pointset_Powerset_BD_Shape_int8_t_from_Pointset_Powerset_BD_Shape_int8_t` (`ppl_Pointset_Powerset_BD_Shape_int8_t_t` **pph*, `ppl_const_Pointset_Powerset_BD_Shape_int8_t_t` *ph*)
- `int ppl_new_Pointset_Powerset_BD_Shape_int8_t_from_BD_Shape_int8_t` (`ppl_Pointset_Powerset_BD_Shape_int8_t_t` **pph*, `ppl_const_BD_Shape_int8_t_t` *ph*)
- `int ppl_new_Pointset_Powerset_BD_Shape_int8_t_from_Pointset_Powerset_BD_Shape_int8_t_with_complexity` (`ppl_Pointset_Powerset_BD_Shape_int8_t_t` **pph*, `ppl_const_Pointset_Powerset_BD_Shape_int8_t_t` *ph*, `int` *complexity*)
- `int ppl_new_Pointset_Powerset_BD_Shape_int8_t_from_BD_Shape_int8_t_with_complexity` (`ppl_Pointset_Powerset_BD_Shape_int8_t_t` **pph*, `ppl_const_BD_Shape_int8_t_t` *ph*, `int` *complexity*)
- `int ppl_new_Pointset_Powerset_BD_Shape_int8_t_from_Constraint_System` (`ppl_Pointset_Powerset_BD_Shape_int8_t_t` **pph*, `ppl_const_Constraint_System_t` *cs*)
- `int ppl_new_Pointset_Powerset_BD_Shape_int8_t_from_Congruence_System` (`ppl_Pointset_Powerset_BD_Shape_int8_t_t` **pph*, `ppl_const_Congruence_System_t` *cs*)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_space_dimension` (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_t` *ph*, `ppl_dimension_type` **m*)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_affine_dimension` (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_t` *ph*, `ppl_dimension_type` **m*)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_relation_with_Constraint` (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_t` *ph*, `ppl_const_Constraint_t` *c*)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_relation_with_Generator` (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_t` *ph*, `ppl_const_Generator_t` *c*)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_relation_with_Congruence` (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_t` *ph*, `ppl_const_Congruence_t` *c*)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_is_empty` (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_t` *ph*)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_is_universe` (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_t` *ph*)

- int [ppl_Pointset_Powerset_BD_Shape_int8_t_is_bounded](#) (ppl_const_Pointset_Powerset_BD_Shape_int8_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int8_t_contains_integer_point](#) (ppl_const_Pointset_Powerset_BD_Shape_int8_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int8_t_is_topologically_closed](#) (ppl_const_Pointset_Powerset_BD_Shape_int8_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int8_t_is_discrete](#) (ppl_const_Pointset_Powerset_BD_Shape_int8_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int8_t_topological_closure_assign](#) (ppl_Pointset_Powerset_BD_Shape_int8_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int8_t_pairwise_reduce](#) (ppl_Pointset_Powerset_BD_Shape_int8_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int8_t_omega_reduce](#) (ppl_Pointset_Powerset_BD_Shape_int8_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int8_t_bounds_from_above](#) (ppl_const_Pointset_Powerset_BD_Shape_int8_t_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_BD_Shape_int8_t_bounds_from_below](#) (ppl_const_Pointset_Powerset_BD_Shape_int8_t_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_BD_Shape_int8_t_maximize](#) (ppl_const_Pointset_Powerset_BD_Shape_int8_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_BD_Shape_int8_t_minimize](#) (ppl_const_Pointset_Powerset_BD_Shape_int8_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_BD_Shape_int8_t_maximize_with_point](#) (ppl_const_Pointset_Powerset_BD_Shape_int8_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_BD_Shape_int8_t_minimize_with_point](#) (ppl_const_Pointset_Powerset_BD_Shape_int8_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_BD_Shape_int8_t_contains_Pointset_Powerset_BD_Shape_int8_t](#) (ppl_const_Pointset_Powerset_BD_Shape_int8_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int8_t_t y)
- int [ppl_Pointset_Powerset_BD_Shape_int8_t_strictly_contains_Pointset_Powerset_BD_Shape_int8_t](#) (ppl_const_Pointset_Powerset_BD_Shape_int8_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int8_t_t y)
- int [ppl_Pointset_Powerset_BD_Shape_int8_t_is_disjoint_from_Pointset_Powerset_BD_Shape_int8_t](#) (ppl_const_Pointset_Powerset_BD_Shape_int8_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int8_t_t y)
- int [ppl_Pointset_Powerset_BD_Shape_int8_t_geometrically_covers_Pointset_Powerset_BD_Shape_int8_t](#) (ppl_const_Pointset_Powerset_BD_Shape_int8_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int8_t_t y)
- int [ppl_Pointset_Powerset_BD_Shape_int8_t_geometrically_equals_Pointset_Powerset_BD_Shape_int8_t](#) (ppl_const_Pointset_Powerset_BD_Shape_int8_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int8_t_t y)
- int [ppl_Pointset_Powerset_BD_Shape_int8_t_equals_Pointset_Powerset_BD_Shape_int8_t](#) (ppl_const_Pointset_Powerset_BD_Shape_int8_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int8_t_t y)
- int [ppl_Pointset_Powerset_BD_Shape_int8_t_OK](#) (ppl_const_Pointset_Powerset_BD_Shape_int8_t_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_int8_t_add_constraint](#) (ppl_Pointset_Powerset_BD_Shape_int8_t_t ph, ppl_const_Constraint_t c)

- [int ppl_Pointset_Powerset_BD_Shape_int8_t_add_congruence](#) (ppl_Pointset_Powerset_BD_Shape_int8_t_t ph, ppl_const_Congruence_t c)
- [int ppl_Pointset_Powerset_BD_Shape_int8_t_add_constraints](#) (ppl_Pointset_Powerset_BD_Shape_int8_t_t ph, ppl_const_Constraint_System_t cs)
- [int ppl_Pointset_Powerset_BD_Shape_int8_t_add_congruences](#) (ppl_Pointset_Powerset_BD_Shape_int8_t_t ph, ppl_const_Congruence_System_t cs)
- [int ppl_Pointset_Powerset_BD_Shape_int8_t_refine_with_constraint](#) (ppl_Pointset_Powerset_BD_Shape_int8_t_t ph, ppl_const_Constraint_t c)
- [int ppl_Pointset_Powerset_BD_Shape_int8_t_refine_with_congruence](#) (ppl_Pointset_Powerset_BD_Shape_int8_t_t ph, ppl_const_Congruence_t c)
- [int ppl_Pointset_Powerset_BD_Shape_int8_t_refine_with_constraints](#) (ppl_Pointset_Powerset_BD_Shape_int8_t_t ph, ppl_const_Constraint_System_t cs)
- [int ppl_Pointset_Powerset_BD_Shape_int8_t_refine_with_congruences](#) (ppl_Pointset_Powerset_BD_Shape_int8_t_t ph, ppl_const_Congruence_System_t cs)
- [int ppl_Pointset_Powerset_BD_Shape_int8_t_intersection_assign](#) (ppl_Pointset_Powerset_BD_Shape_int8_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int8_t_t y)
- [int ppl_Pointset_Powerset_BD_Shape_int8_t_upper_bound_assign](#) (ppl_Pointset_Powerset_BD_Shape_int8_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int8_t_t y)
- [int ppl_Pointset_Powerset_BD_Shape_int8_t_difference_assign](#) (ppl_Pointset_Powerset_BD_Shape_int8_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int8_t_t y)
- [int ppl_Pointset_Powerset_BD_Shape_int8_t_concatenate_assign](#) (ppl_Pointset_Powerset_BD_Shape_int8_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int8_t_t y)
- [int ppl_Pointset_Powerset_BD_Shape_int8_t_time_elapse_assign](#) (ppl_Pointset_Powerset_BD_Shape_int8_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int8_t_t y)
- [int ppl_Pointset_Powerset_BD_Shape_int8_t_upper_bound_assign_if_exact](#) (ppl_Pointset_Powerset_BD_Shape_int8_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int8_t_t y)
- [int ppl_Pointset_Powerset_BD_Shape_int8_t_simplify_using_context_assign](#) (ppl_Pointset_Powerset_BD_Shape_int8_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int8_t_t y)
- [int ppl_Pointset_Powerset_BD_Shape_int8_t_constrains](#) (ppl_Pointset_Powerset_BD_Shape_int8_t_t ph, [ppl_dimension_type](#) var)
- [int ppl_Pointset_Powerset_BD_Shape_int8_t_unconstrain_space_dimension](#) (ppl_Pointset_Powerset_BD_Shape_int8_t_t ph, [ppl_dimension_type](#) var)
- [int ppl_Pointset_Powerset_BD_Shape_int8_t_unconstrain_space_dimensions](#) (ppl_Pointset_Powerset_BD_Shape_int8_t_t ph, [ppl_dimension_type](#) ds[], size_t n)
- [int ppl_Pointset_Powerset_BD_Shape_int8_t_affine_image](#) (ppl_Pointset_Powerset_BD_Shape_int8_t_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- [int ppl_Pointset_Powerset_BD_Shape_int8_t_affine_preimage](#) (ppl_Pointset_Powerset_BD_Shape_int8_t_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- [int ppl_Pointset_Powerset_BD_Shape_int8_t_bounded_affine_image](#) (ppl_Pointset_Powerset_BD_Shape_int8_t_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- [int ppl_Pointset_Powerset_BD_Shape_int8_t_bounded_affine_preimage](#) (ppl_Pointset_Powerset_BD_Shape_int8_t_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- [int ppl_Pointset_Powerset_BD_Shape_int8_t_generalized_affine_image](#) (ppl_Pointset_Powerset_BD_Shape_int8_t_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- [int ppl_Pointset_Powerset_BD_Shape_int8_t_generalized_affine_preimage](#) (ppl_Pointset_Powerset_BD_Shape_int8_t_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)

- `int ppl_Pointset_Powerset_BD_Shape_int8_t_generalized_affine_image_lhs_rhs` (`ppl_Pointset_Powerset_BD_Shape_int8_t_t` ph, `ppl_const_Linear_Expression_t` lhs, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` rhs)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_generalized_affine_preimage_lhs_rhs` (`ppl_Pointset_Powerset_BD_Shape_int8_t_t` ph, `ppl_const_Linear_Expression_t` lhs, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` rhs)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_add_space_dimensions_and_embed` (`ppl_Pointset_Powerset_BD_Shape_int8_t_t` ph, `ppl_dimension_type` d)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_add_space_dimensions_and_project` (`ppl_Pointset_Powerset_BD_Shape_int8_t_t` ph, `ppl_dimension_type` d)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_remove_space_dimensions` (`ppl_Pointset_Powerset_BD_Shape_int8_t_t` ph, `ppl_dimension_type` ds[], `size_t` n)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_remove_higher_space_dimensions` (`ppl_Pointset_Powerset_BD_Shape_int8_t_t` ph, `ppl_dimension_type` d)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_expand_space_dimension` (`ppl_Pointset_Powerset_BD_Shape_int8_t_t` ph, `ppl_dimension_type` d, `ppl_dimension_type` m)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_fold_space_dimensions` (`ppl_Pointset_Powerset_BD_Shape_int8_t_t` ph, `ppl_dimension_type` ds[], `size_t` n, `ppl_dimension_type` d)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_map_space_dimensions` (`ppl_Pointset_Powerset_BD_Shape_int8_t_t` ph, `ppl_dimension_type` maps[], `size_t` n)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_drop_some_non_integer_points` (`ppl_Pointset_Powerset_BD_Shape_int8_t_t` ph, `int` complexity)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_drop_some_non_integer_points_2` (`ppl_Pointset_Powerset_BD_Shape_int8_t_t` ph, `ppl_dimension_type` ds[], `size_t` n, `int` complexity)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_external_memory_in_bytes` (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_t` ps, `size_t` *sz)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_total_memory_in_bytes` (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_t` ps, `size_t` *sz)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_size` (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_t` ps, `size_t` *sz)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_add_disjunct` (`ppl_Pointset_Powerset_BD_Shape_int8_t_t` ps, `ppl_const_BD_Shape_int8_t_t` d)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_drop_disjunct` (`ppl_Pointset_Powerset_BD_Shape_int8_t_t` ps, `ppl_const_Pointset_Powerset_BD_Shape_int8_t_iterator_t` cit, `ppl_Pointset_Powerset_BD_Shape_int8_t_iterator_t` it)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_drop_disjuncts` (`ppl_Pointset_Powerset_BD_Shape_int8_t_t` ps, `ppl_const_Pointset_Powerset_BD_Shape_int8_t_iterator_t` first, `ppl_const_Pointset_Powerset_BD_Shape_int8_t_iterator_t` last)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_BHZ03_H79_BHMZ05_widening_assign` (`ppl_Pointset_Powerset_BD_Shape_int8_t_t` x, `ppl_const_Pointset_Powerset_BD_Shape_int8_t_t` y)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_BHZ03_H79_H79_widening_assign` (`ppl_Pointset_Powerset_BD_Shape_int8_t_t` x, `ppl_const_Pointset_Powerset_BD_Shape_int8_t_t` y)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_BGP99_BHMZ05_extrapolation_assign` (`ppl_Pointset_Powerset_BD_Shape_int8_t_t` x, `ppl_const_Pointset_Powerset_BD_Shape_int8_t_t` y, `int` disjuncts)
- `int ppl_Pointset_Powerset_BD_Shape_int8_t_BGP99_H79_extrapolation_assign` (`ppl_Pointset_Powerset_BD_Shape_int8_t_t` x, `ppl_const_Pointset_Powerset_BD_Shape_int8_t_t` y, `int` disjuncts)

10.71.1 Detailed Description

Types and functions for `ppl_Pointset_Powerset_BD_Shape_int8_t_tag`.

10.71.2 Friends And Related Function Documentation

- 10.71.2.1** `int ppl_delete_Pointset_Powerset_BD_Shape_int8_t (ppl_const_Pointset_Powerset_BD_Shape_int8_t_t ph)` [**related**]
- 10.71.2.2** `int ppl_new_Pointset_Powerset_BD_Shape_int8_t_from_BD_Shape_int8_t (ppl_Pointset_Powerset_BD_Shape_int8_t_t * pph, ppl_const_BD_Shape_int8_t_t ph)` [**related**]
- 10.71.2.3** `int ppl_new_Pointset_Powerset_BD_Shape_int8_t_from_BD_Shape_int8_t_with_complexity (ppl_Pointset_Powerset_BD_Shape_int8_t_t * pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)` [**related**]
- 10.71.2.4** `int ppl_new_Pointset_Powerset_BD_Shape_int8_t_from_Congruence_System (ppl_Pointset_Powerset_BD_Shape_int8_t_t * pph, ppl_const_Congruence_System_t cs)` [**related**]
- 10.71.2.5** `int ppl_new_Pointset_Powerset_BD_Shape_int8_t_from_Constraint_System (ppl_Pointset_Powerset_BD_Shape_int8_t_t * pph, ppl_const_Constraint_System_t cs)` [**related**]
- 10.71.2.6** `int ppl_new_Pointset_Powerset_BD_Shape_int8_t_from_Pointset_Powerset_BD_Shape_int8_t (ppl_Pointset_Powerset_BD_Shape_int8_t_t * pph, ppl_const_Pointset_Powerset_BD_Shape_int8_t_t ph)` [**related**]
- 10.71.2.7** `int ppl_new_Pointset_Powerset_BD_Shape_int8_t_from_Pointset_Powerset_BD_Shape_int8_t_with_complexity (ppl_Pointset_Powerset_BD_Shape_int8_t_t * pph, ppl_const_Pointset_Powerset_BD_Shape_int8_t_t ph, int complexity)` [**related**]
- 10.71.2.8** `int ppl_new_Pointset_Powerset_BD_Shape_int8_t_from_space_dimension (ppl_Pointset_Powerset_BD_Shape_int8_t_t * pph, ppl_dimension_type d, int empty)` [**related**]

- 10.71.2.9** `int ppl_Pointset_Powerset_BD_Shape_int8_t_add_congruence`
 (`ppl_Pointset_Powerset_BD_Shape_int8_t_t` *ph*, `ppl_const_Congruence_t` *c*)
 [`related`]
- 10.71.2.10** `int ppl_Pointset_Powerset_BD_Shape_int8_t_add_congruences`
 (`ppl_Pointset_Powerset_BD_Shape_int8_t_t` *ph*, `ppl_const_Congruence_System_t` *cs*)
 [`related`]
- 10.71.2.11** `int ppl_Pointset_Powerset_BD_Shape_int8_t_add_constraint`
 (`ppl_Pointset_Powerset_BD_Shape_int8_t_t` *ph*, `ppl_const_Constraint_t` *c*)
 [`related`]
- 10.71.2.12** `int ppl_Pointset_Powerset_BD_Shape_int8_t_add_constraints`
 (`ppl_Pointset_Powerset_BD_Shape_int8_t_t` *ph*, `ppl_const_Constraint_System_t` *cs*)
 [`related`]
- 10.71.2.13** `int ppl_Pointset_Powerset_BD_Shape_int8_t_add_disjunct` (`ppl_Pointset_Powerset_BD_Shape_int8_t_t` *ps*, `ppl_const_BD_Shape_int8_t_t` *d*)
 [`related`]
- 10.71.2.14** `int ppl_Pointset_Powerset_BD_Shape_int8_t_add_space_dimensions_and_embed`
 (`ppl_Pointset_Powerset_BD_Shape_int8_t_t` *ph*, `ppl_dimension_type` *d*) [`related`]
- 10.71.2.15** `int ppl_Pointset_Powerset_BD_Shape_int8_t_add_space_dimensions_and_project`
 (`ppl_Pointset_Powerset_BD_Shape_int8_t_t` *ph*, `ppl_dimension_type` *d*) [`related`]
- 10.71.2.16** `int ppl_Pointset_Powerset_BD_Shape_int8_t_affine_dimension`
 (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_t` *ph*, `ppl_dimension_type` *m*)
 [`related`]

- 10.71.2.17 `int ppl_Pointset_Powerset_BD_Shape_int8_t affine_image (ppl_Pointset_Powerset_BD_Shape_int8_t_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.71.2.18 `int ppl_Pointset_Powerset_BD_Shape_int8_t affine_preimage (ppl_Pointset_Powerset_BD_Shape_int8_t_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.71.2.19 `int ppl_Pointset_Powerset_BD_Shape_int8_t BGP99_BHMZ05_-extrapolation_assign (ppl_Pointset_Powerset_BD_Shape_int8_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int8_t_t y, int disjuncts)` [`related`]
- 10.71.2.20 `int ppl_Pointset_Powerset_BD_Shape_int8_t BGP99_H79_-extrapolation_assign (ppl_Pointset_Powerset_BD_Shape_int8_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int8_t_t y, int disjuncts)` [`related`]
- 10.71.2.21 `int ppl_Pointset_Powerset_BD_Shape_int8_t BHZ03_H79_BHMZ05_-widening_assign (ppl_Pointset_Powerset_BD_Shape_int8_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int8_t_t y)` [`related`]
- 10.71.2.22 `int ppl_Pointset_Powerset_BD_Shape_int8_t BHZ03_H79_H79_-widening_assign (ppl_Pointset_Powerset_BD_Shape_int8_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int8_t_t y)` [`related`]
- 10.71.2.23 `int ppl_Pointset_Powerset_BD_Shape_int8_t bounded_affine_image (ppl_Pointset_Powerset_BD_Shape_int8_t_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [`related`]
- 10.71.2.24 `int ppl_Pointset_Powerset_BD_Shape_int8_t bounded_affine_preimage (ppl_Pointset_Powerset_BD_Shape_int8_t_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [`related`]

- 10.71.2.25** `int ppl_Pointset_Powerset_BD_Shape_int8_t_bounds_from_above`
 (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_t ph`, `ppl_const_Linear_Expression_t le`) [`related`]
- 10.71.2.26** `int ppl_Pointset_Powerset_BD_Shape_int8_t_bounds_from_below`
 (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_t ph`, `ppl_const_Linear_Expression_t le`) [`related`]
- 10.71.2.27** `int ppl_Pointset_Powerset_BD_Shape_int8_t_concatenate_assign` (`ppl_Pointset_Powerset_BD_Shape_int8_t_t x`, `ppl_const_Pointset_Powerset_BD_Shape_int8_t_t y`) [`related`]
- 10.71.2.28** `int ppl_Pointset_Powerset_BD_Shape_int8_t_constrains` (`ppl_Pointset_Powerset_BD_Shape_int8_t_t ph`, `ppl_dimension_type var`) [`related`]
- 10.71.2.29** `int ppl_Pointset_Powerset_BD_Shape_int8_t_contains_integer_point`
 (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_t ph`) [`related`]
- 10.71.2.30** `int ppl_Pointset_Powerset_BD_Shape_int8_t_contains_Pointset_Powerset_BD_Shape_int8_t` (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_t x`, `ppl_const_Pointset_Powerset_BD_Shape_int8_t_t y`) [`related`]
- 10.71.2.31** `int ppl_Pointset_Powerset_BD_Shape_int8_t_difference_assign` (`ppl_Pointset_Powerset_BD_Shape_int8_t_t x`, `ppl_const_Pointset_Powerset_BD_Shape_int8_t_t y`) [`related`]
- 10.71.2.32** `int ppl_Pointset_Powerset_BD_Shape_int8_t_drop_disjunct` (`ppl_Pointset_Powerset_BD_Shape_int8_t_t ps`, `ppl_const_Pointset_Powerset_BD_Shape_int8_t_iterator_t cit`, `ppl_Pointset_Powerset_BD_Shape_int8_t_iterator_t it`) [`related`]

- 10.71.2.33 `int ppl_Pointset_Powerset_BD_Shape_int8_t_drop_disjuncts (ppl_Pointset_Powerset_BD_Shape_int8_t_t ps, ppl_const_Pointset_Powerset_BD_Shape_int8_t_iterator_t first, ppl_const_Pointset_Powerset_BD_Shape_int8_t_iterator_t last)` [**related**]
- 10.71.2.34 `int ppl_Pointset_Powerset_BD_Shape_int8_t_drop_some_non_integer_points (ppl_Pointset_Powerset_BD_Shape_int8_t_t ph, int complexity)` [**related**]
- 10.71.2.35 `int ppl_Pointset_Powerset_BD_Shape_int8_t_drop_some_non_integer_points_2 (ppl_Pointset_Powerset_BD_Shape_int8_t_t ph, ppl_dimension_type ds[], size_t n, int complexity)` [**related**]
- 10.71.2.36 `int ppl_Pointset_Powerset_BD_Shape_int8_t_equals_Pointset_Powerset_BD_Shape_int8_t (ppl_const_Pointset_Powerset_BD_Shape_int8_t_t x, ppl_const_Pointset_Powerset_BD_Shape_int8_t_t y)` [**related**]
- 10.71.2.37 `int ppl_Pointset_Powerset_BD_Shape_int8_t_expand_space_dimension (ppl_Pointset_Powerset_BD_Shape_int8_t_t ph, ppl_dimension_type d, ppl_dimension_type m)` [**related**]
- 10.71.2.38 `int ppl_Pointset_Powerset_BD_Shape_int8_t_external_memory_in_bytes (ppl_const_Pointset_Powerset_BD_Shape_int8_t_t ps, size_t * sz)` [**related**]
- 10.71.2.39 `int ppl_Pointset_Powerset_BD_Shape_int8_t_fold_space_dimensions (ppl_Pointset_Powerset_BD_Shape_int8_t_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [**related**]
- 10.71.2.40 `int ppl_Pointset_Powerset_BD_Shape_int8_t_generalized_affine_image (ppl_Pointset_Powerset_BD_Shape_int8_t_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]

- 10.71.2.41 `int ppl_Pointset_Powerset_BD_Shape_int8_t_generalized_affine_image_lhs_rhs`
 (`ppl_Pointset_Powerset_BD_Shape_int8_t_t ph`, `ppl_const_Linear_Expression_t lhs`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
 [related]
- 10.71.2.42 `int ppl_Pointset_Powerset_BD_Shape_int8_t_generalized_affine_preimage`
 (`ppl_Pointset_Powerset_BD_Shape_int8_t_t ph`, `ppl_dimension_type var`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [related]
- 10.71.2.43 `int ppl_Pointset_Powerset_BD_Shape_int8_t_generalized_affine_preimage_lhs_rhs`
 (`ppl_Pointset_Powerset_BD_Shape_int8_t_t ph`, `ppl_const_Linear_Expression_t lhs`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
 [related]
- 10.71.2.44 `int ppl_Pointset_Powerset_BD_Shape_int8_t_geometrically_covers_Pointset_-`
`Powerset_BD_Shape_int8_t` (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_t x`,
`ppl_const_Pointset_Powerset_BD_Shape_int8_t_t y`) [related]
- 10.71.2.45 `int ppl_Pointset_Powerset_BD_Shape_int8_t_geometrically_equals_Pointset_-`
`Powerset_BD_Shape_int8_t` (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_t x`,
`ppl_const_Pointset_Powerset_BD_Shape_int8_t_t y`) [related]
- 10.71.2.46 `int ppl_Pointset_Powerset_BD_Shape_int8_t_intersection_assign` (`ppl_Pointset_-`
`Powerset_BD_Shape_int8_t_t x`, `ppl_const_Pointset_Powerset_BD_Shape_int8_t_t y`)
 [related]
- 10.71.2.47 `int ppl_Pointset_Powerset_BD_Shape_int8_t_is_bounded`
 (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_t ph`) [related]
- 10.71.2.48 `int ppl_Pointset_Powerset_BD_Shape_int8_t_is_discrete`
 (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_t ph`) [related]

- 10.71.2.49** `int ppl_Pointset_Powerset_BD_Shape_int8_t_is_disjoint_from_Pointset_Powerset_BD_Shape_int8_t (ppl_const_Pointset_Powerset_BD_Shape_int8_t x, ppl_const_Pointset_Powerset_BD_Shape_int8_t y) [related]`
- 10.71.2.50** `int ppl_Pointset_Powerset_BD_Shape_int8_t_is_empty (ppl_const_Pointset_Powerset_BD_Shape_int8_t ph) [related]`
- 10.71.2.51** `int ppl_Pointset_Powerset_BD_Shape_int8_t_is_topologically_closed (ppl_const_Pointset_Powerset_BD_Shape_int8_t ph) [related]`
- 10.71.2.52** `int ppl_Pointset_Powerset_BD_Shape_int8_t_is_universe (ppl_const_Pointset_Powerset_BD_Shape_int8_t ph) [related]`
- 10.71.2.53** `int ppl_Pointset_Powerset_BD_Shape_int8_t_map_space_dimensions (ppl_Pointset_Powerset_BD_Shape_int8_t ph, ppl_dimension_type maps[], size_t n) [related]`
- 10.71.2.54** `int ppl_Pointset_Powerset_BD_Shape_int8_t_maximize (ppl_const_Pointset_Powerset_BD_Shape_int8_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum) [related]`
- 10.71.2.55** `int ppl_Pointset_Powerset_BD_Shape_int8_t_maximize_with_point (ppl_const_Pointset_Powerset_BD_Shape_int8_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point) [related]`
- 10.71.2.56** `int ppl_Pointset_Powerset_BD_Shape_int8_t_minimize (ppl_const_Pointset_Powerset_BD_Shape_int8_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum) [related]`

- 10.71.2.57** `int ppl_Pointset_Powerset_BD_Shape_int8_t_minimize_with_point`
 (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int * poptimum`, `ppl_Generator_t point`) [`related`]
- 10.71.2.58** `int ppl_Pointset_Powerset_BD_Shape_int8_t_OK` (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_t ph`) [`related`]
- 10.71.2.59** `int ppl_Pointset_Powerset_BD_Shape_int8_t_omega_reduce`
 (`ppl_Pointset_Powerset_BD_Shape_int8_t_t ph`) [`related`]
- 10.71.2.60** `int ppl_Pointset_Powerset_BD_Shape_int8_t_pairwise_reduce`
 (`ppl_Pointset_Powerset_BD_Shape_int8_t_t ph`) [`related`]
- 10.71.2.61** `int ppl_Pointset_Powerset_BD_Shape_int8_t_refine_with_congruence`
 (`ppl_Pointset_Powerset_BD_Shape_int8_t_t ph`, `ppl_const_Congruence_t c`)
 [`related`]
- 10.71.2.62** `int ppl_Pointset_Powerset_BD_Shape_int8_t_refine_with_congruences`
 (`ppl_Pointset_Powerset_BD_Shape_int8_t_t ph`, `ppl_const_Congruence_System_t cs`)
 [`related`]
- 10.71.2.63** `int ppl_Pointset_Powerset_BD_Shape_int8_t_refine_with_constraint`
 (`ppl_Pointset_Powerset_BD_Shape_int8_t_t ph`, `ppl_const_Constraint_t c`)
 [`related`]
- 10.71.2.64** `int ppl_Pointset_Powerset_BD_Shape_int8_t_refine_with_constraints`
 (`ppl_Pointset_Powerset_BD_Shape_int8_t_t ph`, `ppl_const_Constraint_System_t cs`)
 [`related`]

- 10.71.2.65** `int ppl_Pointset_Powerset_BD_Shape_int8_t_relation_with_Congruence`
 (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_t ph`, `ppl_const_Congruence_t c`)
 [`related`]
- 10.71.2.66** `int ppl_Pointset_Powerset_BD_Shape_int8_t_relation_with_Constraint`
 (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_t ph`, `ppl_const_Constraint_t c`)
 [`related`]
- 10.71.2.67** `int ppl_Pointset_Powerset_BD_Shape_int8_t_relation_with_Generator`
 (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_t ph`, `ppl_const_Generator_t c`)
 [`related`]
- 10.71.2.68** `int ppl_Pointset_Powerset_BD_Shape_int8_t_remove_higher_space_dimensions`
 (`ppl_Pointset_Powerset_BD_Shape_int8_t_t ph`, `ppl_dimension_type d`) [`related`]
- 10.71.2.69** `int ppl_Pointset_Powerset_BD_Shape_int8_t_remove_space_dimensions`
 (`ppl_Pointset_Powerset_BD_Shape_int8_t_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`)
 [`related`]
- 10.71.2.70** `int ppl_Pointset_Powerset_BD_Shape_int8_t_simplify_using_-`
`context_assign` (`ppl_Pointset_Powerset_BD_Shape_int8_t_t x`,
`ppl_const_Pointset_Powerset_BD_Shape_int8_t_t y`) [`related`]
- 10.71.2.71** `int ppl_Pointset_Powerset_BD_Shape_int8_t_size` (`ppl_const_Pointset_Powerset_BD_-`
`Shape_int8_t_t ps`, `size_t * sz`) [`related`]
- 10.71.2.72** `int ppl_Pointset_Powerset_BD_Shape_int8_t_space_dimension`
 (`ppl_const_Pointset_Powerset_BD_Shape_int8_t_t ph`, `ppl_dimension_type * m`)
 [`related`]

- 10.71.2.73** `int ppl_Pointset_Powerset_BD_Shape_int8_t_strictly_contains_Pointset_Powerset_BD_Shape_int8_t (ppl_const_Pointset_Powerset_BD_Shape_int8_t tx, ppl_const_Pointset_Powerset_BD_Shape_int8_t ty)` [**related**]
- 10.71.2.74** `int ppl_Pointset_Powerset_BD_Shape_int8_t_time_elapse_assign (ppl_Pointset_Powerset_BD_Shape_int8_t tx, ppl_const_Pointset_Powerset_BD_Shape_int8_t ty)` [**related**]
- 10.71.2.75** `int ppl_Pointset_Powerset_BD_Shape_int8_t_topological_closure_assign (ppl_Pointset_Powerset_BD_Shape_int8_t ph)` [**related**]
- 10.71.2.76** `int ppl_Pointset_Powerset_BD_Shape_int8_t_total_memory_in_bytes (ppl_const_Pointset_Powerset_BD_Shape_int8_t ps, size_t * sz)` [**related**]
- 10.71.2.77** `int ppl_Pointset_Powerset_BD_Shape_int8_t_unconstrain_space_dimension (ppl_Pointset_Powerset_BD_Shape_int8_t ph, ppl_dimension_type var)` [**related**]
- 10.71.2.78** `int ppl_Pointset_Powerset_BD_Shape_int8_t_unconstrain_space_dimensions (ppl_Pointset_Powerset_BD_Shape_int8_t ph, ppl_dimension_type ds[], size_t n)` [**related**]
- 10.71.2.79** `int ppl_Pointset_Powerset_BD_Shape_int8_t_upper_bound_assign (ppl_Pointset_Powerset_BD_Shape_int8_t tx, ppl_const_Pointset_Powerset_BD_Shape_int8_t ty)` [**related**]
- 10.71.2.80** `int ppl_Pointset_Powerset_BD_Shape_int8_t_upper_bound_assign_if_exact (ppl_Pointset_Powerset_BD_Shape_int8_t tx, ppl_const_Pointset_Powerset_BD_Shape_int8_t ty)` [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.72 `ppl_Pointset_Powerset_BD_Shape_long_double_const_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a const `ppl_Pointset_Powerset_BD_Shape_long_double_tag`.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_BD_Shape_long_double_const_iterator` (`ppl_Pointset_Powerset_BD_Shape_long_double_const_iterator_t *pit`)
- `int ppl_new_Pointset_Powerset_BD_Shape_long_double_const_iterator_from_const_iterator` (`ppl_Pointset_Powerset_BD_Shape_long_double_const_iterator_t *px`, `ppl_const_Pointset_Powerset_BD_Shape_long_double_const_iterator_t y`)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_const_iterator_begin` (`ppl_const_Pointset_Powerset_BD_Shape_long_double_t ps`, `ppl_Pointset_Powerset_BD_Shape_long_double_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_const_iterator_end` (`ppl_const_Pointset_Powerset_BD_Shape_long_double_t ps`, `ppl_Pointset_Powerset_BD_Shape_long_double_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_const_iterator_equal_test` (`ppl_const_Pointset_Powerset_BD_Shape_long_double_const_iterator_t x`, `ppl_const_Pointset_Powerset_BD_Shape_long_double_const_iterator_t y`)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_const_iterator_increment` (`ppl_Pointset_Powerset_BD_Shape_long_double_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_const_iterator_decrement` (`ppl_Pointset_Powerset_BD_Shape_long_double_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_const_iterator_dereference` (`ppl_const_Pointset_Powerset_BD_Shape_long_double_const_iterator_t ps`, `ppl_const_BD_Shape_long_double_t *d`)
- `int ppl_delete_Pointset_Powerset_BD_Shape_long_double_const_iterator` (`ppl_const_Pointset_Powerset_BD_Shape_long_double_const_iterator_t psit`)

10.72.1 Detailed Description

Types and functions for iterating on the disjuncts of a const `ppl_Pointset_Powerset_BD_Shape_long_double_tag`.

10.72.2 Friends And Related Function Documentation

- 10.72.2.1** `int ppl_delete_Pointset_Powerset_BD_Shape_long_double_const_iterator`
 (`ppl_const_Pointset_Powerset_BD_Shape_long_double_const_iterator_t psit`)
 [related]

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- 10.72.2.2** `int ppl_new_Pointset_Powerset_BD_Shape_long_double_const_iterator`
(`ppl_Pointset_Powerset_BD_Shape_long_double_const_iterator_t * pit`) [**related**]
- 10.72.2.3** `int ppl_new_Pointset_Powerset_BD_Shape_long_double_const_iterator_from_const_iterator`
(`ppl_Pointset_Powerset_BD_Shape_long_double_const_iterator_t * px`,
`ppl_const_Pointset_Powerset_BD_Shape_long_double_const_iterator_ty`) [**related**]
- 10.72.2.4** `int ppl_Pointset_Powerset_BD_Shape_long_double_const_iterator_begin`
(`ppl_const_Pointset_Powerset_BD_Shape_long_double_t ps`,
`ppl_Pointset_Powerset_BD_Shape_long_double_const_iterator_t psit`) [**related**]
- 10.72.2.5** `int ppl_Pointset_Powerset_BD_Shape_long_double_const_iterator_decrement`
(`ppl_Pointset_Powerset_BD_Shape_long_double_const_iterator_t psit`) [**related**]
- 10.72.2.6** `int ppl_Pointset_Powerset_BD_Shape_long_double_const_iterator_dereference`
(`ppl_const_Pointset_Powerset_BD_Shape_long_double_const_iterator_t ps`,
`ppl_const_BD_Shape_long_double_t * d`) [**related**]
- 10.72.2.7** `int ppl_Pointset_Powerset_BD_Shape_long_double_const_iterator_end`
(`ppl_const_Pointset_Powerset_BD_Shape_long_double_t ps`,
`ppl_Pointset_Powerset_BD_Shape_long_double_const_iterator_t psit`) [**related**]
- 10.72.2.8** `int ppl_Pointset_Powerset_BD_Shape_long_double_const_iterator_equal_test`
(`ppl_const_Pointset_Powerset_BD_Shape_long_double_const_iterator_t x`,
`ppl_const_Pointset_Powerset_BD_Shape_long_double_const_iterator_ty`) [**related**]
- 10.72.2.9** `int ppl_Pointset_Powerset_BD_Shape_long_double_const_iterator_increment`
(`ppl_Pointset_Powerset_BD_Shape_long_double_const_iterator_t psit`) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.73 `ppl_Pointset_Powerset_BD_Shape_long_double_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a `ppl_Pointset_Powerset_BD_Shape_long_double_iterator_tag`.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_BD_Shape_long_double_iterator` (`ppl_Pointset_Powerset_BD_Shape_long_double_iterator_t *pit`)
- `int ppl_new_Pointset_Powerset_BD_Shape_long_double_iterator_from_iterator` (`ppl_Pointset_Powerset_BD_Shape_long_double_iterator_t *px`, `ppl_const_Pointset_Powerset_BD_Shape_long_double_iterator_t y`)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_iterator_begin` (`ppl_Pointset_Powerset_BD_Shape_long_double_t ps`, `ppl_Pointset_Powerset_BD_Shape_long_double_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_iterator_end` (`ppl_Pointset_Powerset_BD_Shape_long_double_t ps`, `ppl_Pointset_Powerset_BD_Shape_long_double_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_iterator_equal_test` (`ppl_const_Pointset_Powerset_BD_Shape_long_double_iterator_t x`, `ppl_const_Pointset_Powerset_BD_Shape_long_double_iterator_t y`)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_iterator_increment` (`ppl_Pointset_Powerset_BD_Shape_long_double_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_iterator_decrement` (`ppl_Pointset_Powerset_BD_Shape_long_double_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_iterator_dereference` (`ppl_const_Pointset_Powerset_BD_Shape_long_double_iterator_t ps`, `ppl_const_BD_Shape_long_double_t *d`)
- `int ppl_delete_Pointset_Powerset_BD_Shape_long_double_iterator` (`ppl_const_Pointset_Powerset_BD_Shape_long_double_iterator_t psit`)

10.73.1 Detailed Description

Types and functions for iterating on the disjuncts of a `ppl_Pointset_Powerset_BD_Shape_long_double_iterator_tag`.

10.73.2 Friends And Related Function Documentation

10.73.2.1 `int ppl_delete_Pointset_Powerset_BD_Shape_long_double_iterator`
(`ppl_const_Pointset_Powerset_BD_Shape_long_double_iterator_t psit`) [**related**]

10.73.2.2 `int ppl_new_Pointset_Powerset_BD_Shape_long_double_iterator`
(`ppl_Pointset_Powerset_BD_Shape_long_double_iterator_t *pit`) [**related**]

- 10.73.2.3 `int ppl_new_Pointset_Powerset_BD_Shape_long_double_iterator_from_iterator`
 (`ppl_Pointset_Powerset_BD_Shape_long_double_iterator_t * px`,
`ppl_const_Pointset_Powerset_BD_Shape_long_double_iterator_t y`) [`related`]
- 10.73.2.4 `int ppl_Pointset_Powerset_BD_Shape_long_double_iterator_begin`
 (`ppl_Pointset_Powerset_BD_Shape_long_double_t ps`, `ppl_Pointset_Powerset_BD_Shape_long_double_iterator_t psit`) [`related`]
- 10.73.2.5 `int ppl_Pointset_Powerset_BD_Shape_long_double_iterator_decrement`
 (`ppl_Pointset_Powerset_BD_Shape_long_double_iterator_t psit`) [`related`]
- 10.73.2.6 `int ppl_Pointset_Powerset_BD_Shape_long_double_iterator_dereference`
 (`ppl_const_Pointset_Powerset_BD_Shape_long_double_iterator_t ps`,
`ppl_const_BD_Shape_long_double_t * d`) [`related`]
- 10.73.2.7 `int ppl_Pointset_Powerset_BD_Shape_long_double_iterator_end`
 (`ppl_Pointset_Powerset_BD_Shape_long_double_t ps`, `ppl_Pointset_Powerset_BD_Shape_long_double_iterator_t psit`) [`related`]
- 10.73.2.8 `int ppl_Pointset_Powerset_BD_Shape_long_double_iterator_equal_test`
 (`ppl_const_Pointset_Powerset_BD_Shape_long_double_iterator_t x`,
`ppl_const_Pointset_Powerset_BD_Shape_long_double_iterator_t y`) [`related`]
- 10.73.2.9 `int ppl_Pointset_Powerset_BD_Shape_long_double_iterator_increment`
 (`ppl_Pointset_Powerset_BD_Shape_long_double_iterator_t psit`) [`related`]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.74 `ppl_Pointset_Powerset_BD_Shape_long_double_tag` Interface Reference

Types and functions for [ppl_Pointset_Powerset_BD_Shape_long_double_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Pointset_Powerset_BD_Shape_long_double` (`ppl_const_Pointset_Powerset_BD_Shape_long_double_t` ph)
- `int ppl_new_Pointset_Powerset_BD_Shape_long_double_from_space_dimension` (`ppl_Pointset_Powerset_BD_Shape_long_double_t` *pph, `ppl_dimension_type` d, `int` empty)
- `int ppl_new_Pointset_Powerset_BD_Shape_long_double_from_Pointset_Powerset_BD_Shape_long_double` (`ppl_Pointset_Powerset_BD_Shape_long_double_t` *pph, `ppl_const_Pointset_Powerset_BD_Shape_long_double_t` ph)
- `int ppl_new_Pointset_Powerset_BD_Shape_long_double_from_BD_Shape_long_double` (`ppl_Pointset_Powerset_BD_Shape_long_double_t` *pph, `ppl_const_BD_Shape_long_double_t` ph)
- `int ppl_new_Pointset_Powerset_BD_Shape_long_double_from_Pointset_Powerset_BD_Shape_long_double_with_complexity` (`ppl_Pointset_Powerset_BD_Shape_long_double_t` *pph, `ppl_const_Pointset_Powerset_BD_Shape_long_double_t` ph, `int` complexity)
- `int ppl_new_Pointset_Powerset_BD_Shape_long_double_from_BD_Shape_long_double_with_complexity` (`ppl_Pointset_Powerset_BD_Shape_long_double_t` *pph, `ppl_const_BD_Shape_long_double_t` ph, `int` complexity)
- `int ppl_new_Pointset_Powerset_BD_Shape_long_double_from_Constraint_System` (`ppl_Pointset_Powerset_BD_Shape_long_double_t` *pph, `ppl_const_Constraint_System_t` cs)
- `int ppl_new_Pointset_Powerset_BD_Shape_long_double_from_Congruence_System` (`ppl_Pointset_Powerset_BD_Shape_long_double_t` *pph, `ppl_const_Congruence_System_t` cs)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_space_dimension` (`ppl_const_Pointset_Powerset_BD_Shape_long_double_t` ph, `ppl_dimension_type` *m)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_affine_dimension` (`ppl_const_Pointset_Powerset_BD_Shape_long_double_t` ph, `ppl_dimension_type` *m)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_relation_with_Constraint` (`ppl_const_Pointset_Powerset_BD_Shape_long_double_t` ph, `ppl_const_Constraint_t` c)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_relation_with_Generator` (`ppl_const_Pointset_Powerset_BD_Shape_long_double_t` ph, `ppl_const_Generator_t` c)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_relation_with_Congruence` (`ppl_const_Pointset_Powerset_BD_Shape_long_double_t` ph, `ppl_const_Congruence_t` c)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_is_empty` (`ppl_const_Pointset_Powerset_BD_Shape_long_double_t` ph)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_is_universe` (`ppl_const_Pointset_Powerset_BD_Shape_long_double_t` ph)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_is_bounded` (`ppl_const_Pointset_Powerset_BD_Shape_long_double_t` ph)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_contains_integer_point` (`ppl_const_Pointset_Powerset_BD_Shape_long_double_t` ph)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_is_topologically_closed` (`ppl_const_Pointset_Powerset_BD_Shape_long_double_t` ph)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_is_discrete` (`ppl_const_Pointset_Powerset_BD_Shape_long_double_t` ph)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_topological_closure_assign` (`ppl_Pointset_Powerset_BD_Shape_long_double_t` ph)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_pairwise_reduce` (`ppl_Pointset_Powerset_BD_Shape_long_double_t` ph)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_omega_reduce` (`ppl_Pointset_Powerset_BD_Shape_long_double_t` ph)

- int [ppl_Pointset_Powerset_BD_Shape_long_double_bounds_from_above](#) (ppl_const_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_bounds_from_below](#) (ppl_const_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_maximize](#) (ppl_const_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_minimize](#) (ppl_const_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_maximize_with_point](#) (ppl_const_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_minimize_with_point](#) (ppl_const_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_contains_Pointset_Powerset_BD_Shape_long_double](#) (ppl_const_Pointset_Powerset_BD_Shape_long_double_t x, ppl_const_Pointset_Powerset_BD_Shape_long_double_t y)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_strictly_contains_Pointset_Powerset_BD_Shape_long_double](#) (ppl_const_Pointset_Powerset_BD_Shape_long_double_t x, ppl_const_Pointset_Powerset_BD_Shape_long_double_t y)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_is_disjoint_from_Pointset_Powerset_BD_Shape_long_double](#) (ppl_const_Pointset_Powerset_BD_Shape_long_double_t x, ppl_const_Pointset_Powerset_BD_Shape_long_double_t y)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_geometrically_covers_Pointset_Powerset_BD_Shape_long_double](#) (ppl_const_Pointset_Powerset_BD_Shape_long_double_t x, ppl_const_Pointset_Powerset_BD_Shape_long_double_t y)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_geometrically_equals_Pointset_Powerset_BD_Shape_long_double](#) (ppl_const_Pointset_Powerset_BD_Shape_long_double_t x, ppl_const_Pointset_Powerset_BD_Shape_long_double_t y)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_equals_Pointset_Powerset_BD_Shape_long_double](#) (ppl_const_Pointset_Powerset_BD_Shape_long_double_t x, ppl_const_Pointset_Powerset_BD_Shape_long_double_t y)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_OK](#) (ppl_const_Pointset_Powerset_BD_Shape_long_double_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_add_constraint](#) (ppl_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_add_congruence](#) (ppl_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_add_constraints](#) (ppl_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_add_congruences](#) (ppl_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_refine_with_constraint](#) (ppl_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_refine_with_congruence](#) (ppl_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_refine_with_constraints](#) (ppl_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_refine_with_congruences](#) (ppl_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_const_Congruence_System_t cs)

- int [ppl_Pointset_Powerset_BD_Shape_long_double_intersection_assign](#) (ppl_Pointset_Powerset_-BD_Shape_long_double_t x, ppl_const_Pointset_Powerset_BD_Shape_long_double_t y)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_upper_bound_assign](#) (ppl_Pointset_-Powerset_BD_Shape_long_double_t x, ppl_const_Pointset_Powerset_BD_Shape_long_double_t y)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_difference_assign](#) (ppl_Pointset_Powerset_-BD_Shape_long_double_t x, ppl_const_Pointset_Powerset_BD_Shape_long_double_t y)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_concatenate_assign](#) (ppl_Pointset_Powerset_-BD_Shape_long_double_t x, ppl_const_Pointset_Powerset_BD_Shape_long_double_t y)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_time_elapse_assign](#) (ppl_Pointset_Powerset_-BD_Shape_long_double_t x, ppl_const_Pointset_Powerset_BD_Shape_long_double_t y)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_upper_bound_assign_if_exact](#) (ppl_Pointset_-Powerset_BD_Shape_long_double_t x, ppl_const_Pointset_Powerset_BD_Shape_long_double_t y)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_simplify_using_context_assign](#) (ppl_-Pointset_Powerset_BD_Shape_long_double_t x, ppl_const_Pointset_Powerset_BD_Shape_-long_double_t y)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_constrains](#) (ppl_Pointset_Powerset_BD_-Shape_long_double_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_unconstrain_space_dimension](#) (ppl_Pointset_-Powerset_BD_Shape_long_double_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_unconstrain_space_dimensions](#) (ppl_-Pointset_Powerset_BD_Shape_long_double_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_affine_image](#) (ppl_Pointset_Powerset_BD_-Shape_long_double_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_-Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_affine_preimage](#) (ppl_Pointset_Powerset_-BD_Shape_long_double_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_bounded_affine_image](#) (ppl_Pointset_-Powerset_BD_Shape_long_double_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_bounded_affine_preimage](#) (ppl_Pointset_-Powerset_BD_Shape_long_double_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_generalized_affine_image](#) (ppl_Pointset_-Powerset_BD_Shape_long_double_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_generalized_affine_preimage](#) (ppl_Pointset_-Powerset_BD_Shape_long_double_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_generalized_affine_image_lhs_rhs](#) (ppl_-Pointset_Powerset_BD_Shape_long_double_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_generalized_affine_preimage_lhs_rhs](#) (ppl_-Pointset_Powerset_BD_Shape_long_double_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_add_space_dimensions_and_embed](#) (ppl_-Pointset_Powerset_BD_Shape_long_double_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_add_space_dimensions_and_project](#) (ppl_-Pointset_Powerset_BD_Shape_long_double_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_BD_Shape_long_double_remove_space_dimensions](#) (ppl_Pointset_-Powerset_BD_Shape_long_double_t ph, [ppl_dimension_type](#) ds[], size_t n)

- `int ppl_Pointset_Powerset_BD_Shape_long_double_remove_higher_space_dimensions` (`ppl_Pointset_Powerset_BD_Shape_long_double_t` *ph*, `ppl_dimension_type` *d*)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_expand_space_dimension` (`ppl_Pointset_Powerset_BD_Shape_long_double_t` *ph*, `ppl_dimension_type` *d*, `ppl_dimension_type` *m*)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_fold_space_dimensions` (`ppl_Pointset_Powerset_BD_Shape_long_double_t` *ph*, `ppl_dimension_type` *ds*[], `size_t` *n*, `ppl_dimension_type` *d*)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_map_space_dimensions` (`ppl_Pointset_Powerset_BD_Shape_long_double_t` *ph*, `ppl_dimension_type` *maps*[], `size_t` *n*)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_drop_some_non_integer_points` (`ppl_Pointset_Powerset_BD_Shape_long_double_t` *ph*, `int` *complexity*)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_drop_some_non_integer_points_2` (`ppl_Pointset_Powerset_BD_Shape_long_double_t` *ph*, `ppl_dimension_type` *ds*[], `size_t` *n*, `int` *complexity*)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_external_memory_in_bytes` (`ppl_const_Pointset_Powerset_BD_Shape_long_double_t` *ps*, `size_t` **sz*)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_total_memory_in_bytes` (`ppl_const_Pointset_Powerset_BD_Shape_long_double_t` *ps*, `size_t` **sz*)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_size` (`ppl_const_Pointset_Powerset_BD_Shape_long_double_t` *ps*, `size_t` **sz*)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_add_disjunct` (`ppl_Pointset_Powerset_BD_Shape_long_double_t` *ps*, `ppl_const_BD_Shape_long_double_t` *d*)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_drop_disjunct` (`ppl_Pointset_Powerset_BD_Shape_long_double_t` *ps*, `ppl_const_Pointset_Powerset_BD_Shape_long_double_iterator_t` *cit*, `ppl_Pointset_Powerset_BD_Shape_long_double_iterator_t` *it*)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_drop_disjuncts` (`ppl_Pointset_Powerset_BD_Shape_long_double_t` *ps*, `ppl_const_Pointset_Powerset_BD_Shape_long_double_iterator_t` *first*, `ppl_const_Pointset_Powerset_BD_Shape_long_double_iterator_t` *last*)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_BHZ03_H79_BHMZ05_widening_assign` (`ppl_Pointset_Powerset_BD_Shape_long_double_t` *x*, `ppl_const_Pointset_Powerset_BD_Shape_long_double_t` *y*)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_BHZ03_H79_H79_widening_assign` (`ppl_Pointset_Powerset_BD_Shape_long_double_t` *x*, `ppl_const_Pointset_Powerset_BD_Shape_long_double_t` *y*)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_BGP99_BHMZ05_extrapolation_assign` (`ppl_Pointset_Powerset_BD_Shape_long_double_t` *x*, `ppl_const_Pointset_Powerset_BD_Shape_long_double_t` *y*, `int` *disjuncts*)
- `int ppl_Pointset_Powerset_BD_Shape_long_double_BGP99_H79_extrapolation_assign` (`ppl_Pointset_Powerset_BD_Shape_long_double_t` *x*, `ppl_const_Pointset_Powerset_BD_Shape_long_double_t` *y*, `int` *disjuncts*)

10.74.1 Detailed Description

Types and functions for `ppl_Pointset_Powerset_BD_Shape_long_double_tag`.

10.74.2 Friends And Related Function Documentation

10.74.2.1 `int ppl_delete_Pointset_Powerset_BD_Shape_long_double` (`ppl_const_Pointset_Powerset_BD_Shape_long_double_t` *ph*) [**related**]

- 10.74.2.2 `int ppl_new_Pointset_Powerset_BD_Shape_long_double_from_BD_Shape_long_double (ppl_Pointset_Powerset_BD_Shape_long_double_t * pph, ppl_const_BD_Shape_long_double_t ph)` [*related*]
- 10.74.2.3 `int ppl_new_Pointset_Powerset_BD_Shape_long_double_from_BD_Shape_long_double_with_complexity (ppl_Pointset_Powerset_BD_Shape_long_double_t * pph, ppl_const_BD_Shape_long_double_t ph, int complexity)` [*related*]
- 10.74.2.4 `int ppl_new_Pointset_Powerset_BD_Shape_long_double_from_Congruence_System (ppl_Pointset_Powerset_BD_Shape_long_double_t * pph, ppl_const_Congruence_System_t cs)` [*related*]
- 10.74.2.5 `int ppl_new_Pointset_Powerset_BD_Shape_long_double_from_Constraint_System (ppl_Pointset_Powerset_BD_Shape_long_double_t * pph, ppl_const_Constraint_System_t cs)` [*related*]
- 10.74.2.6 `int ppl_new_Pointset_Powerset_BD_Shape_long_double_from_Pointset_Powerset_BD_Shape_long_double (ppl_Pointset_Powerset_BD_Shape_long_double_t * pph, ppl_const_Pointset_Powerset_BD_Shape_long_double_t ph)` [*related*]
- 10.74.2.7 `int ppl_new_Pointset_Powerset_BD_Shape_long_double_from_Pointset_Powerset_BD_Shape_long_double_with_complexity (ppl_Pointset_Powerset_BD_Shape_long_double_t * pph, ppl_const_Pointset_Powerset_BD_Shape_long_double_t ph, int complexity)` [*related*]
- 10.74.2.8 `int ppl_new_Pointset_Powerset_BD_Shape_long_double_from_space_dimension (ppl_Pointset_Powerset_BD_Shape_long_double_t * pph, ppl_dimension_type d, int empty)` [*related*]
- 10.74.2.9 `int ppl_Pointset_Powerset_BD_Shape_long_double_add_congruence (ppl_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_const_Congruence_t c)` [*related*]

- 10.74.2.10 `int ppl_Pointset_Powerset_BD_Shape_long_double_add_congruences (ppl_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_const_Congruence_System_t cs)`
[related]
- 10.74.2.11 `int ppl_Pointset_Powerset_BD_Shape_long_double_add_constraint (ppl_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_const_Constraint_t c)`
[related]
- 10.74.2.12 `int ppl_Pointset_Powerset_BD_Shape_long_double_add_constraints (ppl_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_const_Constraint_System_t cs)` [related]
- 10.74.2.13 `int ppl_Pointset_Powerset_BD_Shape_long_double_add_disjunct (ppl_Pointset_Powerset_BD_Shape_long_double_t ps, ppl_const_BD_Shape_long_double_t d)`
[related]
- 10.74.2.14 `int ppl_Pointset_Powerset_BD_Shape_long_double_add_space_dimensions_and_embed (ppl_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_dimension_type d)`
[related]
- 10.74.2.15 `int ppl_Pointset_Powerset_BD_Shape_long_double_add_space_dimensions_and_project (ppl_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_dimension_type d)`
[related]
- 10.74.2.16 `int ppl_Pointset_Powerset_BD_Shape_long_double_affine_dimension (ppl_const_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_dimension_type * m)`
[related]
- 10.74.2.17 `int ppl_Pointset_Powerset_BD_Shape_long_double_affine_image (ppl_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [related]

- 10.74.2.18 `int ppl_Pointset_Powerset_BD_Shape_long_double_affine_preimage`
 (`ppl_Pointset_Powerset_BD_Shape_long_double_t ph`, `ppl_dimension_type var`,
`ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`) [`related`]
- 10.74.2.19 `int ppl_Pointset_Powerset_BD_Shape_long_double_BGP99_BHMZ05_-`
`extrapolation_assign` (`ppl_Pointset_Powerset_BD_Shape_long_double_t x`,
`ppl_const_Pointset_Powerset_BD_Shape_long_double_t y`, `int disjuncts`) [`related`]
- 10.74.2.20 `int ppl_Pointset_Powerset_BD_Shape_long_double_BGP99_H79_-`
`extrapolation_assign` (`ppl_Pointset_Powerset_BD_Shape_long_double_t x`,
`ppl_const_Pointset_Powerset_BD_Shape_long_double_t y`, `int disjuncts`) [`related`]
- 10.74.2.21 `int ppl_Pointset_Powerset_BD_Shape_long_double_BHZ03_H79_BHMZ05_-`
`widening_assign` (`ppl_Pointset_Powerset_BD_Shape_long_double_t x`,
`ppl_const_Pointset_Powerset_BD_Shape_long_double_t y`) [`related`]
- 10.74.2.22 `int ppl_Pointset_Powerset_BD_Shape_long_double_BHZ03_H79_H79_-`
`widening_assign` (`ppl_Pointset_Powerset_BD_Shape_long_double_t x`,
`ppl_const_Pointset_Powerset_BD_Shape_long_double_t y`) [`related`]
- 10.74.2.23 `int ppl_Pointset_Powerset_BD_Shape_long_double_bounded_affine_image`
 (`ppl_Pointset_Powerset_BD_Shape_long_double_t ph`, `ppl_dimension_type`
`var`, `ppl_const_Linear_Expression_t lb`, `ppl_const_Linear_Expression_t ub`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.74.2.24 `int ppl_Pointset_Powerset_BD_Shape_long_double_bounded_affine_preimage`
 (`ppl_Pointset_Powerset_BD_Shape_long_double_t ph`, `ppl_dimension_type`
`var`, `ppl_const_Linear_Expression_t lb`, `ppl_const_Linear_Expression_t ub`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.74.2.25 `int ppl_Pointset_Powerset_BD_Shape_long_double_bounds_from_above` (`ppl_const_-`
`Pointset_Powerset_BD_Shape_long_double_t ph`, `ppl_const_Linear_Expression_t le`)
 [`related`]

- 10.74.2.26 `int ppl_Pointset_Powerset_BD_Shape_long_double_bounds_from_below (ppl_const_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_const_Linear_Expression_t le)` [related]
- 10.74.2.27 `int ppl_Pointset_Powerset_BD_Shape_long_double_concatenate_assign (ppl_Pointset_Powerset_BD_Shape_long_double_t x, ppl_const_Pointset_Powerset_BD_Shape_long_double_t y)` [related]
- 10.74.2.28 `int ppl_Pointset_Powerset_BD_Shape_long_double_constrains (ppl_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_dimension_type var)` [related]
- 10.74.2.29 `int ppl_Pointset_Powerset_BD_Shape_long_double_contains_integer_point (ppl_const_Pointset_Powerset_BD_Shape_long_double_t ph)` [related]
- 10.74.2.30 `int ppl_Pointset_Powerset_BD_Shape_long_double_contains_Pointset_Powerset_BD_Shape_long_double (ppl_const_Pointset_Powerset_BD_Shape_long_double_t x, ppl_const_Pointset_Powerset_BD_Shape_long_double_t y)` [related]
- 10.74.2.31 `int ppl_Pointset_Powerset_BD_Shape_long_double_difference_assign (ppl_Pointset_Powerset_BD_Shape_long_double_t x, ppl_const_Pointset_Powerset_BD_Shape_long_double_t y)` [related]
- 10.74.2.32 `int ppl_Pointset_Powerset_BD_Shape_long_double_drop_disjunct (ppl_Pointset_Powerset_BD_Shape_long_double_t ps, ppl_const_Pointset_Powerset_BD_Shape_long_double_iterator_t cit, ppl_Pointset_Powerset_BD_Shape_long_double_iterator_t it)` [related]
- 10.74.2.33 `int ppl_Pointset_Powerset_BD_Shape_long_double_drop_disjuncts (ppl_Pointset_Powerset_BD_Shape_long_double_t ps, ppl_const_Pointset_Powerset_BD_Shape_long_double_iterator_t first, ppl_const_Pointset_Powerset_BD_Shape_long_double_iterator_t last)` [related]

- 10.74.2.34 `int ppl_Pointset_Powerset_BD_Shape_long_double_drop_some_non_integer_points`
(`ppl_Pointset_Powerset_BD_Shape_long_double_t ph`, `int complexity`) [`related`]
- 10.74.2.35 `int ppl_Pointset_Powerset_BD_Shape_long_double_drop_some_non_integer_points_2`
(`ppl_Pointset_Powerset_BD_Shape_long_double_t ph`, `ppl_dimension_type ds[ ]`,
`size_t n`, `int complexity`) [`related`]
- 10.74.2.36 `int ppl_Pointset_Powerset_BD_Shape_long_double_equals_Pointset_Powerset_BD_-`
`Shape_long_double` (`ppl_const_Pointset_Powerset_BD_Shape_long_double_t x`,
`ppl_const_Pointset_Powerset_BD_Shape_long_double_t y`) [`related`]
- 10.74.2.37 `int ppl_Pointset_Powerset_BD_Shape_long_double_expand_space_dimension`
(`ppl_Pointset_Powerset_BD_Shape_long_double_t ph`, `ppl_dimension_type d`,
`ppl_dimension_type m`) [`related`]
- 10.74.2.38 `int ppl_Pointset_Powerset_BD_Shape_long_double_external_memory_in_bytes`
(`ppl_const_Pointset_Powerset_BD_Shape_long_double_t ps`, `size_t * sz`) [`related`]
- 10.74.2.39 `int ppl_Pointset_Powerset_BD_Shape_long_double_fold_space_dimensions`
(`ppl_Pointset_Powerset_BD_Shape_long_double_t ph`, `ppl_dimension_type ds[ ]`,
`size_t n`, `ppl_dimension_type d`) [`related`]
- 10.74.2.40 `int ppl_Pointset_Powerset_BD_Shape_long_double_generalized_affine_image`
(`ppl_Pointset_Powerset_BD_Shape_long_double_t ph`, `ppl_dimension_type var`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.74.2.41 `int ppl_Pointset_Powerset_BD_Shape_long_double_generalized_affine_image_lhs_rhs`
(`ppl_Pointset_Powerset_BD_Shape_long_double_t ph`, `ppl_const_Linear_Expression_t`
`lhs`, `enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
[`related`]

- 10.74.2.42** `int ppl_Pointset_Powerset_BD_Shape_long_double_generalized_affine_preimage`
 (`ppl_Pointset_Powerset_BD_Shape_long_double_t ph`, `ppl_dimension_type var`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [**related**]
- 10.74.2.43** `int ppl_Pointset_Powerset_BD_Shape_long_double_generalized_affine_-`
`preimage_lhs_rhs` (`ppl_Pointset_Powerset_BD_Shape_long_double_t ph`,
`ppl_const_Linear_Expression_t lhs`, `enum ppl_enum_Constraint_Type relsym`,
`ppl_const_Linear_Expression_t rhs`) [**related**]
- 10.74.2.44** `int ppl_Pointset_Powerset_BD_Shape_long_double_geometrically_covers_Pointset_-`
`Powerset_BD_Shape_long_double` (`ppl_const_Pointset_Powerset_BD_Shape_-`
`long_double_t x`, `ppl_const_Pointset_Powerset_BD_Shape_long_double_t y`)
 [**related**]
- 10.74.2.45** `int ppl_Pointset_Powerset_BD_Shape_long_double_geometrically_equals_Pointset_-`
`Powerset_BD_Shape_long_double` (`ppl_const_Pointset_Powerset_BD_Shape_-`
`long_double_t x`, `ppl_const_Pointset_Powerset_BD_Shape_long_double_t y`)
 [**related**]
- 10.74.2.46** `int ppl_Pointset_Powerset_BD_Shape_long_double_intersection_-`
`assign` (`ppl_Pointset_Powerset_BD_Shape_long_double_t x`,
`ppl_const_Pointset_Powerset_BD_Shape_long_double_t y`) [**related**]
- 10.74.2.47** `int ppl_Pointset_Powerset_BD_Shape_long_double_is_bounded`
 (`ppl_const_Pointset_Powerset_BD_Shape_long_double_t ph`) [**related**]
- 10.74.2.48** `int ppl_Pointset_Powerset_BD_Shape_long_double_is_discrete`
 (`ppl_const_Pointset_Powerset_BD_Shape_long_double_t ph`) [**related**]

- 10.74.2.49** `int ppl_Pointset_Powerset_BD_Shape_long_double_is_disjoint_from_Pointset_Powerset_BD_Shape_long_double (ppl_const_Pointset_Powerset_BD_Shape_long_double_t x, ppl_const_Pointset_Powerset_BD_Shape_long_double_t y)` **[related]**
- 10.74.2.50** `int ppl_Pointset_Powerset_BD_Shape_long_double_is_empty (ppl_const_Pointset_Powerset_BD_Shape_long_double_t ph)` **[related]**
- 10.74.2.51** `int ppl_Pointset_Powerset_BD_Shape_long_double_is_topologically_closed (ppl_const_Pointset_Powerset_BD_Shape_long_double_t ph)` **[related]**
- 10.74.2.52** `int ppl_Pointset_Powerset_BD_Shape_long_double_is_universe (ppl_const_Pointset_Powerset_BD_Shape_long_double_t ph)` **[related]**
- 10.74.2.53** `int ppl_Pointset_Powerset_BD_Shape_long_double_map_space_dimensions (ppl_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_dimension_type maps[], size_t n)` **[related]**
- 10.74.2.54** `int ppl_Pointset_Powerset_BD_Shape_long_double_maximize (ppl_const_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` **[related]**
- 10.74.2.55** `int ppl_Pointset_Powerset_BD_Shape_long_double_maximize_with_point (ppl_const_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` **[related]**
- 10.74.2.56** `int ppl_Pointset_Powerset_BD_Shape_long_double_minimize (ppl_const_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` **[related]**

- 10.74.2.57** `int ppl_Pointset_Powerset_BD_Shape_long_double_minimize_with_point (ppl_const_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` `[related]`
- 10.74.2.58** `int ppl_Pointset_Powerset_BD_Shape_long_double_OK (ppl_const_Pointset_Powerset_BD_Shape_long_double_t ph)` `[related]`
- 10.74.2.59** `int ppl_Pointset_Powerset_BD_Shape_long_double_omega_reduce (ppl_Pointset_Powerset_BD_Shape_long_double_t ph)` `[related]`
- 10.74.2.60** `int ppl_Pointset_Powerset_BD_Shape_long_double_pairwise_reduce (ppl_Pointset_Powerset_BD_Shape_long_double_t ph)` `[related]`
- 10.74.2.61** `int ppl_Pointset_Powerset_BD_Shape_long_double_refine_with_congruence (ppl_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_const_Congruence_t c)` `[related]`
- 10.74.2.62** `int ppl_Pointset_Powerset_BD_Shape_long_double_refine_with_congruences (ppl_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_const_Congruence_System_t cs)` `[related]`
- 10.74.2.63** `int ppl_Pointset_Powerset_BD_Shape_long_double_refine_with_constraint (ppl_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_const_Constraint_t c)` `[related]`
- 10.74.2.64** `int ppl_Pointset_Powerset_BD_Shape_long_double_refine_with_constraints (ppl_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_const_Constraint_System_t cs)` `[related]`

- 10.74.2.65 `int ppl_Pointset_Powerset_BD_Shape_long_double_relation_with_Congruence`
(`ppl_const_Pointset_Powerset_BD_Shape_long_double_t ph`, `ppl_const_Congruence_t c`) [`related`]
- 10.74.2.66 `int ppl_Pointset_Powerset_BD_Shape_long_double_relation_with_Constraint`
(`ppl_const_Pointset_Powerset_BD_Shape_long_double_t ph`, `ppl_const_Constraint_t c`) [`related`]
- 10.74.2.67 `int ppl_Pointset_Powerset_BD_Shape_long_double_relation_with_Generator`
(`ppl_const_Pointset_Powerset_BD_Shape_long_double_t ph`, `ppl_const_Generator_t c`) [`related`]
- 10.74.2.68 `int ppl_Pointset_Powerset_BD_Shape_long_double_remove_higher_space_dimensions`
(`ppl_Pointset_Powerset_BD_Shape_long_double_t ph`, `ppl_dimension_type d`) [`related`]
- 10.74.2.69 `int ppl_Pointset_Powerset_BD_Shape_long_double_remove_space_dimensions`
(`ppl_Pointset_Powerset_BD_Shape_long_double_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`) [`related`]
- 10.74.2.70 `int ppl_Pointset_Powerset_BD_Shape_long_double_simplify_using_-context_assign`
(`ppl_Pointset_Powerset_BD_Shape_long_double_t x`, `ppl_const_Pointset_Powerset_BD_Shape_long_double_t y`) [`related`]
- 10.74.2.71 `int ppl_Pointset_Powerset_BD_Shape_long_double_size`
(`ppl_const_Pointset_Powerset_BD_Shape_long_double_t ps`, `size_t * sz`) [`related`]
- 10.74.2.72 `int ppl_Pointset_Powerset_BD_Shape_long_double_space_dimension`
(`ppl_const_Pointset_Powerset_BD_Shape_long_double_t ph`, `ppl_dimension_type * m`) [`related`]

- 10.74.2.73** `int ppl_Pointset_Powerset_BD_Shape_long_double_strictly_contains_Pointset_Powerset_BD_Shape_long_double (ppl_const_Pointset_Powerset_BD_Shape_long_double_t x, ppl_const_Pointset_Powerset_BD_Shape_long_double_t y)` **[related]**
- 10.74.2.74** `int ppl_Pointset_Powerset_BD_Shape_long_double_time_elapse_assign (ppl_Pointset_Powerset_BD_Shape_long_double_t x, ppl_const_Pointset_Powerset_BD_Shape_long_double_t y)` **[related]**
- 10.74.2.75** `int ppl_Pointset_Powerset_BD_Shape_long_double_topological_closure_assign (ppl_Pointset_Powerset_BD_Shape_long_double_t ph)` **[related]**
- 10.74.2.76** `int ppl_Pointset_Powerset_BD_Shape_long_double_total_memory_in_bytes (ppl_const_Pointset_Powerset_BD_Shape_long_double_t ps, size_t * sz)` **[related]**
- 10.74.2.77** `int ppl_Pointset_Powerset_BD_Shape_long_double_unconstrain_space_dimension (ppl_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_dimension_type var)` **[related]**
- 10.74.2.78** `int ppl_Pointset_Powerset_BD_Shape_long_double_unconstrain_space_dimensions (ppl_Pointset_Powerset_BD_Shape_long_double_t ph, ppl_dimension_type ds[], size_t n)` **[related]**
- 10.74.2.79** `int ppl_Pointset_Powerset_BD_Shape_long_double_upper_bound_assign (ppl_Pointset_Powerset_BD_Shape_long_double_t x, ppl_const_Pointset_Powerset_BD_Shape_long_double_t y)` **[related]**
- 10.74.2.80** `int ppl_Pointset_Powerset_BD_Shape_long_double_upper_bound_assign_if_exact (ppl_Pointset_Powerset_BD_Shape_long_double_t x, ppl_const_Pointset_Powerset_BD_Shape_long_double_t y)` **[related]**

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.75 [ppl_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_tag](#) Interface Reference

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_BD_Shape_mpq_class_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- int [ppl_new_Pointset_Powerset_BD_Shape_mpq_class_const_iterator](#) ([ppl_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_t](#) *pit)
- int [ppl_new_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_from_const_iterator](#) ([ppl_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_t](#) *px, [ppl_const_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_t](#) y)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_begin](#) ([ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t](#) ps, [ppl_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_t](#) psit)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_end](#) ([ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t](#) ps, [ppl_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_t](#) psit)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_equal_test](#) ([ppl_const_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_t](#) x, [ppl_const_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_t](#) y)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_increment](#) ([ppl_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_t](#) psit)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_decrement](#) ([ppl_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_t](#) psit)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_dereference](#) ([ppl_const_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_t](#) ps, [ppl_const_BD_Shape_mpq_class_t](#) *d)
- int [ppl_delete_Pointset_Powerset_BD_Shape_mpq_class_const_iterator](#) ([ppl_const_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_t](#) psit)

10.75.1 Detailed Description

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_BD_Shape_mpq_class_tag](#).

10.75.2 Friends And Related Function Documentation

- 10.75.2.1** int [ppl_delete_Pointset_Powerset_BD_Shape_mpq_class_const_iterator](#) ([ppl_const_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_t](#) *psit*)
[related]

- 10.75.2.2 `int ppl_new_Pointset_Powerset_BD_Shape_mpq_class_const_iterator`
(`ppl_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_t * pit`) [`related`]
- 10.75.2.3 `int ppl_new_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_from_const_iterator`
(`ppl_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_t * px`,
`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_t y`) [`related`]
- 10.75.2.4 `int ppl_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_begin`
(`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t ps`,
`ppl_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_t psit`) [`related`]
- 10.75.2.5 `int ppl_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_decrement`
(`ppl_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_t psit`) [`related`]
- 10.75.2.6 `int ppl_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_dereference`
(`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_t ps`,
`ppl_const_BD_Shape_mpq_class_t * d`) [`related`]
- 10.75.2.7 `int ppl_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_end`
(`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t ps`,
`ppl_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_t psit`) [`related`]
- 10.75.2.8 `int ppl_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_equal_test`
(`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_t x`,
`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_t y`) [`related`]
- 10.75.2.9 `int ppl_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_increment`
(`ppl_Pointset_Powerset_BD_Shape_mpq_class_const_iterator_t psit`) [`related`]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.76 ppl_Pointset_Powerset_BD_Shape_mpq_class_iterator_tag Interface Reference

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_BD_Shape_mpq_class_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- [int ppl_new_Pointset_Powerset_BD_Shape_mpq_class_iterator](#) (ppl_Pointset_Powerset_BD_Shape_mpq_class_iterator_t *pit)
- [int ppl_new_Pointset_Powerset_BD_Shape_mpq_class_iterator_from_iterator](#) (ppl_Pointset_Powerset_BD_Shape_mpq_class_iterator_t *px, ppl_const_Pointset_Powerset_BD_Shape_mpq_class_iterator_t y)
- [int ppl_Pointset_Powerset_BD_Shape_mpq_class_iterator_begin](#) (ppl_Pointset_Powerset_BD_Shape_mpq_class_t ps, ppl_Pointset_Powerset_BD_Shape_mpq_class_iterator_t psit)
- [int ppl_Pointset_Powerset_BD_Shape_mpq_class_iterator_end](#) (ppl_Pointset_Powerset_BD_Shape_mpq_class_t ps, ppl_Pointset_Powerset_BD_Shape_mpq_class_iterator_t psit)
- [int ppl_Pointset_Powerset_BD_Shape_mpq_class_iterator_equal_test](#) (ppl_const_Pointset_Powerset_BD_Shape_mpq_class_iterator_t x, ppl_const_Pointset_Powerset_BD_Shape_mpq_class_iterator_t y)
- [int ppl_Pointset_Powerset_BD_Shape_mpq_class_iterator_increment](#) (ppl_Pointset_Powerset_BD_Shape_mpq_class_iterator_t psit)
- [int ppl_Pointset_Powerset_BD_Shape_mpq_class_iterator_decrement](#) (ppl_Pointset_Powerset_BD_Shape_mpq_class_iterator_t psit)
- [int ppl_Pointset_Powerset_BD_Shape_mpq_class_iterator_dereference](#) (ppl_const_Pointset_Powerset_BD_Shape_mpq_class_iterator_t ps, ppl_const_BD_Shape_mpq_class_t *d)
- [int ppl_delete_Pointset_Powerset_BD_Shape_mpq_class_iterator](#) (ppl_const_Pointset_Powerset_BD_Shape_mpq_class_iterator_t psit)

10.76.1 Detailed Description

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_BD_Shape_mpq_class_tag](#).

10.76.2 Friends And Related Function Documentation

10.76.2.1 [int ppl_delete_Pointset_Powerset_BD_Shape_mpq_class_iterator](#)
(ppl_const_Pointset_Powerset_BD_Shape_mpq_class_iterator_t *psit*) [**related**]

10.76.2.2 [int ppl_new_Pointset_Powerset_BD_Shape_mpq_class_iterator](#)
(ppl_Pointset_Powerset_BD_Shape_mpq_class_iterator_t **pit*) [**related**]

- 10.76.2.3** `int ppl_new_Pointset_Powerset_BD_Shape_mpq_class_iterator_from_iterator`
 (`ppl_Pointset_Powerset_BD_Shape_mpq_class_iterator_t * px`,
`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_iterator_t y`) [`related`]
- 10.76.2.4** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_iterator_begin`
 (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t ps`, `ppl_Pointset_Powerset_BD_Shape_mpq_class_iterator_t psit`) [`related`]
- 10.76.2.5** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_iterator_decrement`
 (`ppl_Pointset_Powerset_BD_Shape_mpq_class_iterator_t psit`) [`related`]
- 10.76.2.6** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_iterator_dereference`
 (`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_iterator_t ps`,
`ppl_const_BD_Shape_mpq_class_t * d`) [`related`]
- 10.76.2.7** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_iterator_end`
 (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t ps`, `ppl_Pointset_Powerset_BD_Shape_mpq_class_iterator_t psit`) [`related`]
- 10.76.2.8** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_iterator_equal_test`
 (`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_iterator_t x`,
`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_iterator_t y`) [`related`]
- 10.76.2.9** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_iterator_increment`
 (`ppl_Pointset_Powerset_BD_Shape_mpq_class_iterator_t psit`) [`related`]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.77 ppl_Pointset_Powerset_BD_Shape_mpq_class_tag Interface Reference

Types and functions for [ppl_Pointset_Powerset_BD_Shape_mpq_class_tag](#).

```
#include <ppl_c.h>
```


Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Pointset_Powerset_BD_Shape_mpq_class` (`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t` ph)
- `int ppl_new_Pointset_Powerset_BD_Shape_mpq_class_from_space_dimension` (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t` *pph, `ppl_dimension_type` d, `int` empty)
- `int ppl_new_Pointset_Powerset_BD_Shape_mpq_class_from_Pointset_Powerset_BD_Shape_mpq_class` (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t` *pph, `ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t` ph)
- `int ppl_new_Pointset_Powerset_BD_Shape_mpq_class_from_BD_Shape_mpq_class` (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t` *pph, `ppl_const_BD_Shape_mpq_class_t` ph)
- `int ppl_new_Pointset_Powerset_BD_Shape_mpq_class_from_Pointset_Powerset_BD_Shape_mpq_class_with_complexity` (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t` *pph, `ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t` ph, `int` complexity)
- `int ppl_new_Pointset_Powerset_BD_Shape_mpq_class_from_BD_Shape_mpq_class_with_complexity` (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t` *pph, `ppl_const_BD_Shape_mpq_class_t` ph, `int` complexity)
- `int ppl_new_Pointset_Powerset_BD_Shape_mpq_class_from_Constraint_System` (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t` *pph, `ppl_const_Constraint_System_t` cs)
- `int ppl_new_Pointset_Powerset_BD_Shape_mpq_class_from_Congruence_System` (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t` *pph, `ppl_const_Congruence_System_t` cs)
- `int ppl_Pointset_Powerset_BD_Shape_mpq_class_space_dimension` (`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t` ph, `ppl_dimension_type` *m)
- `int ppl_Pointset_Powerset_BD_Shape_mpq_class_affine_dimension` (`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t` ph, `ppl_dimension_type` *m)
- `int ppl_Pointset_Powerset_BD_Shape_mpq_class_relation_with_Constraint` (`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t` ph, `ppl_const_Constraint_t` c)
- `int ppl_Pointset_Powerset_BD_Shape_mpq_class_relation_with_Generator` (`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t` ph, `ppl_const_Generator_t` c)
- `int ppl_Pointset_Powerset_BD_Shape_mpq_class_relation_with_Congruence` (`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t` ph, `ppl_const_Congruence_t` c)
- `int ppl_Pointset_Powerset_BD_Shape_mpq_class_is_empty` (`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t` ph)
- `int ppl_Pointset_Powerset_BD_Shape_mpq_class_is_universe` (`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t` ph)
- `int ppl_Pointset_Powerset_BD_Shape_mpq_class_is_bounded` (`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t` ph)
- `int ppl_Pointset_Powerset_BD_Shape_mpq_class_contains_integer_point` (`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t` ph)
- `int ppl_Pointset_Powerset_BD_Shape_mpq_class_is_topologically_closed` (`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t` ph)
- `int ppl_Pointset_Powerset_BD_Shape_mpq_class_is_discrete` (`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t` ph)
- `int ppl_Pointset_Powerset_BD_Shape_mpq_class_topological_closure_assign` (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t` ph)
- `int ppl_Pointset_Powerset_BD_Shape_mpq_class_pairwise_reduce` (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t` ph)
- `int ppl_Pointset_Powerset_BD_Shape_mpq_class_omega_reduce` (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t` ph)

- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_bounds_from_above](#) (ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_bounds_from_below](#) (ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_maximize](#) (ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_minimize](#) (ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_maximize_with_point](#) (ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_minimize_with_point](#) (ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_contains_Pointset_Powerset_BD_Shape_mpq_class](#) (ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t y)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_strictly_contains_Pointset_Powerset_BD_Shape_mpq_class](#) (ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t y)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_is_disjoint_from_Pointset_Powerset_BD_Shape_mpq_class](#) (ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t y)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_geometrically_covers_Pointset_Powerset_BD_Shape_mpq_class](#) (ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t y)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_geometrically_equals_Pointset_Powerset_BD_Shape_mpq_class](#) (ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t y)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_equals_Pointset_Powerset_BD_Shape_mpq_class](#) (ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t y)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_OK](#) (ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_add_constraint](#) (ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_add_congruence](#) (ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_add_constraints](#) (ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_add_congruences](#) (ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_refine_with_constraint](#) (ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_refine_with_congruence](#) (ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_refine_with_constraints](#) (ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_refine_with_congruences](#) (ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_const_Congruence_System_t cs)

- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_intersection_assign](#) (ppl_Pointset_Powerset_-
BD_Shape_mpq_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t y)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_upper_bound_assign](#) (ppl_Pointset_Powerset_-
BD_Shape_mpq_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t y)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_difference_assign](#) (ppl_Pointset_Powerset_BD_-
Shape_mpq_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t y)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_concatenate_assign](#) (ppl_Pointset_Powerset_-
BD_Shape_mpq_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t y)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_time_elapse_assign](#) (ppl_Pointset_Powerset_-
BD_Shape_mpq_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t y)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_upper_bound_assign_if_exact](#) (ppl_Pointset_-
Powerset_BD_Shape_mpq_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t y)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_simplify_using_context_assign](#) (ppl_Pointset_-
Powerset_BD_Shape_mpq_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t y)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_constrains](#) (ppl_Pointset_Powerset_BD_Shape_-
mpq_class_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_unconstrain_space_dimension](#) (ppl_Pointset_-
Powerset_BD_Shape_mpq_class_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_unconstrain_space_dimensions](#) (ppl_Pointset_-
Powerset_BD_Shape_mpq_class_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_affine_image](#) (ppl_Pointset_Powerset_BD_-
Shape_mpq_class_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_-
Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_affine_preimage](#) (ppl_Pointset_Powerset_BD_-
Shape_mpq_class_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_-
Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_bounded_affine_image](#) (ppl_Pointset_-
Powerset_BD_Shape_mpq_class_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb,
ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_bounded_affine_preimage](#) (ppl_Pointset_-
Powerset_BD_Shape_mpq_class_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb,
ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_generalized_affine_image](#) (ppl_Pointset_-
Powerset_BD_Shape_mpq_class_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#)
relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_generalized_affine_preimage](#) (ppl_Pointset_-
Powerset_BD_Shape_mpq_class_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#)
relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_generalized_affine_image_lhs_rhs](#) (ppl_-
Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t lhs, enum
[ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_generalized_affine_preimage_lhs_rhs](#) (ppl_-
Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t lhs, enum
[ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_add_space_dimensions_and_embed](#) (ppl_-
Pointset_Powerset_BD_Shape_mpq_class_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_add_space_dimensions_and_project](#) (ppl_-
Pointset_Powerset_BD_Shape_mpq_class_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_remove_space_dimensions](#) (ppl_Pointset_-
Powerset_BD_Shape_mpq_class_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_BD_Shape_mpq_class_remove_higher_space_dimensions](#) (ppl_-
Pointset_Powerset_BD_Shape_mpq_class_t ph, [ppl_dimension_type](#) d)

- `int ppl_Pointset_Powerset_BD_Shape_mpq_class_expand_space_dimension` (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t` *ph*, `ppl_dimension_type` *d*, `ppl_dimension_type` *m*)
- `int ppl_Pointset_Powerset_BD_Shape_mpq_class_fold_space_dimensions` (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t` *ph*, `ppl_dimension_type` *ds*[], `size_t` *n*, `ppl_dimension_type` *d*)
- `int ppl_Pointset_Powerset_BD_Shape_mpq_class_map_space_dimensions` (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t` *ph*, `ppl_dimension_type` *maps*[], `size_t` *n*)
- `int ppl_Pointset_Powerset_BD_Shape_mpq_class_drop_some_non_integer_points` (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t` *ph*, `int` *complexity*)
- `int ppl_Pointset_Powerset_BD_Shape_mpq_class_drop_some_non_integer_points_2` (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t` *ph*, `ppl_dimension_type` *ds*[], `size_t` *n*, `int` *complexity*)
- `int ppl_Pointset_Powerset_BD_Shape_mpq_class_external_memory_in_bytes` (`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t` *ps*, `size_t` **sz*)
- `int ppl_Pointset_Powerset_BD_Shape_mpq_class_total_memory_in_bytes` (`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t` *ps*, `size_t` **sz*)
- `int ppl_Pointset_Powerset_BD_Shape_mpq_class_size` (`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t` *ps*, `size_t` **sz*)
- `int ppl_Pointset_Powerset_BD_Shape_mpq_class_add_disjunct` (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t` *ps*, `ppl_const_BD_Shape_mpq_class_t` *d*)
- `int ppl_Pointset_Powerset_BD_Shape_mpq_class_drop_disjunct` (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t` *ps*, `ppl_const_Pointset_Powerset_BD_Shape_mpq_class_iterator_t` *cit*, `ppl_Pointset_Powerset_BD_Shape_mpq_class_iterator_t` *it*)
- `int ppl_Pointset_Powerset_BD_Shape_mpq_class_drop_disjuncts` (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t` *ps*, `ppl_const_Pointset_Powerset_BD_Shape_mpq_class_iterator_t` *first*, `ppl_const_Pointset_Powerset_BD_Shape_mpq_class_iterator_t` *last*)
- `int ppl_Pointset_Powerset_BD_Shape_mpq_class_BHZ03_H79_BHMZ05_widening_assign` (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t` *x*, `ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t` *y*)
- `int ppl_Pointset_Powerset_BD_Shape_mpq_class_BHZ03_H79_H79_widening_assign` (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t` *x*, `ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t` *y*)
- `int ppl_Pointset_Powerset_BD_Shape_mpq_class_BGP99_BHMZ05_extrapolation_assign` (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t` *x*, `ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t` *y*, `int` *disjuncts*)
- `int ppl_Pointset_Powerset_BD_Shape_mpq_class_BGP99_H79_extrapolation_assign` (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t` *x*, `ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t` *y*, `int` *disjuncts*)

10.77.1 Detailed Description

Types and functions for `ppl_Pointset_Powerset_BD_Shape_mpq_class_tag`.

10.77.2 Friends And Related Function Documentation

10.77.2.1 `int ppl_delete_Pointset_Powerset_BD_Shape_mpq_class` (`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t` *ph*) [**related**]

- 10.77.2.2** `int ppl_new_Pointset_Powerset_BD_Shape_mpq_class_from_BD_-
Shape_mpq_class (ppl_Pointset_Powerset_BD_Shape_mpq_class_t * pph,
ppl_const_BD_Shape_mpq_class_t ph)` [**related**]
- 10.77.2.3** `int ppl_new_Pointset_Powerset_BD_Shape_mpq_class_from_BD_Shape_mpq_-
class_with_complexity (ppl_Pointset_Powerset_BD_Shape_mpq_class_t * pph,
ppl_const_BD_Shape_mpq_class_t ph, int complexity)` [**related**]
- 10.77.2.4** `int ppl_new_Pointset_Powerset_BD_Shape_mpq_class_from_Congruence_-
System (ppl_Pointset_Powerset_BD_Shape_mpq_class_t * pph,
ppl_const_Congruence_System_t cs)` [**related**]
- 10.77.2.5** `int ppl_new_Pointset_Powerset_BD_Shape_mpq_class_from_Constraint_System
(ppl_Pointset_Powerset_BD_Shape_mpq_class_t * pph, ppl_const_Constraint_System_t
cs)` [**related**]
- 10.77.2.6** `int ppl_new_Pointset_Powerset_BD_Shape_mpq_class_from_Pointset_Powerset_-
BD_Shape_mpq_class (ppl_Pointset_Powerset_BD_Shape_mpq_class_t * pph,
ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t ph)` [**related**]
- 10.77.2.7** `int ppl_new_Pointset_Powerset_BD_Shape_mpq_class_from_Pointset_Powerset_BD_-
Shape_mpq_class_with_complexity (ppl_Pointset_Powerset_BD_Shape_mpq_class_t
* pph, ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t ph, int complexity)`
[**related**]
- 10.77.2.8** `int ppl_new_Pointset_Powerset_BD_Shape_mpq_class_from_space_dimension
(ppl_Pointset_Powerset_BD_Shape_mpq_class_t * pph, ppl_dimension_type d, int
empty)` [**related**]
- 10.77.2.9** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_add_congruence
(ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_const_Congruence_t c)`
[**related**]

- 10.77.2.10** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_add_congruences`
 (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph`, `ppl_const_Congruence_System_t cs`) [**related**]
- 10.77.2.11** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_add_constraint`
 (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph`, `ppl_const_Constraint_t c`)
 [**related**]
- 10.77.2.12** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_add_constraints`
 (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph`, `ppl_const_Constraint_System_t cs`) [**related**]
- 10.77.2.13** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_add_disjunct` (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t ps`, `ppl_const_BD_Shape_mpq_class_t d`)
 [**related**]
- 10.77.2.14** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_add_space_dimensions_and_embed`
 (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph`, `ppl_dimension_type d`)
 [**related**]
- 10.77.2.15** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_add_space_dimensions_and_project`
 (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph`, `ppl_dimension_type d`)
 [**related**]
- 10.77.2.16** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_affine_dimension`
 (`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t ph`, `ppl_dimension_type * m`)
 [**related**]
- 10.77.2.17** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_affine_image`
 (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph`, `ppl_dimension_type var`,
`ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`) [**related**]

- 10.77.2.18** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_affine_preimage`
`(ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_dimension_type var,`
`ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.77.2.19** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_BGP99_BHMZ05_-`
`extrapolation_assign (ppl_Pointset_Powerset_BD_Shape_mpq_class_t x,`
`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t y, int disjuncts)` [**related**]
- 10.77.2.20** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_BGP99_H79_-`
`extrapolation_assign (ppl_Pointset_Powerset_BD_Shape_mpq_class_t x,`
`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t y, int disjuncts)` [**related**]
- 10.77.2.21** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_BHZ03_H79_BHMZ05_-`
`widening_assign (ppl_Pointset_Powerset_BD_Shape_mpq_class_t x,`
`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t y)` [**related**]
- 10.77.2.22** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_BHZ03_H79_H79_-`
`widening_assign (ppl_Pointset_Powerset_BD_Shape_mpq_class_t x,`
`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t y)` [**related**]
- 10.77.2.23** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_bounded_affine_image`
`(ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_dimension_type`
`var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub,`
`ppl_const_Coefficient_t d)` [**related**]
- 10.77.2.24** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_bounded_affine_preimage`
`(ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_dimension_type`
`var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub,`
`ppl_const_Coefficient_t d)` [**related**]
- 10.77.2.25** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_bounds_from_above (ppl_const_-`
`Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le)`
[related]

- 10.77.2.26** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_bounds_from_below (ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le)` [**related**]
- 10.77.2.27** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_concatenate_assign (ppl_Pointset_Powerset_BD_Shape_mpq_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t y)` [**related**]
- 10.77.2.28** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_constrains (ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_dimension_type var)` [**related**]
- 10.77.2.29** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_contains_integer_point (ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t ph)` [**related**]
- 10.77.2.30** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_contains_Pointset_Powerset_BD_Shape_mpq_class (ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t y)` [**related**]
- 10.77.2.31** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_difference_assign (ppl_Pointset_Powerset_BD_Shape_mpq_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t y)` [**related**]
- 10.77.2.32** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_drop_disjunct (ppl_Pointset_Powerset_BD_Shape_mpq_class_t ps, ppl_const_Pointset_Powerset_BD_Shape_mpq_class_iterator_t cit, ppl_Pointset_Powerset_BD_Shape_mpq_class_iterator_t it)` [**related**]
- 10.77.2.33** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_drop_disjuncts (ppl_Pointset_Powerset_BD_Shape_mpq_class_t ps, ppl_const_Pointset_Powerset_BD_Shape_mpq_class_iterator_t first, ppl_const_Pointset_Powerset_BD_Shape_mpq_class_iterator_t last)` [**related**]

- 10.77.2.34 `int ppl_Pointset_Powerset_BD_Shape_mpq_class_drop_some_non_integer_points`
`(ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph, int complexity)` [**related**]
- 10.77.2.35 `int ppl_Pointset_Powerset_BD_Shape_mpq_class_drop_some_non_integer_points_2`
`(ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_dimension_type ds[], size_t
n, int complexity)` [**related**]
- 10.77.2.36 `int ppl_Pointset_Powerset_BD_Shape_mpq_class_equals_Pointset_Powerset_-`
`BD_Shape_mpq_class (ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t x,`
`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t y)` [**related**]
- 10.77.2.37 `int ppl_Pointset_Powerset_BD_Shape_mpq_class_expand_space_dimension`
`(ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_dimension_type d,`
`ppl_dimension_type m)` [**related**]
- 10.77.2.38 `int ppl_Pointset_Powerset_BD_Shape_mpq_class_external_memory_in_bytes`
`(ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t ps, size_t * sz)` [**related**]
- 10.77.2.39 `int ppl_Pointset_Powerset_BD_Shape_mpq_class_fold_space_dimensions`
`(ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_dimension_type ds[], size_t
n, ppl_dimension_type d)` [**related**]
- 10.77.2.40 `int ppl_Pointset_Powerset_BD_Shape_mpq_class_generalized_affine_image`
`(ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_dimension_type var,`
`enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t le,`
`ppl_const_Coefficient_t d)` [**related**]
- 10.77.2.41 `int ppl_Pointset_Powerset_BD_Shape_mpq_class_generalized_affine_image_lhs_rhs`
`(ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t`
`lhs, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t rhs)`
[related]

- 10.77.2.42** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_generalized_affine_preimage`
 (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph`, `ppl_dimension_type var`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.77.2.43** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_generalized_affine_-`
`preimage_lhs_rhs` (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph`,
`ppl_const_Linear_Expression_t lhs`, `enum ppl_enum_Constraint_Type relsym`,
`ppl_const_Linear_Expression_t rhs`) [`related`]
- 10.77.2.44** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_geometrically_covers_-`
`Pointset_Powerset_BD_Shape_mpq_class` (`ppl_const_Pointset_Powerset_BD_-`
`Shape_mpq_class_t x`, `ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t y`)
 [`related`]
- 10.77.2.45** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_geometrically_equals_-`
`Pointset_Powerset_BD_Shape_mpq_class` (`ppl_const_Pointset_Powerset_BD_-`
`Shape_mpq_class_t x`, `ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t y`)
 [`related`]
- 10.77.2.46** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_intersection_assign`
 (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t x`, `ppl_const_Pointset_Powerset_-`
`BD_Shape_mpq_class_t y`) [`related`]
- 10.77.2.47** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_is_bounded`
 (`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t ph`) [`related`]
- 10.77.2.48** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_is_discrete`
 (`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t ph`) [`related`]

- 10.77.2.49** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_is_disjoint_from_Pointset_Powerset_BD_Shape_mpq_class (ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t y)` `[related]`
- 10.77.2.50** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_is_empty (ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t ph)` `[related]`
- 10.77.2.51** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_is_topologically_closed (ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t ph)` `[related]`
- 10.77.2.52** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_is_universe (ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t ph)` `[related]`
- 10.77.2.53** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_map_space_dimensions (ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_dimension_type maps[], size_t n)` `[related]`
- 10.77.2.54** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_maximize (ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)` `[related]`
- 10.77.2.55** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_maximize_with_point (ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` `[related]`
- 10.77.2.56** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_minimize (ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)` `[related]`

- 10.77.2.57** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_minimize_with_point (ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` [**related**]
- 10.77.2.58** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_OK (ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t ph)` [**related**]
- 10.77.2.59** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_omega_reduce (ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph)` [**related**]
- 10.77.2.60** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_pairwise_reduce (ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph)` [**related**]
- 10.77.2.61** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_refine_with_congruence (ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_const_Congruence_t c)` [**related**]
- 10.77.2.62** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_refine_with_congruences (ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_const_Congruence_System_t cs)` [**related**]
- 10.77.2.63** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_refine_with_constraint (ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_const_Constraint_t c)` [**related**]
- 10.77.2.64** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_refine_with_constraints (ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_const_Constraint_System_t cs)` [**related**]

- 10.77.2.65** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_relation_with_Congruence`
 (`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t ph`, `ppl_const_Congruence_t c`)
 [`related`]
- 10.77.2.66** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_relation_with_Constraint`
 (`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t ph`, `ppl_const_Constraint_t c`)
 [`related`]
- 10.77.2.67** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_relation_with_Generator`
 (`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t ph`, `ppl_const_Generator_t c`)
 [`related`]
- 10.77.2.68** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_remove_higher_space_dimensions`
 (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph`, `ppl_dimension_type d`)
 [`related`]
- 10.77.2.69** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_remove_space_dimensions`
 (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`) [`related`]
- 10.77.2.70** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_simplify_using_-`
`context_assign` (`ppl_Pointset_Powerset_BD_Shape_mpq_class_t x`,
`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t y`) [`related`]
- 10.77.2.71** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_size` (`ppl_-`
`const_Pointset_Powerset_BD_Shape_mpq_class_t ps`, `size_t * sz`)
 [`related`]
- 10.77.2.72** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_space_dimension`
 (`ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t ph`, `ppl_dimension_type * m`)
 [`related`]

- 10.77.2.73** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_strictly_contains_Pointset_Powerset_BD_Shape_mpq_class (ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t y)` `[related]`
- 10.77.2.74** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_time_elapse_assign (ppl_Pointset_Powerset_BD_Shape_mpq_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t y)` `[related]`
- 10.77.2.75** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_topological_closure_assign (ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph)` `[related]`
- 10.77.2.76** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_total_memory_in_bytes (ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t ps, size_t * sz)` `[related]`
- 10.77.2.77** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_unconstrain_space_dimension (ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_dimension_type var)` `[related]`
- 10.77.2.78** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_unconstrain_space_dimensions (ppl_Pointset_Powerset_BD_Shape_mpq_class_t ph, ppl_dimension_type ds[], size_t n)` `[related]`
- 10.77.2.79** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_upper_bound_assign (ppl_Pointset_Powerset_BD_Shape_mpq_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t y)` `[related]`
- 10.77.2.80** `int ppl_Pointset_Powerset_BD_Shape_mpq_class_upper_bound_assign_if_exact (ppl_Pointset_Powerset_BD_Shape_mpq_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpq_class_t y)` `[related]`

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.78 [ppl_Pointset_Powerset_BD_Shape_mpz_class_const_iterator_tag](#) Interface Reference

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_BD_Shape_mpz_class_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl\_new\_Pointset\_Powerset\_BD\_Shape\_mpz\_class\_const\_iterator (ppl_Pointset_Powerset_BD_Shape_mpz_class_const_iterator_t *pit)`
- `int ppl\_new\_Pointset\_Powerset\_BD\_Shape\_mpz\_class\_const\_iterator\_from\_const\_iterator (ppl_Pointset_Powerset_BD_Shape_mpz_class_const_iterator_t *px, ppl_const_Pointset_Powerset_BD_Shape_mpz_class_const_iterator_t y)`
- `int ppl\_Pointset\_Powerset\_BD\_Shape\_mpz\_class\_const\_iterator\_begin (ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t ps, ppl_Pointset_Powerset_BD_Shape_mpz_class_const_iterator_t psit)`
- `int ppl\_Pointset\_Powerset\_BD\_Shape\_mpz\_class\_const\_iterator\_end (ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t ps, ppl_Pointset_Powerset_BD_Shape_mpz_class_const_iterator_t psit)`
- `int ppl\_Pointset\_Powerset\_BD\_Shape\_mpz\_class\_const\_iterator\_equal\_test (ppl_const_Pointset_Powerset_BD_Shape_mpz_class_const_iterator_t x, ppl_const_Pointset_Powerset_BD_Shape_mpz_class_const_iterator_t y)`
- `int ppl\_Pointset\_Powerset\_BD\_Shape\_mpz\_class\_const\_iterator\_increment (ppl_Pointset_Powerset_BD_Shape_mpz_class_const_iterator_t psit)`
- `int ppl\_Pointset\_Powerset\_BD\_Shape\_mpz\_class\_const\_iterator\_decrement (ppl_Pointset_Powerset_BD_Shape_mpz_class_const_iterator_t psit)`
- `int ppl\_Pointset\_Powerset\_BD\_Shape\_mpz\_class\_const\_iterator\_dereference (ppl_const_Pointset_Powerset_BD_Shape_mpz_class_const_iterator_t ps, ppl_const_BD_Shape_mpz_class_t *d)`
- `int ppl\_delete\_Pointset\_Powerset\_BD\_Shape\_mpz\_class\_const\_iterator (ppl_const_Pointset_Powerset_BD_Shape_mpz_class_const_iterator_t psit)`

10.78.1 Detailed Description

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_BD_Shape_mpz_class_tag](#).

10.78.2 Friends And Related Function Documentation

- 10.78.2.1** `int ppl\_delete\_Pointset\_Powerset\_BD\_Shape\_mpz\_class\_const\_iterator (ppl_const_Pointset_Powerset_BD_Shape_mpz_class_const_iterator_t psit)`
[related]

- 10.78.2.2 `int ppl_new_Pointset_Powerset_BD_Shape_mpz_class_const_iterator`
 (`ppl_Pointset_Powerset_BD_Shape_mpz_class_const_iterator_t * pit`) [`related`]
- 10.78.2.3 `int ppl_new_Pointset_Powerset_BD_Shape_mpz_class_const_iterator_from_const_iterator`
 (`ppl_Pointset_Powerset_BD_Shape_mpz_class_const_iterator_t * px`,
`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_const_iterator_t y`) [`related`]
- 10.78.2.4 `int ppl_Pointset_Powerset_BD_Shape_mpz_class_const_iterator_begin`
 (`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t ps`,
`ppl_Pointset_Powerset_BD_Shape_mpz_class_const_iterator_t psit`) [`related`]
- 10.78.2.5 `int ppl_Pointset_Powerset_BD_Shape_mpz_class_const_iterator_decrement`
 (`ppl_Pointset_Powerset_BD_Shape_mpz_class_const_iterator_t psit`) [`related`]
- 10.78.2.6 `int ppl_Pointset_Powerset_BD_Shape_mpz_class_const_iterator_dereference`
 (`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_const_iterator_t ps`,
`ppl_const_BD_Shape_mpz_class_t * d`) [`related`]
- 10.78.2.7 `int ppl_Pointset_Powerset_BD_Shape_mpz_class_const_iterator_end`
 (`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t ps`,
`ppl_Pointset_Powerset_BD_Shape_mpz_class_const_iterator_t psit`) [`related`]
- 10.78.2.8 `int ppl_Pointset_Powerset_BD_Shape_mpz_class_const_iterator_equal_test`
 (`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_const_iterator_t x`,
`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_const_iterator_t y`) [`related`]
- 10.78.2.9 `int ppl_Pointset_Powerset_BD_Shape_mpz_class_const_iterator_increment`
 (`ppl_Pointset_Powerset_BD_Shape_mpz_class_const_iterator_t psit`) [`related`]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.79 `ppl_Pointset_Powerset_BD_Shape_mpz_class_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a `ppl_Pointset_Powerset_BD_Shape_mpz_class_tag`.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_BD_Shape_mpz_class_iterator` (`ppl_Pointset_Powerset_BD_Shape_mpz_class_iterator_t *pit`)
- `int ppl_new_Pointset_Powerset_BD_Shape_mpz_class_iterator_from_iterator` (`ppl_Pointset_Powerset_BD_Shape_mpz_class_iterator_t *px`, `ppl_const_Pointset_Powerset_BD_Shape_mpz_class_iterator_t y`)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_iterator_begin` (`ppl_Pointset_Powerset_BD_Shape_mpz_class_t ps`, `ppl_Pointset_Powerset_BD_Shape_mpz_class_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_iterator_end` (`ppl_Pointset_Powerset_BD_Shape_mpz_class_t ps`, `ppl_Pointset_Powerset_BD_Shape_mpz_class_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_iterator_equal_test` (`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_iterator_t x`, `ppl_const_Pointset_Powerset_BD_Shape_mpz_class_iterator_t y`)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_iterator_increment` (`ppl_Pointset_Powerset_BD_Shape_mpz_class_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_iterator_decrement` (`ppl_Pointset_Powerset_BD_Shape_mpz_class_iterator_t psit`)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_iterator_dereference` (`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_iterator_t ps`, `ppl_const_BD_Shape_mpz_class_t *d`)
- `int ppl_delete_Pointset_Powerset_BD_Shape_mpz_class_iterator` (`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_iterator_t psit`)

10.79.1 Detailed Description

Types and functions for iterating on the disjuncts of a `ppl_Pointset_Powerset_BD_Shape_mpz_class_tag`.

10.79.2 Friends And Related Function Documentation

10.79.2.1 `int ppl_delete_Pointset_Powerset_BD_Shape_mpz_class_iterator`
(`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_iterator_t psit`) [**related**]

10.79.2.2 `int ppl_new_Pointset_Powerset_BD_Shape_mpz_class_iterator`
(`ppl_Pointset_Powerset_BD_Shape_mpz_class_iterator_t *pit`) [**related**]

- 10.79.2.3** `int ppl_new_Pointset_Powerset_BD_Shape_mpz_class_iterator_from_iterator`
 (`ppl_Pointset_Powerset_BD_Shape_mpz_class_iterator_t * px,`
`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_iterator_t y`) [`related`]
- 10.79.2.4** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_iterator_begin`
 (`ppl_Pointset_Powerset_BD_Shape_mpz_class_t ps,` `ppl_Pointset_Powerset_BD_Shape_mpz_class_iterator_t psit`) [`related`]
- 10.79.2.5** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_iterator_decrement`
 (`ppl_Pointset_Powerset_BD_Shape_mpz_class_iterator_t psit`) [`related`]
- 10.79.2.6** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_iterator_dereference`
 (`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_iterator_t ps,`
`ppl_const_BD_Shape_mpz_class_t * d`) [`related`]
- 10.79.2.7** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_iterator_end`
 (`ppl_Pointset_Powerset_BD_Shape_mpz_class_t ps,` `ppl_Pointset_Powerset_BD_Shape_mpz_class_iterator_t psit`) [`related`]
- 10.79.2.8** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_iterator_equal_test`
 (`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_iterator_t x,`
`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_iterator_t y`) [`related`]
- 10.79.2.9** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_iterator_increment`
 (`ppl_Pointset_Powerset_BD_Shape_mpz_class_iterator_t psit`) [`related`]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.80 ppl_Pointset_Powerset_BD_Shape_mpz_class_tag Interface Reference

Types and functions for [ppl_Pointset_Powerset_BD_Shape_mpz_class_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Pointset_Powerset_BD_Shape_mpz_class` (`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t` ph)
- `int ppl_new_Pointset_Powerset_BD_Shape_mpz_class_from_space_dimension` (`ppl_Pointset_Powerset_BD_Shape_mpz_class_t` *pph, `ppl_dimension_type` d, int empty)
- `int ppl_new_Pointset_Powerset_BD_Shape_mpz_class_from_Pointset_Powerset_BD_Shape_mpz_class` (`ppl_Pointset_Powerset_BD_Shape_mpz_class_t` *pph, `ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t` ph)
- `int ppl_new_Pointset_Powerset_BD_Shape_mpz_class_from_BD_Shape_mpz_class` (`ppl_Pointset_Powerset_BD_Shape_mpz_class_t` *pph, `ppl_const_BD_Shape_mpz_class_t` ph)
- `int ppl_new_Pointset_Powerset_BD_Shape_mpz_class_from_Pointset_Powerset_BD_Shape_mpz_class_with_complexity` (`ppl_Pointset_Powerset_BD_Shape_mpz_class_t` *pph, `ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t` ph, int complexity)
- `int ppl_new_Pointset_Powerset_BD_Shape_mpz_class_from_BD_Shape_mpz_class_with_complexity` (`ppl_Pointset_Powerset_BD_Shape_mpz_class_t` *pph, `ppl_const_BD_Shape_mpz_class_t` ph, int complexity)
- `int ppl_new_Pointset_Powerset_BD_Shape_mpz_class_from_Constraint_System` (`ppl_Pointset_Powerset_BD_Shape_mpz_class_t` *pph, `ppl_const_Constraint_System_t` cs)
- `int ppl_new_Pointset_Powerset_BD_Shape_mpz_class_from_Congruence_System` (`ppl_Pointset_Powerset_BD_Shape_mpz_class_t` *pph, `ppl_const_Congruence_System_t` cs)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_space_dimension` (`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t` ph, `ppl_dimension_type` *m)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_affine_dimension` (`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t` ph, `ppl_dimension_type` *m)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_relation_with_Constraint` (`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t` ph, `ppl_const_Constraint_t` c)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_relation_with_Generator` (`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t` ph, `ppl_const_Generator_t` c)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_relation_with_Congruence` (`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t` ph, `ppl_const_Congruence_t` c)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_is_empty` (`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t` ph)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_is_universe` (`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t` ph)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_is_bounded` (`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t` ph)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_contains_integer_point` (`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t` ph)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_is_topologically_closed` (`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t` ph)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_is_discrete` (`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t` ph)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_topological_closure_assign` (`ppl_Pointset_Powerset_BD_Shape_mpz_class_t` ph)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_pairwise_reduce` (`ppl_Pointset_Powerset_BD_Shape_mpz_class_t` ph)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_omega_reduce` (`ppl_Pointset_Powerset_BD_Shape_mpz_class_t` ph)

- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_bounds_from_above](#) (ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_bounds_from_below](#) (ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_maximize](#) (ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_minimize](#) (ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_maximize_with_point](#) (ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_minimize_with_point](#) (ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_contains_Pointset_Powerset_BD_Shape_mpz_class](#) (ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t y)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_strictly_contains_Pointset_Powerset_BD_Shape_mpz_class](#) (ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t y)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_is_disjoint_from_Pointset_Powerset_BD_Shape_mpz_class](#) (ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t y)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_geometrically_covers_Pointset_Powerset_BD_Shape_mpz_class](#) (ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t y)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_geometrically_equals_Pointset_Powerset_BD_Shape_mpz_class](#) (ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t y)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_equals_Pointset_Powerset_BD_Shape_mpz_class](#) (ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t y)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_OK](#) (ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t ph)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_add_constraint](#) (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_add_congruence](#) (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_add_constraints](#) (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_add_congruences](#) (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_refine_with_constraint](#) (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_refine_with_congruence](#) (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_refine_with_constraints](#) (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_refine_with_congruences](#) (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_const_Congruence_System_t cs)

- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_intersection_assign](#) (ppl_Pointset_Powerset_BD_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t y)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_upper_bound_assign](#) (ppl_Pointset_Powerset_BD_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t y)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_difference_assign](#) (ppl_Pointset_Powerset_BD_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t y)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_concatenate_assign](#) (ppl_Pointset_Powerset_BD_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t y)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_time_elapse_assign](#) (ppl_Pointset_Powerset_BD_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t y)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_upper_bound_assign_if_exact](#) (ppl_Pointset_Powerset_BD_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t y)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_simplify_using_context_assign](#) (ppl_Pointset_Powerset_BD_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t y)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_constrains](#) (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_unconstrain_space_dimension](#) (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_unconstrain_space_dimensions](#) (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_affine_image](#) (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_affine_preimage](#) (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_bounded_affine_image](#) (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_bounded_affine_preimage](#) (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_generalized_affine_image](#) (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_generalized_affine_preimage](#) (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_generalized_affine_image_lhs_rhs](#) (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_generalized_affine_preimage_lhs_rhs](#) (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_add_space_dimensions_and_embed](#) (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_add_space_dimensions_and_project](#) (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_remove_space_dimensions](#) (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_BD_Shape_mpz_class_remove_higher_space_dimensions](#) (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, [ppl_dimension_type](#) d)

- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_expand_space_dimension` (`ppl_Pointset_Powerset_BD_Shape_mpz_class_t` *ph*, `ppl_dimension_type` *d*, `ppl_dimension_type` *m*)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_fold_space_dimensions` (`ppl_Pointset_Powerset_BD_Shape_mpz_class_t` *ph*, `ppl_dimension_type` *ds*[], `size_t` *n*, `ppl_dimension_type` *d*)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_map_space_dimensions` (`ppl_Pointset_Powerset_BD_Shape_mpz_class_t` *ph*, `ppl_dimension_type` *maps*[], `size_t` *n*)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_drop_some_non_integer_points` (`ppl_Pointset_Powerset_BD_Shape_mpz_class_t` *ph*, `int` *complexity*)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_drop_some_non_integer_points_2` (`ppl_Pointset_Powerset_BD_Shape_mpz_class_t` *ph*, `ppl_dimension_type` *ds*[], `size_t` *n*, `int` *complexity*)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_external_memory_in_bytes` (`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t` *ps*, `size_t` **sz*)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_total_memory_in_bytes` (`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t` *ps*, `size_t` **sz*)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_size` (`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t` *ps*, `size_t` **sz*)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_add_disjunct` (`ppl_Pointset_Powerset_BD_Shape_mpz_class_t` *ps*, `ppl_const_BD_Shape_mpz_class_t` *d*)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_drop_disjunct` (`ppl_Pointset_Powerset_BD_Shape_mpz_class_t` *ps*, `ppl_const_Pointset_Powerset_BD_Shape_mpz_class_iterator_t` *cit*, `ppl_Pointset_Powerset_BD_Shape_mpz_class_iterator_t` *it*)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_drop_disjuncts` (`ppl_Pointset_Powerset_BD_Shape_mpz_class_t` *ps*, `ppl_const_Pointset_Powerset_BD_Shape_mpz_class_iterator_t` *first*, `ppl_const_Pointset_Powerset_BD_Shape_mpz_class_iterator_t` *last*)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_BHZ03_H79_BHMZ05_widening_assign` (`ppl_Pointset_Powerset_BD_Shape_mpz_class_t` *x*, `ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t` *y*)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_BHZ03_H79_H79_widening_assign` (`ppl_Pointset_Powerset_BD_Shape_mpz_class_t` *x*, `ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t` *y*)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_BGP99_BHMZ05_extrapolation_assign` (`ppl_Pointset_Powerset_BD_Shape_mpz_class_t` *x*, `ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t` *y*, `int` *disjuncts*)
- `int ppl_Pointset_Powerset_BD_Shape_mpz_class_BGP99_H79_extrapolation_assign` (`ppl_Pointset_Powerset_BD_Shape_mpz_class_t` *x*, `ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t` *y*, `int` *disjuncts*)

10.80.1 Detailed Description

Types and functions for `ppl_Pointset_Powerset_BD_Shape_mpz_class_tag`.

10.80.2 Friends And Related Function Documentation

10.80.2.1 `int ppl_delete_Pointset_Powerset_BD_Shape_mpz_class` (`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t` *ph*) [**related**]

- 10.80.2.2** `int ppl_new_Pointset_Powerset_BD_Shape_mpz_class_from_BD_Shape_mpz_class (ppl_Pointset_Powerset_BD_Shape_mpz_class_t * pph, ppl_const_BD_Shape_mpz_class_t ph)` [**related**]
- 10.80.2.3** `int ppl_new_Pointset_Powerset_BD_Shape_mpz_class_from_BD_Shape_mpz_class_with_complexity (ppl_Pointset_Powerset_BD_Shape_mpz_class_t * pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)` [**related**]
- 10.80.2.4** `int ppl_new_Pointset_Powerset_BD_Shape_mpz_class_from_Congruence_System (ppl_Pointset_Powerset_BD_Shape_mpz_class_t * pph, ppl_const_Congruence_System_t cs)` [**related**]
- 10.80.2.5** `int ppl_new_Pointset_Powerset_BD_Shape_mpz_class_from_Constraint_System (ppl_Pointset_Powerset_BD_Shape_mpz_class_t * pph, ppl_const_Constraint_System_t cs)` [**related**]
- 10.80.2.6** `int ppl_new_Pointset_Powerset_BD_Shape_mpz_class_from_Pointset_Powerset_BD_Shape_mpz_class (ppl_Pointset_Powerset_BD_Shape_mpz_class_t * pph, ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t ph)` [**related**]
- 10.80.2.7** `int ppl_new_Pointset_Powerset_BD_Shape_mpz_class_from_Pointset_Powerset_BD_Shape_mpz_class_with_complexity (ppl_Pointset_Powerset_BD_Shape_mpz_class_t * pph, ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t ph, int complexity)` [**related**]
- 10.80.2.8** `int ppl_new_Pointset_Powerset_BD_Shape_mpz_class_from_space_dimension (ppl_Pointset_Powerset_BD_Shape_mpz_class_t * pph, ppl_dimension_type d, int empty)` [**related**]
- 10.80.2.9** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_add_congruence (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_const_Congruence_t c)` [**related**]

- 10.80.2.10** int ppl_Pointset_Powerset_BD_Shape_mpz_class_add_congruences
(ppl_Pointset_Powerset_BD_Shape_mpz_class_t *ph*, ppl_const_Congruence_System_t *cs*) [**related**]
- 10.80.2.11** int ppl_Pointset_Powerset_BD_Shape_mpz_class_add_constraint
(ppl_Pointset_Powerset_BD_Shape_mpz_class_t *ph*, ppl_const_Constraint_t *c*)
[**related**]
- 10.80.2.12** int ppl_Pointset_Powerset_BD_Shape_mpz_class_add_constraints
(ppl_Pointset_Powerset_BD_Shape_mpz_class_t *ph*, ppl_const_Constraint_System_t *cs*) [**related**]
- 10.80.2.13** int ppl_Pointset_Powerset_BD_Shape_mpz_class_add_disjunct (ppl_Pointset_Powerset_BD_Shape_mpz_class_t *ps*, ppl_const_BD_Shape_mpz_class_t *d*)
[**related**]
- 10.80.2.14** int ppl_Pointset_Powerset_BD_Shape_mpz_class_add_space_dimensions_and_embed
(ppl_Pointset_Powerset_BD_Shape_mpz_class_t *ph*, ppl_dimension_type *d*)
[**related**]
- 10.80.2.15** int ppl_Pointset_Powerset_BD_Shape_mpz_class_add_space_dimensions_and_project
(ppl_Pointset_Powerset_BD_Shape_mpz_class_t *ph*, ppl_dimension_type *d*)
[**related**]
- 10.80.2.16** int ppl_Pointset_Powerset_BD_Shape_mpz_class_affine_dimension
(ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t *ph*, ppl_dimension_type * *m*)
[**related**]
- 10.80.2.17** int ppl_Pointset_Powerset_BD_Shape_mpz_class_affine_image
(ppl_Pointset_Powerset_BD_Shape_mpz_class_t *ph*, ppl_dimension_type *var*,
ppl_const_Linear_Expression_t *le*, ppl_const_Coefficient_t *d*) [**related**]

- 10.80.2.18** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_affine_preimage`
`(ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_dimension_type var,`
`ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.80.2.19** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_BGP99_BHMZ05_-`
`extrapolation_assign (ppl_Pointset_Powerset_BD_Shape_mpz_class_t x,`
`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t y, int disjuncts)` [**related**]
- 10.80.2.20** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_BGP99_H79_-`
`extrapolation_assign (ppl_Pointset_Powerset_BD_Shape_mpz_class_t x,`
`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t y, int disjuncts)` [**related**]
- 10.80.2.21** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_BHZ03_H79_BHMZ05_-`
`widening_assign (ppl_Pointset_Powerset_BD_Shape_mpz_class_t x,`
`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t y)` [**related**]
- 10.80.2.22** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_BHZ03_H79_H79_-`
`widening_assign (ppl_Pointset_Powerset_BD_Shape_mpz_class_t x,`
`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t y)` [**related**]
- 10.80.2.23** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_bounded_affine_image`
`(ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_dimension_type`
`var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub,`
`ppl_const_Coefficient_t d)` [**related**]
- 10.80.2.24** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_bounded_affine_preimage`
`(ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_dimension_type`
`var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub,`
`ppl_const_Coefficient_t d)` [**related**]
- 10.80.2.25** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_bounds_from_above (ppl_const_-`
`Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t le)`
[related]

- 10.80.2.26** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_bounds_from_below (ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t le)` **[related]**
- 10.80.2.27** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_concatenate_assign (ppl_Pointset_Powerset_BD_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t y)` **[related]**
- 10.80.2.28** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_constrains (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_dimension_type var)` **[related]**
- 10.80.2.29** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_contains_integer_point (ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t ph)` **[related]**
- 10.80.2.30** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_contains_Pointset_Powerset_BD_Shape_mpz_class (ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t y)` **[related]**
- 10.80.2.31** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_difference_assign (ppl_Pointset_Powerset_BD_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t y)` **[related]**
- 10.80.2.32** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_drop_disjunct (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ps, ppl_const_Pointset_Powerset_BD_Shape_mpz_class_iterator_t cit, ppl_Pointset_Powerset_BD_Shape_mpz_class_iterator_t it)` **[related]**
- 10.80.2.33** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_drop_disjuncts (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ps, ppl_const_Pointset_Powerset_BD_Shape_mpz_class_iterator_t first, ppl_const_Pointset_Powerset_BD_Shape_mpz_class_iterator_t last)` **[related]**

- 10.80.2.34 `int ppl_Pointset_Powerset_BD_Shape_mpz_class_drop_some_non_integer_points`
(`ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph`, `int complexity`) [**related**]
- 10.80.2.35 `int ppl_Pointset_Powerset_BD_Shape_mpz_class_drop_some_non_integer_points_2`
(`ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph`, `ppl_dimension_type ds[]`, `size_t n`, `int complexity`) [**related**]
- 10.80.2.36 `int ppl_Pointset_Powerset_BD_Shape_mpz_class_equals_Pointset_Powerset_BD_Shape_mpz_class`
(`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t x`, `ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t y`) [**related**]
- 10.80.2.37 `int ppl_Pointset_Powerset_BD_Shape_mpz_class_expand_space_dimension`
(`ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph`, `ppl_dimension_type d`, `ppl_dimension_type m`) [**related**]
- 10.80.2.38 `int ppl_Pointset_Powerset_BD_Shape_mpz_class_external_memory_in_bytes`
(`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t ps`, `size_t * sz`) [**related**]
- 10.80.2.39 `int ppl_Pointset_Powerset_BD_Shape_mpz_class_fold_space_dimensions`
(`ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph`, `ppl_dimension_type ds[]`, `size_t n`, `ppl_dimension_type d`) [**related**]
- 10.80.2.40 `int ppl_Pointset_Powerset_BD_Shape_mpz_class_generalized_affine_image`
(`ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph`, `ppl_dimension_type var`, `enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`) [**related**]
- 10.80.2.41 `int ppl_Pointset_Powerset_BD_Shape_mpz_class_generalized_affine_image_lhs_rhs`
(`ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph`, `ppl_const_Linear_Expression_t lhs`, `enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`) [**related**]

- 10.80.2.42** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_generalized_affine_preimage`
 (`ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph`, `ppl_dimension_type var`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.80.2.43** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_generalized_affine_-`
`preimage_lhs_rhs` (`ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph`,
`ppl_const_Linear_Expression_t lhs`, `enum ppl_enum_Constraint_Type relsym`,
`ppl_const_Linear_Expression_t rhs`) [`related`]
- 10.80.2.44** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_geometrically_covers_-`
`Pointset_Powerset_BD_Shape_mpz_class` (`ppl_const_Pointset_Powerset_BD_-`
`Shape_mpz_class_t x`, `ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t y`)
 [`related`]
- 10.80.2.45** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_geometrically_equals_-`
`Pointset_Powerset_BD_Shape_mpz_class` (`ppl_const_Pointset_Powerset_BD_-`
`Shape_mpz_class_t x`, `ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t y`)
 [`related`]
- 10.80.2.46** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_intersection_assign`
 (`ppl_Pointset_Powerset_BD_Shape_mpz_class_t x`, `ppl_const_Pointset_Powerset_-`
`BD_Shape_mpz_class_t y`) [`related`]
- 10.80.2.47** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_is_bounded`
 (`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t ph`) [`related`]
- 10.80.2.48** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_is_discrete`
 (`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t ph`) [`related`]

- 10.80.2.49** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_is_disjoint_from_Pointset_Powerset_BD_Shape_mpz_class (ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t y)` `[related]`
- 10.80.2.50** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_is_empty (ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t ph)` `[related]`
- 10.80.2.51** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_is_topologically_closed (ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t ph)` `[related]`
- 10.80.2.52** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_is_universe (ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t ph)` `[related]`
- 10.80.2.53** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_map_space_dimensions (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_dimension_type maps[], size_t n)` `[related]`
- 10.80.2.54** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_maximize (ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)` `[related]`
- 10.80.2.55** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_maximize_with_point (ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` `[related]`
- 10.80.2.56** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_minimize (ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)` `[related]`

- 10.80.2.57** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_minimize_with_point (ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` [**related**]
- 10.80.2.58** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_OK (ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t ph)` [**related**]
- 10.80.2.59** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_omega_reduce (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph)` [**related**]
- 10.80.2.60** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_pairwise_reduce (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph)` [**related**]
- 10.80.2.61** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_refine_with_congruence (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_const_Congruence_t c)` [**related**]
- 10.80.2.62** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_refine_with_congruences (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_const_Congruence_System_t cs)` [**related**]
- 10.80.2.63** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_refine_with_constraint (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_const_Constraint_t c)` [**related**]
- 10.80.2.64** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_refine_with_constraints (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_const_Constraint_System_t cs)` [**related**]

- 10.80.2.65** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_relation_with_Congruence`
 (`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t ph`, `ppl_const_Congruence_t c`)
 [`related`]
- 10.80.2.66** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_relation_with_Constraint`
 (`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t ph`, `ppl_const_Constraint_t c`)
 [`related`]
- 10.80.2.67** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_relation_with_Generator`
 (`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t ph`, `ppl_const_Generator_t c`)
 [`related`]
- 10.80.2.68** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_remove_higher_space_dimensions`
 (`ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph`, `ppl_dimension_type d`)
 [`related`]
- 10.80.2.69** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_remove_space_dimensions`
 (`ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph`, `ppl_dimension_type ds[]`, `size_t n`) [`related`]
- 10.80.2.70** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_simplify_using_-`
`context_assign` (`ppl_Pointset_Powerset_BD_Shape_mpz_class_t x`,
`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t y`) [`related`]
- 10.80.2.71** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_size` (`ppl_-`
`const_Pointset_Powerset_BD_Shape_mpz_class_t ps`, `size_t * sz`)
 [`related`]
- 10.80.2.72** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_space_dimension`
 (`ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t ph`, `ppl_dimension_type * m`)
 [`related`]

- 10.80.2.73** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_strictly_contains_Pointset_Powerset_BD_Shape_mpz_class (ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t y)` `[related]`
- 10.80.2.74** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_time_elapse_assign (ppl_Pointset_Powerset_BD_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t y)` `[related]`
- 10.80.2.75** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_topological_closure_assign (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph)` `[related]`
- 10.80.2.76** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_total_memory_in_bytes (ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t ps, size_t * sz)` `[related]`
- 10.80.2.77** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_unconstrain_space_dimension (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_dimension_type var)` `[related]`
- 10.80.2.78** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_unconstrain_space_dimensions (ppl_Pointset_Powerset_BD_Shape_mpz_class_t ph, ppl_dimension_type ds[], size_t n)` `[related]`
- 10.80.2.79** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_upper_bound_assign (ppl_Pointset_Powerset_BD_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t y)` `[related]`
- 10.80.2.80** `int ppl_Pointset_Powerset_BD_Shape_mpz_class_upper_bound_assign_if_exact (ppl_Pointset_Powerset_BD_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_BD_Shape_mpz_class_t y)` `[related]`

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.81 [ppl_Pointset_Powerset_C_Polyhedron_const_iterator_tag](#) Interface Reference

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_C_Polyhedron_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

Construction, Initialization and Destruction

- `int ppl\_new\_Pointset\_Powerset\_C\_Polyhedron\_const\_iterator (ppl\_Pointset\_Powerset\_C\_Polyhedron\_const\_iterator\_t *pit)`
Builds a new 'const iterator' and writes a handle to it at address `pit`.
- `int ppl\_new\_Pointset\_Powerset\_C\_Polyhedron\_const\_iterator\_from\_const\_iterator (ppl\_Pointset\_Powerset\_C\_Polyhedron\_const\_iterator\_t *pit, ppl\_const\_Pointset\_Powerset\_C\_Polyhedron\_const\_iterator\_t y)`
Builds a copy of `y` and writes a handle to it at address `pit`.
- `int ppl\_Pointset\_Powerset\_C\_Polyhedron\_const\_iterator\_begin (ppl\_const\_Pointset\_Powerset\_C\_Polyhedron\_t ps, ppl\_Pointset\_Powerset\_C\_Polyhedron\_const\_iterator\_t psit)`
Assigns to `psit` a const iterator "pointing" to the beginning of the sequence of disjuncts of `ps`.
- `int ppl\_Pointset\_Powerset\_C\_Polyhedron\_const\_iterator\_end (ppl\_const\_Pointset\_Powerset\_C\_Polyhedron\_t ps, ppl\_Pointset\_Powerset\_C\_Polyhedron\_const\_iterator\_t psit)`
Assigns to `psit` a const iterator "pointing" past the end of the sequence of disjuncts of `ps`.
- `int ppl\_delete\_Pointset\_Powerset\_C\_Polyhedron\_const\_iterator (ppl\_const\_Pointset\_Powerset\_C\_Polyhedron\_const\_iterator\_t it)`
Invalidates the handle `it`: this makes sure the corresponding resources will eventually be released.

Dereferencing, Increment, Decrement and Equality Testing

- `int ppl\_Pointset\_Powerset\_C\_Polyhedron\_const\_iterator\_dereference (ppl\_const\_Pointset\_Powerset\_C\_Polyhedron\_const\_iterator\_t it, ppl\_const\_Polyhedron\_t *d)`
Dereferences `it` writing a const handle to the resulting disjunct at address `d`.
- `int ppl\_Pointset\_Powerset\_C\_Polyhedron\_const\_iterator\_increment (ppl\_Pointset\_Powerset\_C\_Polyhedron\_const\_iterator\_t it)`
Increments `it` so that it "points" to the next disjunct.
- `int ppl\_Pointset\_Powerset\_C\_Polyhedron\_const\_iterator\_decrement (ppl\_Pointset\_Powerset\_C\_Polyhedron\_const\_iterator\_t it)`
Decrements `it` so that it "points" to the previous disjunct.
- `int ppl\_Pointset\_Powerset\_C\_Polyhedron\_const\_iterator\_equal\_test (ppl\_const\_Pointset\_Powerset\_C\_Polyhedron\_const\_iterator\_t x, ppl\_const\_Pointset\_Powerset\_C\_Polyhedron\_const\_iterator\_t y)`

Returns a positive integer if the iterators corresponding to x and y are equal; returns 0 if they are different.

10.81.1 Detailed Description

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_C_Polyhedron_tag](#).

10.81.2 Friends And Related Function Documentation

10.81.2.1 `int ppl_delete_Pointset_Powerset_C_Polyhedron_const_iterator
(ppl_const_Pointset_Powerset_C_Polyhedron_const_iterator_t it) [related]`

Invalidates the handle `it`: this makes sure the corresponding resources will eventually be released.

10.81.2.2 `int ppl_new_Pointset_Powerset_C_Polyhedron_const_iterator
(ppl_Pointset_Powerset_C_Polyhedron_const_iterator_t * pit) [related]`

Builds a new 'const iterator' and writes a handle to it at address `pit`.

10.81.2.3 `int ppl_new_Pointset_Powerset_C_Polyhedron_const_iterator_from_-
const_iterator (ppl_Pointset_Powerset_C_Polyhedron_const_iterator_t * pit,
ppl_const_Pointset_Powerset_C_Polyhedron_const_iterator_t y) [related]`

Builds a copy of `y` and writes a handle to it at address `pit`.

10.81.2.4 `int ppl_Pointset_Powerset_C_Polyhedron_const_iterator_begin (ppl_const_Pointset_-
Powerset_C_Polyhedron_t ps, ppl_Pointset_Powerset_C_Polyhedron_const_iterator_t
psit) [related]`

Assigns to `psit` a const iterator "pointing" to the beginning of the sequence of disjuncts of `ps`.

10.81.2.5 `int ppl_Pointset_Powerset_C_Polyhedron_const_iterator_decrement
(ppl_Pointset_Powerset_C_Polyhedron_const_iterator_t it) [related]`

Decrements `it` so that it "points" to the previous disjunct.

10.81.2.6 `int ppl_Pointset_Powerset_C_Polyhedron_const_iterator_dereference
(ppl_const_Pointset_Powerset_C_Polyhedron_const_iterator_t it,
ppl_const_Polyhedron_t * d) [related]`

Dereferences `it` writing a const handle to the resulting disjunct at address `d`.

Warning

On exit, the disjunct `d` is still owned by the powerset object: any function call on the owning powerset object may invalidate it. Moreover, `d` should **not** be deleted directly: its resources will be released when deleting the owning powerset.

10.81.2.7 `int ppl_Pointset_Powerset_C_Polyhedron_const_iterator_end (ppl_const_Pointset_Powerset_C_Polyhedron_t ps, ppl_Pointset_Powerset_C_Polyhedron_const_iterator_t psit) [related]`

Assigns to `psit` a const iterator "pointing" past the end of the sequence of disjuncts of `ps`.

10.81.2.8 `int ppl_Pointset_Powerset_C_Polyhedron_const_iterator_equal_test (ppl_const_Pointset_Powerset_C_Polyhedron_const_iterator_t x, ppl_const_Pointset_Powerset_C_Polyhedron_const_iterator_t y) [related]`

Returns a positive integer if the iterators corresponding to `x` and `y` are equal; returns 0 if they are different.

10.81.2.9 `int ppl_Pointset_Powerset_C_Polyhedron_const_iterator_increment (ppl_Pointset_Powerset_C_Polyhedron_const_iterator_t it) [related]`

Increments `it` so that it "points" to the next disjunct.

The documentation for this interface was generated from the following files:

- [ppl_c.h](#)
- [C_interface.dox](#)

10.82 ppl_Pointset_Powerset_C_Polyhedron_iterator_tag Interface Reference

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_C_Polyhedron_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

Construction, Initialization and Destruction

- `int ppl_new_Pointset_Powerset_C_Polyhedron_iterator (ppl_Pointset_Powerset_C_Polyhedron_iterator_t *pit)`
Builds a new 'iterator' and writes a handle to it at address `pit`.

- `int ppl_new_Pointset_Powerset_C_Polyhedron_iterator_from_iterator` (`ppl_Pointset_Powerset_C_Polyhedron_iterator_t *pit`, `ppl_const_Pointset_Powerset_C_Polyhedron_iterator_t y`)
Builds a copy of `y` and writes a handle to it at address `pit`.
- `int ppl_Pointset_Powerset_C_Polyhedron_iterator_begin` (`ppl_Pointset_Powerset_C_Polyhedron_t ps`, `ppl_Pointset_Powerset_C_Polyhedron_iterator_t psit`)
Assigns to `psit` an iterator "pointing" to the beginning of the sequence of disjuncts of `ps`.
- `int ppl_Pointset_Powerset_C_Polyhedron_iterator_end` (`ppl_Pointset_Powerset_C_Polyhedron_t ps`, `ppl_Pointset_Powerset_C_Polyhedron_iterator_t psit`)
Assigns to `psit` an iterator "pointing" past the end of the sequence of disjuncts of `ps`.
- `int ppl_delete_Pointset_Powerset_C_Polyhedron_iterator` (`ppl_const_Pointset_Powerset_C_Polyhedron_iterator_t it`)
Invalidates the handle `it`: this makes sure the corresponding resources will eventually be released.

Dereferencing, Increment, Decrement and Equality Testing

- `int ppl_Pointset_Powerset_C_Polyhedron_iterator_dereference` (`ppl_const_Pointset_Powerset_C_Polyhedron_iterator_t it`, `ppl_const_Polyhedron_t *d`)
Dereferences `it` writing a const handle to the resulting disjunct at address `d`.
- `int ppl_Pointset_Powerset_C_Polyhedron_iterator_increment` (`ppl_Pointset_Powerset_C_Polyhedron_iterator_t it`)
Increments `it` so that it "points" to the next disjunct.
- `int ppl_Pointset_Powerset_C_Polyhedron_iterator_decrement` (`ppl_Pointset_Powerset_C_Polyhedron_iterator_t it`)
Decrements `it` so that it "points" to the previous disjunct.
- `int ppl_Pointset_Powerset_C_Polyhedron_iterator_equal_test` (`ppl_const_Pointset_Powerset_C_Polyhedron_iterator_t x`, `ppl_const_Pointset_Powerset_C_Polyhedron_iterator_t y`)
Returns a positive integer if the iterators corresponding to `x` and `y` are equal; returns 0 if they are different.

10.82.1 Detailed Description

Types and functions for iterating on the disjuncts of a `ppl_Pointset_Powerset_C_Polyhedron_tag`.

10.82.2 Friends And Related Function Documentation

10.82.2.1 `int ppl_delete_Pointset_Powerset_C_Polyhedron_iterator` (`ppl_const_Pointset_Powerset_C_Polyhedron_iterator_t it`) [**related**]

Invalidates the handle `it`: this makes sure the corresponding resources will eventually be released.

10.82.2.2 `int ppl_new_Pointset_Powerset_C_Polyhedron_iterator` (`ppl_Pointset_Powerset_C_Polyhedron_iterator_t *pit`) [**related**]

Builds a new ‘iterator’ and writes a handle to it at address `pit`.

10.82.2.3 `int ppl_new_Pointset_Powerset_C_Polyhedron_iterator_from_iterator (ppl_Pointset_Powerset_C_Polyhedron_iterator_t * pit, ppl_const_Pointset_Powerset_C_Polyhedron_iterator_t y)` [**related**]

Builds a copy of `y` and writes a handle to it at address `pit`.

10.82.2.4 `int ppl_Pointset_Powerset_C_Polyhedron_iterator_begin (ppl_Pointset_Powerset_C_Polyhedron_t ps, ppl_Pointset_Powerset_C_Polyhedron_iterator_t psit)` [**related**]

Assigns to `psit` an iterator "pointing" to the beginning of the sequence of disjuncts of `ps`.

10.82.2.5 `int ppl_Pointset_Powerset_C_Polyhedron_iterator_decrement (ppl_Pointset_Powerset_C_Polyhedron_iterator_t it)` [**related**]

Decrements `it` so that it "points" to the previous disjunct.

10.82.2.6 `int ppl_Pointset_Powerset_C_Polyhedron_iterator_dereference (ppl_const_Pointset_Powerset_C_Polyhedron_iterator_t it, ppl_const_Polyhedron_t * d)` [**related**]

Dereferences `it` writing a const handle to the resulting disjunct at address `d`.

Note

Even though `it` is an non-const iterator, dereferencing it results in a handle to a **const** disjunct. This is because mutable iterators are meant to allow for the modification of the sequence of disjuncts (e.g., by dropping elements), while preventing direct modifications of the disjuncts they point to.

Warning

On exit, the disjunct `d` is still owned by the powerset object: any function call on the owning powerset object may invalidate it. Moreover, `d` should **not** be deleted directly: its resources will be released when deleting the owning powerset.

10.82.2.7 `int ppl_Pointset_Powerset_C_Polyhedron_iterator_end (ppl_Pointset_Powerset_C_Polyhedron_t ps, ppl_Pointset_Powerset_C_Polyhedron_iterator_t psit)` [**related**]

Assigns to `psit` an iterator "pointing" past the end of the sequence of disjuncts of `ps`.

10.82.2.8 `int ppl_Pointset_Powerset_C_Polyhedron_iterator_equal_test`
 (`ppl_const_Pointset_Powerset_C_Polyhedron_iterator_t x`,
`ppl_const_Pointset_Powerset_C_Polyhedron_iterator_t y`) [**related**]

Returns a positive integer if the iterators corresponding to `x` and `y` are equal; returns 0 if they are different.

10.82.2.9 `int ppl_Pointset_Powerset_C_Polyhedron_iterator_increment`
 (`ppl_Pointset_Powerset_C_Polyhedron_iterator_t it`) [**related**]

Increments `it` so that it "points" to the next disjunct.

The documentation for this interface was generated from the following files:

- [ppl_c.h](#)
- [C_interface.dox](#)

10.83 ppl_Pointset_Powerset_C_Polyhedron_tag Interface Reference

Types and functions for the Pointset_Powerset of C_Polyhedron objects.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Pointset_Powerset_C_Polyhedron` (`ppl_const_Pointset_Powerset_C_Polyhedron_t ph`)
- `int ppl_new_Pointset_Powerset_C_Polyhedron_from_space_dimension` (`ppl_Pointset_Powerset_C_Polyhedron_t *pph`, `ppl_dimension_type d`, `int empty`)
- `int ppl_new_Pointset_Powerset_C_Polyhedron_from_Pointset_Powerset_C_Polyhedron` (`ppl_Pointset_Powerset_C_Polyhedron_t *pph`, `ppl_const_Pointset_Powerset_C_Polyhedron_t ph`)
- `int ppl_new_Pointset_Powerset_C_Polyhedron_from_C_Polyhedron` (`ppl_Pointset_Powerset_C_Polyhedron_t *pph`, `ppl_const_Polyhedron_t ph`)
- `int ppl_new_Pointset_Powerset_C_Polyhedron_from_Pointset_Powerset_C_Polyhedron_with_complexity` (`ppl_Pointset_Powerset_C_Polyhedron_t *pph`, `ppl_const_Pointset_Powerset_C_Polyhedron_t ph`, `int complexity`)
- `int ppl_new_Pointset_Powerset_C_Polyhedron_from_C_Polyhedron_with_complexity` (`ppl_Pointset_Powerset_C_Polyhedron_t *pph`, `ppl_const_Polyhedron_t ph`, `int complexity`)
- `int ppl_new_Pointset_Powerset_C_Polyhedron_from_Constraint_System` (`ppl_Pointset_Powerset_C_Polyhedron_t *pph`, `ppl_const_Constraint_System_t cs`)
- `int ppl_new_Pointset_Powerset_C_Polyhedron_from_Congruence_System` (`ppl_Pointset_Powerset_C_Polyhedron_t *pph`, `ppl_const_Congruence_System_t cs`)
- `int ppl_Pointset_Powerset_C_Polyhedron_space_dimension` (`ppl_const_Pointset_Powerset_C_Polyhedron_t ph`, `ppl_dimension_type *m`)
- `int ppl_Pointset_Powerset_C_Polyhedron_affine_dimension` (`ppl_const_Pointset_Powerset_C_Polyhedron_t ph`, `ppl_dimension_type *m`)
- `int ppl_Pointset_Powerset_C_Polyhedron_relation_with_Constraint` (`ppl_const_Pointset_Powerset_C_Polyhedron_t ph`, `ppl_const_Constraint_t c`)

- int [ppl_Pointset_Powerset_C_Polyhedron_relation_with_Generator](#) (ppl_const_Pointset_Powerset_C_Polyhedron_t ph, ppl_const_Generator_t c)
- int [ppl_Pointset_Powerset_C_Polyhedron_relation_with_Congruence](#) (ppl_const_Pointset_Powerset_C_Polyhedron_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_C_Polyhedron_is_empty](#) (ppl_const_Pointset_Powerset_C_Polyhedron_t ph)
- int [ppl_Pointset_Powerset_C_Polyhedron_is_universe](#) (ppl_const_Pointset_Powerset_C_Polyhedron_t ph)
- int [ppl_Pointset_Powerset_C_Polyhedron_is_bounded](#) (ppl_const_Pointset_Powerset_C_Polyhedron_t ph)
- int [ppl_Pointset_Powerset_C_Polyhedron_contains_integer_point](#) (ppl_const_Pointset_Powerset_C_Polyhedron_t ph)
- int [ppl_Pointset_Powerset_C_Polyhedron_is_topologically_closed](#) (ppl_const_Pointset_Powerset_C_Polyhedron_t ph)
- int [ppl_Pointset_Powerset_C_Polyhedron_is_discrete](#) (ppl_const_Pointset_Powerset_C_Polyhedron_t ph)
- int [ppl_Pointset_Powerset_C_Polyhedron_topological_closure_assign](#) (ppl_Pointset_Powerset_C_Polyhedron_t ph)
- int [ppl_Pointset_Powerset_C_Polyhedron_omega_reduce](#) (ppl_Pointset_Powerset_C_Polyhedron_t ph)
- int [ppl_Pointset_Powerset_C_Polyhedron_bounds_from_above](#) (ppl_const_Pointset_Powerset_C_Polyhedron_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_C_Polyhedron_bounds_from_below](#) (ppl_const_Pointset_Powerset_C_Polyhedron_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_C_Polyhedron_maximize](#) (ppl_const_Pointset_Powerset_C_Polyhedron_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_C_Polyhedron_minimize](#) (ppl_const_Pointset_Powerset_C_Polyhedron_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_C_Polyhedron_maximize_with_point](#) (ppl_const_Pointset_Powerset_C_Polyhedron_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_C_Polyhedron_minimize_with_point](#) (ppl_const_Pointset_Powerset_C_Polyhedron_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_C_Polyhedron_contains_Pointset_Powerset_C_Polyhedron](#) (ppl_const_Pointset_Powerset_C_Polyhedron_t x, ppl_const_Pointset_Powerset_C_Polyhedron_t y)
- int [ppl_Pointset_Powerset_C_Polyhedron_strictly_contains_Pointset_Powerset_C_Polyhedron](#) (ppl_const_Pointset_Powerset_C_Polyhedron_t x, ppl_const_Pointset_Powerset_C_Polyhedron_t y)
- int [ppl_Pointset_Powerset_C_Polyhedron_is_disjoint_from_Pointset_Powerset_C_Polyhedron](#) (ppl_const_Pointset_Powerset_C_Polyhedron_t x, ppl_const_Pointset_Powerset_C_Polyhedron_t y)
- int [ppl_Pointset_Powerset_C_Polyhedron_equals_Pointset_Powerset_C_Polyhedron](#) (ppl_const_Pointset_Powerset_C_Polyhedron_t x, ppl_const_Pointset_Powerset_C_Polyhedron_t y)
- int [ppl_Pointset_Powerset_C_Polyhedron_OK](#) (ppl_const_Pointset_Powerset_C_Polyhedron_t ph)
- int [ppl_Pointset_Powerset_C_Polyhedron_add_constraint](#) (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_C_Polyhedron_add_congruence](#) (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_const_Congruence_t c)

- int [ppl_Pointset_Powerset_C_Polyhedron_add_constraints](#) (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_C_Polyhedron_add_congruences](#) (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_C_Polyhedron_refine_with_constraint](#) (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_C_Polyhedron_refine_with_congruence](#) (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_C_Polyhedron_refine_with_constraints](#) (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_C_Polyhedron_refine_with_congruences](#) (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_C_Polyhedron_intersection_assign](#) (ppl_Pointset_Powerset_C_Polyhedron_t x, ppl_const_Pointset_Powerset_C_Polyhedron_t y)
- int [ppl_Pointset_Powerset_C_Polyhedron_upper_bound_assign](#) (ppl_Pointset_Powerset_C_Polyhedron_t x, ppl_const_Pointset_Powerset_C_Polyhedron_t y)
- int [ppl_Pointset_Powerset_C_Polyhedron_difference_assign](#) (ppl_Pointset_Powerset_C_Polyhedron_t x, ppl_const_Pointset_Powerset_C_Polyhedron_t y)
- int [ppl_Pointset_Powerset_C_Polyhedron_concatenate_assign](#) (ppl_Pointset_Powerset_C_Polyhedron_t x, ppl_const_Pointset_Powerset_C_Polyhedron_t y)
- int [ppl_Pointset_Powerset_C_Polyhedron_time_elapse_assign](#) (ppl_Pointset_Powerset_C_Polyhedron_t x, ppl_const_Pointset_Powerset_C_Polyhedron_t y)
- int [ppl_Pointset_Powerset_C_Polyhedron_upper_bound_assign_if_exact](#) (ppl_Pointset_Powerset_C_Polyhedron_t x, ppl_const_Pointset_Powerset_C_Polyhedron_t y)
- int [ppl_Pointset_Powerset_C_Polyhedron_simplify_using_context_assign](#) (ppl_Pointset_Powerset_C_Polyhedron_t x, ppl_const_Pointset_Powerset_C_Polyhedron_t y)
- int [ppl_Pointset_Powerset_C_Polyhedron_constrains](#) (ppl_Pointset_Powerset_C_Polyhedron_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_C_Polyhedron_unconstrain_space_dimension](#) (ppl_Pointset_Powerset_C_Polyhedron_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_C_Polyhedron_unconstrain_space_dimensions](#) (ppl_Pointset_Powerset_C_Polyhedron_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_C_Polyhedron_affine_image](#) (ppl_Pointset_Powerset_C_Polyhedron_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_C_Polyhedron_affine_preimage](#) (ppl_Pointset_Powerset_C_Polyhedron_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_C_Polyhedron_bounded_affine_image](#) (ppl_Pointset_Powerset_C_Polyhedron_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_C_Polyhedron_bounded_affine_preimage](#) (ppl_Pointset_Powerset_C_Polyhedron_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_C_Polyhedron_generalized_affine_image](#) (ppl_Pointset_Powerset_C_Polyhedron_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_C_Polyhedron_generalized_affine_preimage](#) (ppl_Pointset_Powerset_C_Polyhedron_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_C_Polyhedron_generalized_affine_image_lhs_rhs](#) (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)

- int [ppl_Pointset_Powerset_C_Polyhedron_generalized_affine_preimage_lhs_rhs](#) (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_C_Polyhedron_add_space_dimensions_and_embed](#) (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_dimension_type d)
- int [ppl_Pointset_Powerset_C_Polyhedron_add_space_dimensions_and_project](#) (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_dimension_type d)
- int [ppl_Pointset_Powerset_C_Polyhedron_remove_space_dimensions](#) (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_dimension_type ds[], size_t n)
- int [ppl_Pointset_Powerset_C_Polyhedron_remove_higher_space_dimensions](#) (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_dimension_type d)
- int [ppl_Pointset_Powerset_C_Polyhedron_expand_space_dimension](#) (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_dimension_type d, ppl_dimension_type m)
- int [ppl_Pointset_Powerset_C_Polyhedron_fold_space_dimensions](#) (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)
- int [ppl_Pointset_Powerset_C_Polyhedron_map_space_dimensions](#) (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_dimension_type maps[], size_t n)
- int [ppl_Pointset_Powerset_C_Polyhedron_drop_some_non_integer_points](#) (ppl_Pointset_Powerset_C_Polyhedron_t ph, int complexity)
- int [ppl_Pointset_Powerset_C_Polyhedron_drop_some_non_integer_points_2](#) (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_dimension_type ds[], size_t n, int complexity)
- int [ppl_Pointset_Powerset_C_Polyhedron_external_memory_in_bytes](#) (ppl_const_Pointset_Powerset_C_Polyhedron_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_C_Polyhedron_total_memory_in_bytes](#) (ppl_const_Pointset_Powerset_C_Polyhedron_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_C_Polyhedron_BHZ03_BHRZ03_BHRZ03_widening_assign](#) (ppl_Pointset_Powerset_C_Polyhedron_t x, ppl_const_Pointset_Powerset_C_Polyhedron_t y)
- int [ppl_Pointset_Powerset_C_Polyhedron_BHZ03_H79_H79_widening_assign](#) (ppl_Pointset_Powerset_C_Polyhedron_t x, ppl_const_Pointset_Powerset_C_Polyhedron_t y)
- int [ppl_Pointset_Powerset_C_Polyhedron_BGP99_BHRZ03_extrapolation_assign](#) (ppl_Pointset_Powerset_C_Polyhedron_t x, ppl_const_Pointset_Powerset_C_Polyhedron_t y, int disjuncts)
- int [ppl_Pointset_Powerset_C_Polyhedron_BGP99_H79_extrapolation_assign](#) (ppl_Pointset_Powerset_C_Polyhedron_t x, ppl_const_Pointset_Powerset_C_Polyhedron_t y, int disjuncts)

Ad Hoc Functions for Pointset_Powerset domains

- int [ppl_Pointset_Powerset_C_Polyhedron_omega_reduce](#) (ppl_const_Pointset_Powerset_C_Polyhedron_t ps)
Drops from the sequence of disjuncts in ps all the non-maximal elements so that ps is non-redundant.
- int [ppl_Pointset_Powerset_C_Polyhedron_size](#) (ppl_const_Pointset_Powerset_C_Polyhedron_t ps, size_t *sz)
Writes to sz the number of disjuncts in ps.
- int [ppl_Pointset_Powerset_C_Polyhedron_geometrically_covers_Pointset_Powerset_C_Polyhedron](#) (ppl_const_Pointset_Powerset_C_Polyhedron_t x, ppl_const_Pointset_Powerset_C_Polyhedron_t y)
Returns a positive integer if powerset x geometrically covers powerset y; returns 0 otherwise.
- int [ppl_Pointset_Powerset_C_Polyhedron_geometrically_equals_Pointset_Powerset_C_Polyhedron](#) (ppl_const_Pointset_Powerset_C_Polyhedron_t x, ppl_const_Pointset_Powerset_C_Polyhedron_t y)
Returns a positive integer if powerset x is geometrically equal to powerset y; returns 0 otherwise.

- int [ppl_Pointset_Powerset_C_Polyhedron_add_disjunct](#) (ppl_Pointset_Powerset_C_Polyhedron_t ps, ppl_const_Polyhedron_t d)
Adds to ps a copy of disjunct d.
- int [ppl_Pointset_Powerset_C_Polyhedron_drop_disjunct](#) (ppl_Pointset_Powerset_C_Polyhedron_t ps, ppl_const_Pointset_Powerset_C_Polyhedron_iterator_t cit, ppl_Pointset_Powerset_C_Polyhedron_iterator_t it)
Drops from ps the disjunct pointed to by cit, assigning to it an iterator to the disjunct following cit.
- int [ppl_Pointset_Powerset_C_Polyhedron_drop_disjuncts](#) (ppl_Pointset_Powerset_C_Polyhedron_t ps, ppl_const_Pointset_Powerset_C_Polyhedron_iterator_t first, ppl_const_Pointset_Powerset_C_Polyhedron_iterator_t last)
Drops from ps all the disjuncts from first to last (excluded).
- int [ppl_Pointset_Powerset_C_Polyhedron_pairwise_reduce](#) (ppl_Pointset_Powerset_C_Polyhedron_t ps)
Modifies ps by (recursively) merging together the pairs of disjuncts whose upper-bound is the same as their set-theoretical union.

10.83.1 Detailed Description

Types and functions for the Pointset_Powerset of C_Polyhedron objects. Types and functions for [ppl_Pointset_Powerset_C_Polyhedron_tag](#).

The powerset domains can be instantiated by taking as a base domain any fixed semantic geometric description (C and NNC polyhedra, BD and octagonal shapes, boxes and grids). An element of the powerset domain represents a disjunctive collection of base objects (its disjuncts), all having the same space dimension.

Besides the functions that are available in all semantic geometric descriptions (whose documentation is not repeated here), the powerset domain also provides several ad hoc functions. In particular, the iterator types allow for the examination and manipulation of the collection of disjuncts.

10.83.2 Friends And Related Function Documentation

10.83.2.1 int [ppl_delete_Pointset_Powerset_C_Polyhedron](#) (ppl_const_Pointset_Powerset_C_Polyhedron_t ph) [**related**]

10.83.2.2 int [ppl_new_Pointset_Powerset_C_Polyhedron_from_C_Polyhedron](#) (ppl_Pointset_Powerset_C_Polyhedron_t * pph, ppl_const_Polyhedron_t ph) [**related**]

10.83.2.3 int [ppl_new_Pointset_Powerset_C_Polyhedron_from_C_Polyhedron_with_complexity](#) (ppl_Pointset_Powerset_C_Polyhedron_t * pph, ppl_const_Polyhedron_t ph, int complexity) [**related**]

- 10.83.2.4** `int ppl_new_Pointset_Powerset_C_Polyhedron_from_Congruence_System`
 (`ppl_Pointset_Powerset_C_Polyhedron_t * pph`, `ppl_const_Congruence_System_t cs`)
 [`related`]
- 10.83.2.5** `int ppl_new_Pointset_Powerset_C_Polyhedron_from_Constraint_System`
 (`ppl_Pointset_Powerset_C_Polyhedron_t * pph`, `ppl_const_Constraint_System_t cs`)
 [`related`]
- 10.83.2.6** `int ppl_new_Pointset_Powerset_C_Polyhedron_from_Pointset_-`
`Powerset_C_Polyhedron` (`ppl_Pointset_Powerset_C_Polyhedron_t * pph`,
`ppl_const_Pointset_Powerset_C_Polyhedron_t ph`) [`related`]
- 10.83.2.7** `int ppl_new_Pointset_Powerset_C_Polyhedron_from_Pointset_Powerset_C_-`
`Polyhedron_with_complexity` (`ppl_Pointset_Powerset_C_Polyhedron_t * pph`,
`ppl_const_Pointset_Powerset_C_Polyhedron_t ph`, `int complexity`) [`related`]
- 10.83.2.8** `int ppl_new_Pointset_Powerset_C_Polyhedron_from_space_dimension`
 (`ppl_Pointset_Powerset_C_Polyhedron_t * pph`, `ppl_dimension_type d`, `int empty`)
 [`related`]
- 10.83.2.9** `int ppl_Pointset_Powerset_C_Polyhedron_add_congruence` (`ppl_-`
`Pointset_Powerset_C_Polyhedron_t ph`, `ppl_const_Congruence_t c`)
 [`related`]
- 10.83.2.10** `int ppl_Pointset_Powerset_C_Polyhedron_add_congruences` (`ppl_Pointset_-`
`Powerset_C_Polyhedron_t ph`, `ppl_const_Congruence_System_t cs`)
 [`related`]
- 10.83.2.11** `int ppl_Pointset_Powerset_C_Polyhedron_add_constraint` (`ppl_-`
`Pointset_Powerset_C_Polyhedron_t ph`, `ppl_const_Constraint_t c`)
 [`related`]

10.83.2.12 `int ppl_Pointset_Powerset_C_Polyhedron_add_constraints (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_const_Constraint_System_t cs)` `[related]`

10.83.2.13 `int ppl_Pointset_Powerset_C_Polyhedron_add_disjunct (ppl_Pointset_Powerset_C_Polyhedron_t ps, ppl_const_Polyhedron_t d)` `[related]`

Adds to *ps* a copy of disjunct *d*.

10.83.2.14 `int ppl_Pointset_Powerset_C_Polyhedron_add_space_dimensions_and_embed (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_dimension_type d)` `[related]`

10.83.2.15 `int ppl_Pointset_Powerset_C_Polyhedron_add_space_dimensions_and_project (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_dimension_type d)` `[related]`

10.83.2.16 `int ppl_Pointset_Powerset_C_Polyhedron_affine_dimension (ppl_const_Pointset_Powerset_C_Polyhedron_t ph, ppl_dimension_type * m)` `[related]`

10.83.2.17 `int ppl_Pointset_Powerset_C_Polyhedron_affine_image (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` `[related]`

10.83.2.18 `int ppl_Pointset_Powerset_C_Polyhedron_affine_preimage (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` `[related]`

10.83.2.19 `int ppl_Pointset_Powerset_C_Polyhedron_BGP99_BHRZ03_extrapolation_assign (ppl_Pointset_Powerset_C_Polyhedron_t x, ppl_const_Pointset_Powerset_C_Polyhedron_t y, int disjuncts)` `[related]`

- 10.83.2.20 `int ppl_Pointset_Powerset_C_Polyhedron_BGP99_H79_extrapolation_assign (ppl_Pointset_Powerset_C_Polyhedron_t x, ppl_const_Pointset_Powerset_C_Polyhedron_t y, int disjuncts)` [`related`]
- 10.83.2.21 `int ppl_Pointset_Powerset_C_Polyhedron_BHZ03_BHRZ03_BHRZ03_widening_assign (ppl_Pointset_Powerset_C_Polyhedron_t x, ppl_const_Pointset_Powerset_C_Polyhedron_t y)` [`related`]
- 10.83.2.22 `int ppl_Pointset_Powerset_C_Polyhedron_BHZ03_H79_H79_widening_assign (ppl_Pointset_Powerset_C_Polyhedron_t x, ppl_const_Pointset_Powerset_C_Polyhedron_t y)` [`related`]
- 10.83.2.23 `int ppl_Pointset_Powerset_C_Polyhedron_bounded_affine_image (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [`related`]
- 10.83.2.24 `int ppl_Pointset_Powerset_C_Polyhedron_bounded_affine_preimage (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [`related`]
- 10.83.2.25 `int ppl_Pointset_Powerset_C_Polyhedron_bounds_from_above (ppl_const_Pointset_Powerset_C_Polyhedron_t ph, ppl_const_Linear_Expression_t le)` [`related`]
- 10.83.2.26 `int ppl_Pointset_Powerset_C_Polyhedron_bounds_from_below (ppl_const_Pointset_Powerset_C_Polyhedron_t ph, ppl_const_Linear_Expression_t le)` [`related`]
- 10.83.2.27 `int ppl_Pointset_Powerset_C_Polyhedron_concatenate_assign (ppl_Pointset_Powerset_C_Polyhedron_t x, ppl_const_Pointset_Powerset_C_Polyhedron_t y)` [`related`]

10.83.2.28 `int ppl_Pointset_Powerset_C_Polyhedron_constrains (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_dimension_type var)` [**related**]

10.83.2.29 `int ppl_Pointset_Powerset_C_Polyhedron_contains_integer_point (ppl_const_Pointset_Powerset_C_Polyhedron_t ph)` [**related**]

10.83.2.30 `int ppl_Pointset_Powerset_C_Polyhedron_contains_Pointset_Powerset_C_Polyhedron (ppl_const_Pointset_Powerset_C_Polyhedron_t x, ppl_const_Pointset_Powerset_C_Polyhedron_t y)` [**related**]

10.83.2.31 `int ppl_Pointset_Powerset_C_Polyhedron_difference_assign (ppl_Pointset_Powerset_C_Polyhedron_t x, ppl_const_Pointset_Powerset_C_Polyhedron_t y)` [**related**]

10.83.2.32 `int ppl_Pointset_Powerset_C_Polyhedron_drop_disjunct (ppl_Pointset_Powerset_C_Polyhedron_t ps, ppl_const_Pointset_Powerset_C_Polyhedron_iterator_t cit, ppl_Pointset_Powerset_C_Polyhedron_iterator_t it)` [**related**]

Drops from *ps* the disjunct pointed to by *cit*, assigning to *it* an iterator to the disjunct following *cit*.

10.83.2.33 `int ppl_Pointset_Powerset_C_Polyhedron_drop_disjuncts (ppl_Pointset_Powerset_C_Polyhedron_t ps, ppl_const_Pointset_Powerset_C_Polyhedron_iterator_t first, ppl_const_Pointset_Powerset_C_Polyhedron_iterator_t last)` [**related**]

Drops from *ps* all the disjuncts from *first* to *last* (excluded).

10.83.2.34 `int ppl_Pointset_Powerset_C_Polyhedron_drop_some_non_integer_points (ppl_Pointset_Powerset_C_Polyhedron_t ph, int complexity)` [**related**]

10.83.2.35 `int ppl_Pointset_Powerset_C_Polyhedron_drop_some_non_integer_points_2 (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_dimension_type ds[], size_t n, int complexity)` [**related**]

- 10.83.2.36 `int ppl_Pointset_Powerset_C_Polyhedron_equals_Pointset_Powerset_C_Polyhedron (ppl_const_Pointset_Powerset_C_Polyhedron_t x, ppl_const_Pointset_Powerset_C_Polyhedron_t y)` [**related**]
- 10.83.2.37 `int ppl_Pointset_Powerset_C_Polyhedron_expand_space_dimension (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_dimension_type d, ppl_dimension_type m)` [**related**]
- 10.83.2.38 `int ppl_Pointset_Powerset_C_Polyhedron_external_memory_in_bytes (ppl_const_Pointset_Powerset_C_Polyhedron_t ps, size_t * sz)` [**related**]
- 10.83.2.39 `int ppl_Pointset_Powerset_C_Polyhedron_fold_space_dimensions (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [**related**]
- 10.83.2.40 `int ppl_Pointset_Powerset_C_Polyhedron_generalized_affine_image (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.83.2.41 `int ppl_Pointset_Powerset_C_Polyhedron_generalized_affine_image_lhs_rhs (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` [**related**]
- 10.83.2.42 `int ppl_Pointset_Powerset_C_Polyhedron_generalized_affine_preimage (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]

10.83.2.43 `int ppl_Pointset_Powerset_C_Polyhedron_generalized_affine_preimage_lhs_rhs`
 (`ppl_Pointset_Powerset_C_Polyhedron_t ph`, `ppl_const_Linear_Expression_t lhs`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
 [**related**]

10.83.2.44 `int ppl_Pointset_Powerset_C_Polyhedron_geometrically_covers_Pointset -`
`Powerset_C_Polyhedron` (`ppl_const_Pointset_Powerset_C_Polyhedron_t x`,
`ppl_const_Pointset_Powerset_C_Polyhedron_t y`) [**related**]

Returns a positive integer if powerset x geometrically covers powerset y ; returns 0 otherwise.

10.83.2.45 `int ppl_Pointset_Powerset_C_Polyhedron_geometrically_equals_Pointset -`
`Powerset_C_Polyhedron` (`ppl_const_Pointset_Powerset_C_Polyhedron_t x`,
`ppl_const_Pointset_Powerset_C_Polyhedron_t y`) [**related**]

Returns a positive integer if powerset x is geometrically equal to powerset y ; returns 0 otherwise.

10.83.2.46 `int ppl_Pointset_Powerset_C_Polyhedron_intersection_assign` (`ppl_Pointset -`
`Powerset_C_Polyhedron_t x`, `ppl_const_Pointset_Powerset_C_Polyhedron_t y`)
 [**related**]

10.83.2.47 `int ppl_Pointset_Powerset_C_Polyhedron_is_bounded` (`ppl_const_Pointset_Powerset -`
`C_Polyhedron_t ph`) [**related**]

10.83.2.48 `int ppl_Pointset_Powerset_C_Polyhedron_is_discrete` (`ppl_const_Pointset_Powerset -`
`C_Polyhedron_t ph`) [**related**]

10.83.2.49 `int ppl_Pointset_Powerset_C_Polyhedron_is_disjoint_from_Pointset -`
`Powerset_C_Polyhedron` (`ppl_const_Pointset_Powerset_C_Polyhedron_t x`,
`ppl_const_Pointset_Powerset_C_Polyhedron_t y`) [**related**]

10.83.2.50 `int ppl_Pointset_Powerset_C_Polyhedron_is_empty` (`ppl_const_Pointset_Powerset_C -`
`Polyhedron_t ph`) [**related**]

- 10.83.2.51** `int ppl_Pointset_Powerset_C_Polyhedron_is_topologically_closed`
`(ppl_const_Pointset_Powerset_C_Polyhedron_t ph)` [**related**]
- 10.83.2.52** `int ppl_Pointset_Powerset_C_Polyhedron_is_universe` `(ppl_const_Pointset_Powerset_C_Polyhedron_t ph)` [**related**]
- 10.83.2.53** `int ppl_Pointset_Powerset_C_Polyhedron_map_space_dimensions`
`(ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_dimension_type maps[], size_t n)`
 [**related**]
- 10.83.2.54** `int ppl_Pointset_Powerset_C_Polyhedron_maximize` `(ppl_const_Pointset_Powerset_C_Polyhedron_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n,
 ppl_Coefficient_t ext_d, int * poptimum)` [**related**]
- 10.83.2.55** `int ppl_Pointset_Powerset_C_Polyhedron_maximize_with_point`
`(ppl_const_Pointset_Powerset_C_Polyhedron_t ph, ppl_const_Linear_Expression_t le,
 ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t
point)` [**related**]
- 10.83.2.56** `int ppl_Pointset_Powerset_C_Polyhedron_minimize` `(ppl_const_Pointset_Powerset_C_Polyhedron_t ph, ppl_const_Linear_Expression_t le,
 ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [**related**]
- 10.83.2.57** `int ppl_Pointset_Powerset_C_Polyhedron_minimize_with_point`
`(ppl_const_Pointset_Powerset_C_Polyhedron_t ph, ppl_const_Linear_Expression_t le,
 ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t
point)` [**related**]
- 10.83.2.58** `int ppl_Pointset_Powerset_C_Polyhedron_OK` `(ppl_const_Pointset_Powerset_C_Polyhedron_t ph)` [**related**]

10.83.2.59 int ppl_Pointset_Powerset_C_Polyhedron_omega_reduce
(ppl_Pointset_Powerset_C_Polyhedron_t *ph*) [**related**]

10.83.2.60 int ppl_Pointset_Powerset_C_Polyhedron_omega_reduce
(ppl_const_Pointset_Powerset_C_Polyhedron_t *ps*) [**related**]

Drops from the sequence of disjuncts in *ps* all the non-maximal elements so that *ps* is non-redundant.

10.83.2.61 int ppl_Pointset_Powerset_C_Polyhedron_pairwise_reduce
(ppl_Pointset_Powerset_C_Polyhedron_t *ps*) [**related**]

Modifies *ps* by (recursively) merging together the pairs of disjuncts whose upper-bound is the same as their set-theoretical union.

10.83.2.62 int ppl_Pointset_Powerset_C_Polyhedron_refine_with_congruence
(ppl_Pointset_Powerset_C_Polyhedron_t *ph*, ppl_const_Congruence_t *c*)
[**related**]

10.83.2.63 int ppl_Pointset_Powerset_C_Polyhedron_refine_with_congruences
(ppl_Pointset_Powerset_C_Polyhedron_t *ph*, ppl_const_Congruence_System_t *cs*)
[**related**]

10.83.2.64 int ppl_Pointset_Powerset_C_Polyhedron_refine_with_constraint
(ppl_Pointset_Powerset_C_Polyhedron_t *ph*, ppl_const_Constraint_t *c*) [**related**]

10.83.2.65 int ppl_Pointset_Powerset_C_Polyhedron_refine_with_constraints
(ppl_Pointset_Powerset_C_Polyhedron_t *ph*, ppl_const_Constraint_System_t *cs*)
[**related**]

10.83.2.66 int ppl_Pointset_Powerset_C_Polyhedron_relation_with_Congruence
(ppl_const_Pointset_Powerset_C_Polyhedron_t *ph*, ppl_const_Congruence_t *c*)
[**related**]

- 10.83.2.67** `int ppl_Pointset_Powerset_C_Polyhedron_relation_with_Constraint`
 (`ppl_const_Pointset_Powerset_C_Polyhedron_t ph`, `ppl_const_Constraint_t c`)
 [`related`]
- 10.83.2.68** `int ppl_Pointset_Powerset_C_Polyhedron_relation_with_Generator`
 (`ppl_const_Pointset_Powerset_C_Polyhedron_t ph`, `ppl_const_Generator_t c`)
 [`related`]
- 10.83.2.69** `int ppl_Pointset_Powerset_C_Polyhedron_remove_higher_space_dimensions`
 (`ppl_Pointset_Powerset_C_Polyhedron_t ph`, `ppl_dimension_type d`) [`related`]
- 10.83.2.70** `int ppl_Pointset_Powerset_C_Polyhedron_remove_space_dimensions`
 (`ppl_Pointset_Powerset_C_Polyhedron_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`)
 [`related`]
- 10.83.2.71** `int ppl_Pointset_Powerset_C_Polyhedron_simplify_using_context_assign` (`ppl_-`
`Pointset_Powerset_C_Polyhedron_t x`, `ppl_const_Pointset_Powerset_C_Polyhedron_t`
`y`) [`related`]
- 10.83.2.72** `int ppl_Pointset_Powerset_C_Polyhedron_size` (`ppl_const_Pointset_Powerset_C_-`
`Polyhedron_t ps`, `size_t * sz`) [`related`]
- Writes to `sz` the number of disjuncts in `ps`.
- Note**
- If present, Omega-redundant elements will be counted too.
- 10.83.2.73** `int ppl_Pointset_Powerset_C_Polyhedron_space_dimension` (`ppl_-`
`const_Pointset_Powerset_C_Polyhedron_t ph`, `ppl_dimension_type * m`)
 [`related`]

- 10.83.2.74** `int ppl_Pointset_Powerset_C_Polyhedron_strictly_contains_Pointset_Powerset_C_Polyhedron (ppl_const_Pointset_Powerset_C_Polyhedron_t x, ppl_const_Pointset_Powerset_C_Polyhedron_t y) [related]`
- 10.83.2.75** `int ppl_Pointset_Powerset_C_Polyhedron_time_elapse_assign (ppl_Pointset_Powerset_C_Polyhedron_t x, ppl_const_Pointset_Powerset_C_Polyhedron_t y) [related]`
- 10.83.2.76** `int ppl_Pointset_Powerset_C_Polyhedron_topological_closure_assign (ppl_Pointset_Powerset_C_Polyhedron_t ph) [related]`
- 10.83.2.77** `int ppl_Pointset_Powerset_C_Polyhedron_total_memory_in_bytes (ppl_const_Pointset_Powerset_C_Polyhedron_t ps, size_t * sz) [related]`
- 10.83.2.78** `int ppl_Pointset_Powerset_C_Polyhedron_unconstrain_space_dimension (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_dimension_type var) [related]`
- 10.83.2.79** `int ppl_Pointset_Powerset_C_Polyhedron_unconstrain_space_dimensions (ppl_Pointset_Powerset_C_Polyhedron_t ph, ppl_dimension_type ds[], size_t n) [related]`
- 10.83.2.80** `int ppl_Pointset_Powerset_C_Polyhedron_upper_bound_assign (ppl_Pointset_Powerset_C_Polyhedron_t x, ppl_const_Pointset_Powerset_C_Polyhedron_t y) [related]`
- 10.83.2.81** `int ppl_Pointset_Powerset_C_Polyhedron_upper_bound_assign_if_exact (ppl_Pointset_Powerset_C_Polyhedron_t x, ppl_const_Pointset_Powerset_C_Polyhedron_t y) [related]`

The documentation for this interface was generated from the following files:

- [C_interface.dox](#)
- [ppl.c.h](#)

10.84 ppl_Pointset_Powerset_Double_Box_const_iterator_tag Interface Reference

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Double_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- int [ppl_new_Pointset_Powerset_Double_Box_const_iterator](#) (ppl_Pointset_Powerset_Double_Box_const_iterator_t *pit)
- int [ppl_new_Pointset_Powerset_Double_Box_const_iterator_from_const_iterator](#) (ppl_Pointset_Powerset_Double_Box_const_iterator_t *px, ppl_const_Pointset_Powerset_Double_Box_const_iterator_t y)
- int [ppl_Pointset_Powerset_Double_Box_const_iterator_begin](#) (ppl_const_Pointset_Powerset_Double_Box_t ps, ppl_Pointset_Powerset_Double_Box_const_iterator_t psit)
- int [ppl_Pointset_Powerset_Double_Box_const_iterator_end](#) (ppl_const_Pointset_Powerset_Double_Box_t ps, ppl_Pointset_Powerset_Double_Box_const_iterator_t psit)
- int [ppl_Pointset_Powerset_Double_Box_const_iterator_equal_test](#) (ppl_const_Pointset_Powerset_Double_Box_const_iterator_t x, ppl_const_Pointset_Powerset_Double_Box_const_iterator_t y)
- int [ppl_Pointset_Powerset_Double_Box_const_iterator_increment](#) (ppl_Pointset_Powerset_Double_Box_const_iterator_t psit)
- int [ppl_Pointset_Powerset_Double_Box_const_iterator_decrement](#) (ppl_Pointset_Powerset_Double_Box_const_iterator_t psit)
- int [ppl_Pointset_Powerset_Double_Box_const_iterator_dereference](#) (ppl_const_Pointset_Powerset_Double_Box_const_iterator_t ps, ppl_const_Double_Box_t *d)
- int [ppl_delete_Pointset_Powerset_Double_Box_const_iterator](#) (ppl_const_Pointset_Powerset_Double_Box_const_iterator_t psit)

10.84.1 Detailed Description

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Double_Box_tag](#).

10.84.2 Friends And Related Function Documentation

10.84.2.1 int [ppl_delete_Pointset_Powerset_Double_Box_const_iterator](#) (ppl_const_Pointset_Powerset_Double_Box_const_iterator_t *psit*) [**related**]

10.84.2.2 int [ppl_new_Pointset_Powerset_Double_Box_const_iterator](#) (ppl_Pointset_Powerset_Double_Box_const_iterator_t * *pit*) [**related**]

- 10.84.2.3 `int ppl_new_Pointset_Powerset_Double_Box_const_iterator_from_
const_iterator (ppl_Pointset_Powerset_Double_Box_const_iterator_t * px,
ppl_const_Pointset_Powerset_Double_Box_const_iterator_t y)` [**related**]
- 10.84.2.4 `int ppl_Pointset_Powerset_Double_Box_const_iterator_begin (ppl_const_Pointset_
Powerset_Double_Box_t ps, ppl_Pointset_Powerset_Double_Box_const_iterator_t psit)`
[**related**]
- 10.84.2.5 `int ppl_Pointset_Powerset_Double_Box_const_iterator_decrement
(ppl_Pointset_Powerset_Double_Box_const_iterator_t psit)` [**related**]
- 10.84.2.6 `int ppl_Pointset_Powerset_Double_Box_const_iterator_dereference (ppl_const_
Pointset_Powerset_Double_Box_const_iterator_t ps, ppl_const_Double_Box_t * d)`
[**related**]
- 10.84.2.7 `int ppl_Pointset_Powerset_Double_Box_const_iterator_end (ppl_const_Pointset_
Powerset_Double_Box_t ps, ppl_Pointset_Powerset_Double_Box_const_iterator_t psit)`
[**related**]
- 10.84.2.8 `int ppl_Pointset_Powerset_Double_Box_const_iterator_equal_test
(ppl_const_Pointset_Powerset_Double_Box_const_iterator_t x,
ppl_const_Pointset_Powerset_Double_Box_const_iterator_t y)` [**related**]
- 10.84.2.9 `int ppl_Pointset_Powerset_Double_Box_const_iterator_increment
(ppl_Pointset_Powerset_Double_Box_const_iterator_t psit)` [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.85 ppl_Pointset_Powerset_Double_Box_iterator_tag Interface Reference

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Double_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_Double_Box_iterator` (`ppl_Pointset_Powerset_Double_Box_iterator_t *pit`)
- `int ppl_new_Pointset_Powerset_Double_Box_iterator_from_iterator` (`ppl_Pointset_Powerset_Double_Box_iterator_t *px`, `ppl_const_Pointset_Powerset_Double_Box_iterator_t y`)
- `int ppl_Pointset_Powerset_Double_Box_iterator_begin` (`ppl_Pointset_Powerset_Double_Box_t ps`, `ppl_Pointset_Powerset_Double_Box_iterator_t psit`)
- `int ppl_Pointset_Powerset_Double_Box_iterator_end` (`ppl_Pointset_Powerset_Double_Box_t ps`, `ppl_Pointset_Powerset_Double_Box_iterator_t psit`)
- `int ppl_Pointset_Powerset_Double_Box_iterator_equal_test` (`ppl_const_Pointset_Powerset_Double_Box_iterator_t x`, `ppl_const_Pointset_Powerset_Double_Box_iterator_t y`)
- `int ppl_Pointset_Powerset_Double_Box_iterator_increment` (`ppl_Pointset_Powerset_Double_Box_iterator_t psit`)
- `int ppl_Pointset_Powerset_Double_Box_iterator_decrement` (`ppl_Pointset_Powerset_Double_Box_iterator_t psit`)
- `int ppl_Pointset_Powerset_Double_Box_iterator_dereference` (`ppl_const_Pointset_Powerset_Double_Box_iterator_t ps`, `ppl_const_Double_Box_t *d`)
- `int ppl_delete_Pointset_Powerset_Double_Box_iterator` (`ppl_const_Pointset_Powerset_Double_Box_iterator_t psit`)

10.85.1 Detailed Description

Types and functions for iterating on the disjuncts of a `ppl_Pointset_Powerset_Double_Box_tag`.

10.85.2 Friends And Related Function Documentation

10.85.2.1 `int ppl_delete_Pointset_Powerset_Double_Box_iterator` (`ppl_const_Pointset_Powerset_Double_Box_iterator_t psit`) [**related**]

10.85.2.2 `int ppl_new_Pointset_Powerset_Double_Box_iterator` (`ppl_Pointset_Powerset_Double_Box_iterator_t *pit`) [**related**]

10.85.2.3 `int ppl_new_Pointset_Powerset_Double_Box_iterator_from_iterator` (`ppl_Pointset_Powerset_Double_Box_iterator_t *px`, `ppl_const_Pointset_Powerset_Double_Box_iterator_t y`) [**related**]

10.85.2.4 `int ppl_Pointset_Powerset_Double_Box_iterator_begin` (`ppl_Pointset_Powerset_Double_Box_t ps`, `ppl_Pointset_Powerset_Double_Box_iterator_t psit`) [**related**]

- 10.85.2.5** `int ppl_Pointset_Powerset_Double_Box_iterator_decrement`
 (`ppl_Pointset_Powerset_Double_Box_iterator_t psit`) [**related**]
- 10.85.2.6** `int ppl_Pointset_Powerset_Double_Box_iterator_dereference` (`ppl_const_ -`
`Pointset_Powerset_Double_Box_iterator_t ps`, `ppl_const_Double_Box_t * d`)
 [**related**]
- 10.85.2.7** `int ppl_Pointset_Powerset_Double_Box_iterator_end` (`ppl_Pointset_Powerset_ -`
`Double_Box_t ps`, `ppl_Pointset_Powerset_Double_Box_iterator_t psit`)
 [**related**]
- 10.85.2.8** `int ppl_Pointset_Powerset_Double_Box_iterator_equal_test`
 (`ppl_const_Pointset_Powerset_Double_Box_iterator_t x`, `ppl_const_Pointset_ -`
`Powerset_Double_Box_iterator_t y`) [**related**]
- 10.85.2.9** `int ppl_Pointset_Powerset_Double_Box_iterator_increment`
 (`ppl_Pointset_Powerset_Double_Box_iterator_t psit`) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.86 ppl_Pointset_Powerset_Double_Box_tag Interface Reference

Types and functions for [ppl_Pointset_Powerset_Double_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Pointset_Powerset_Double_Box` (`ppl_const_Pointset_Powerset_Double_Box_t ph`)
- `int ppl_new_Pointset_Powerset_Double_Box_from_space_dimension` (`ppl_Pointset_Powerset_ -`
`Double_Box_t *pph`, `ppl_dimension_type d`, `int empty`)
- `int ppl_new_Pointset_Powerset_Double_Box_from_Pointset_Powerset_Double_Box` (`ppl_ -`
`Pointset_Powerset_Double_Box_t *pph`, `ppl_const_Pointset_Powerset_Double_Box_t ph`)
- `int ppl_new_Pointset_Powerset_Double_Box_from_Double_Box` (`ppl_Pointset_Powerset_ -`
`Double_Box_t *pph`, `ppl_const_Double_Box_t ph`)

- int [ppl_new_Pointset_Powerset_Double_Box_from_Pointset_Powerset_Double_Box_with_complexity](#) (ppl_Pointset_Powerset_Double_Box_t *pph, ppl_const_Pointset_Powerset_Double_Box_t ph, int complexity)
- int [ppl_new_Pointset_Powerset_Double_Box_from_Double_Box_with_complexity](#) (ppl_Pointset_Powerset_Double_Box_t *pph, ppl_const_Double_Box_t ph, int complexity)
- int [ppl_new_Pointset_Powerset_Double_Box_from_Constraint_System](#) (ppl_Pointset_Powerset_Double_Box_t *pph, ppl_const_Constraint_System_t cs)
- int [ppl_new_Pointset_Powerset_Double_Box_from_Congruence_System](#) (ppl_Pointset_Powerset_Double_Box_t *pph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_Double_Box_space_dimension](#) (ppl_const_Pointset_Powerset_Double_Box_t ph, ppl_dimension_type *m)
- int [ppl_Pointset_Powerset_Double_Box_affine_dimension](#) (ppl_const_Pointset_Powerset_Double_Box_t ph, ppl_dimension_type *m)
- int [ppl_Pointset_Powerset_Double_Box_relation_with_Constraint](#) (ppl_const_Pointset_Powerset_Double_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Double_Box_relation_with_Generator](#) (ppl_const_Pointset_Powerset_Double_Box_t ph, ppl_const_Generator_t c)
- int [ppl_Pointset_Powerset_Double_Box_relation_with_Congruence](#) (ppl_const_Pointset_Powerset_Double_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Double_Box_is_empty](#) (ppl_const_Pointset_Powerset_Double_Box_t ph)
- int [ppl_Pointset_Powerset_Double_Box_is_universe](#) (ppl_const_Pointset_Powerset_Double_Box_t ph)
- int [ppl_Pointset_Powerset_Double_Box_is_bounded](#) (ppl_const_Pointset_Powerset_Double_Box_t ph)
- int [ppl_Pointset_Powerset_Double_Box_contains_integer_point](#) (ppl_const_Pointset_Powerset_Double_Box_t ph)
- int [ppl_Pointset_Powerset_Double_Box_is_topologically_closed](#) (ppl_const_Pointset_Powerset_Double_Box_t ph)
- int [ppl_Pointset_Powerset_Double_Box_is_discrete](#) (ppl_const_Pointset_Powerset_Double_Box_t ph)
- int [ppl_Pointset_Powerset_Double_Box_topological_closure_assign](#) (ppl_Pointset_Powerset_Double_Box_t ph)
- int [ppl_Pointset_Powerset_Double_Box_pairwise_reduce](#) (ppl_Pointset_Powerset_Double_Box_t ph)
- int [ppl_Pointset_Powerset_Double_Box_omega_reduce](#) (ppl_Pointset_Powerset_Double_Box_t ph)
- int [ppl_Pointset_Powerset_Double_Box_bounds_from_above](#) (ppl_const_Pointset_Powerset_Double_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_Double_Box_bounds_from_below](#) (ppl_const_Pointset_Powerset_Double_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_Double_Box_maximize](#) (ppl_const_Pointset_Powerset_Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_Double_Box_minimize](#) (ppl_const_Pointset_Powerset_Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_Double_Box_maximize_with_point](#) (ppl_const_Pointset_Powerset_Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_Double_Box_minimize_with_point](#) (ppl_const_Pointset_Powerset_Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)

- int [ppl_Pointset_Powerset_Double_Box_contains_Pointset_Powerset_Double_Box](#) (ppl_const_Pointset_Powerset_Double_Box_t x, ppl_const_Pointset_Powerset_Double_Box_t y)
- int [ppl_Pointset_Powerset_Double_Box_strictly_contains_Pointset_Powerset_Double_Box](#) (ppl_const_Pointset_Powerset_Double_Box_t x, ppl_const_Pointset_Powerset_Double_Box_t y)
- int [ppl_Pointset_Powerset_Double_Box_is_disjoint_from_Pointset_Powerset_Double_Box](#) (ppl_const_Pointset_Powerset_Double_Box_t x, ppl_const_Pointset_Powerset_Double_Box_t y)
- int [ppl_Pointset_Powerset_Double_Box_geometrically_covers_Pointset_Powerset_Double_Box](#) (ppl_const_Pointset_Powerset_Double_Box_t x, ppl_const_Pointset_Powerset_Double_Box_t y)
- int [ppl_Pointset_Powerset_Double_Box_geometrically_equals_Pointset_Powerset_Double_Box](#) (ppl_const_Pointset_Powerset_Double_Box_t x, ppl_const_Pointset_Powerset_Double_Box_t y)
- int [ppl_Pointset_Powerset_Double_Box_equals_Pointset_Powerset_Double_Box](#) (ppl_const_Pointset_Powerset_Double_Box_t x, ppl_const_Pointset_Powerset_Double_Box_t y)
- int [ppl_Pointset_Powerset_Double_Box_OK](#) (ppl_const_Pointset_Powerset_Double_Box_t ph)
- int [ppl_Pointset_Powerset_Double_Box_add_constraint](#) (ppl_Pointset_Powerset_Double_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Double_Box_add_congruence](#) (ppl_Pointset_Powerset_Double_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Double_Box_add_constraints](#) (ppl_Pointset_Powerset_Double_Box_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_Double_Box_add_congruences](#) (ppl_Pointset_Powerset_Double_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_Double_Box_refine_with_constraint](#) (ppl_Pointset_Powerset_Double_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Double_Box_refine_with_congruence](#) (ppl_Pointset_Powerset_Double_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Double_Box_refine_with_constraints](#) (ppl_Pointset_Powerset_Double_Box_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_Double_Box_refine_with_congruences](#) (ppl_Pointset_Powerset_Double_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_Double_Box_intersection_assign](#) (ppl_Pointset_Powerset_Double_Box_t x, ppl_const_Pointset_Powerset_Double_Box_t y)
- int [ppl_Pointset_Powerset_Double_Box_upper_bound_assign](#) (ppl_Pointset_Powerset_Double_Box_t x, ppl_const_Pointset_Powerset_Double_Box_t y)
- int [ppl_Pointset_Powerset_Double_Box_difference_assign](#) (ppl_Pointset_Powerset_Double_Box_t x, ppl_const_Pointset_Powerset_Double_Box_t y)
- int [ppl_Pointset_Powerset_Double_Box_concatenate_assign](#) (ppl_Pointset_Powerset_Double_Box_t x, ppl_const_Pointset_Powerset_Double_Box_t y)
- int [ppl_Pointset_Powerset_Double_Box_time_elapse_assign](#) (ppl_Pointset_Powerset_Double_Box_t x, ppl_const_Pointset_Powerset_Double_Box_t y)
- int [ppl_Pointset_Powerset_Double_Box_upper_bound_assign_if_exact](#) (ppl_Pointset_Powerset_Double_Box_t x, ppl_const_Pointset_Powerset_Double_Box_t y)
- int [ppl_Pointset_Powerset_Double_Box_simplify_using_context_assign](#) (ppl_Pointset_Powerset_Double_Box_t x, ppl_const_Pointset_Powerset_Double_Box_t y)
- int [ppl_Pointset_Powerset_Double_Box_constrains](#) (ppl_Pointset_Powerset_Double_Box_t ph, ppl_dimension_type var)
- int [ppl_Pointset_Powerset_Double_Box_unconstrain_space_dimension](#) (ppl_Pointset_Powerset_Double_Box_t ph, ppl_dimension_type var)
- int [ppl_Pointset_Powerset_Double_Box_unconstrain_space_dimensions](#) (ppl_Pointset_Powerset_Double_Box_t ph, ppl_dimension_type ds[], size_t n)
- int [ppl_Pointset_Powerset_Double_Box_affine_image](#) (ppl_Pointset_Powerset_Double_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)

- int [ppl_Pointset_Powerset_Double_Box_affine_preimage](#) (ppl_Pointset_Powerset_Double_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Double_Box_bounded_affine_image](#) (ppl_Pointset_Powerset_Double_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Double_Box_bounded_affine_preimage](#) (ppl_Pointset_Powerset_Double_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Double_Box_generalized_affine_image](#) (ppl_Pointset_Powerset_Double_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Double_Box_generalized_affine_preimage](#) (ppl_Pointset_Powerset_Double_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Double_Box_generalized_affine_image_lhs_rhs](#) (ppl_Pointset_Powerset_Double_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_Double_Box_generalized_affine_preimage_lhs_rhs](#) (ppl_Pointset_Powerset_Double_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_Double_Box_add_space_dimensions_and_embed](#) (ppl_Pointset_Powerset_Double_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Double_Box_add_space_dimensions_and_project](#) (ppl_Pointset_Powerset_Double_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Double_Box_remove_space_dimensions](#) (ppl_Pointset_Powerset_Double_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_Double_Box_remove_higher_space_dimensions](#) (ppl_Pointset_Powerset_Double_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Double_Box_expand_space_dimension](#) (ppl_Pointset_Powerset_Double_Box_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Pointset_Powerset_Double_Box_fold_space_dimensions](#) (ppl_Pointset_Powerset_Double_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Double_Box_map_space_dimensions](#) (ppl_Pointset_Powerset_Double_Box_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_Pointset_Powerset_Double_Box_drop_some_non_integer_points](#) (ppl_Pointset_Powerset_Double_Box_t ph, int complexity)
- int [ppl_Pointset_Powerset_Double_Box_drop_some_non_integer_points_2](#) (ppl_Pointset_Powerset_Double_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_Pointset_Powerset_Double_Box_external_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Double_Box_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Double_Box_total_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Double_Box_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Double_Box_size](#) (ppl_const_Pointset_Powerset_Double_Box_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Double_Box_add_disjunct](#) (ppl_Pointset_Powerset_Double_Box_t ps, ppl_const_Double_Box_t d)
- int [ppl_Pointset_Powerset_Double_Box_drop_disjunct](#) (ppl_Pointset_Powerset_Double_Box_t ps, ppl_const_Pointset_Powerset_Double_Box_iterator_t cit, ppl_Pointset_Powerset_Double_Box_iterator_t it)
- int [ppl_Pointset_Powerset_Double_Box_drop_disjuncts](#) (ppl_Pointset_Powerset_Double_Box_t ps, ppl_const_Pointset_Powerset_Double_Box_iterator_t first, ppl_const_Pointset_Powerset_Double_Box_iterator_t last)

10.86.1 Detailed Description

Types and functions for [ppl_Pointset_Powerset_Double_Box_tag](#).

10.86.2 Friends And Related Function Documentation

10.86.2.1 `int ppl_delete_Pointset_Powerset_Double_Box (ppl_const_Pointset_Powerset_Double_Box_t ph)` [**related**]

10.86.2.2 `int ppl_new_Pointset_Powerset_Double_Box_from_Congruence_System (ppl_Pointset_Powerset_Double_Box_t * pph, ppl_const_Congruence_System_t cs)` [**related**]

10.86.2.3 `int ppl_new_Pointset_Powerset_Double_Box_from_Constraint_System (ppl_Pointset_Powerset_Double_Box_t * pph, ppl_const_Constraint_System_t cs)` [**related**]

10.86.2.4 `int ppl_new_Pointset_Powerset_Double_Box_from_Double_Box (ppl_Pointset_Powerset_Double_Box_t * pph, ppl_const_Double_Box_t ph)` [**related**]

10.86.2.5 `int ppl_new_Pointset_Powerset_Double_Box_from_Double_Box_with_complexity (ppl_Pointset_Powerset_Double_Box_t * pph, ppl_const_Double_Box_t ph, int complexity)` [**related**]

10.86.2.6 `int ppl_new_Pointset_Powerset_Double_Box_from_Pointset_Powerset_Double_Box (ppl_Pointset_Powerset_Double_Box_t * pph, ppl_const_Pointset_Powerset_Double_Box_t ph)` [**related**]

10.86.2.7 `int ppl_new_Pointset_Powerset_Double_Box_from_Pointset_Powerset_Double_Box_with_complexity (ppl_Pointset_Powerset_Double_Box_t * pph, ppl_const_Pointset_Powerset_Double_Box_t ph, int complexity)` [**related**]

- 10.86.2.8** `int ppl_new_Pointset_Powerset_Double_Box_from_space_dimension`
 (`ppl_Pointset_Powerset_Double_Box_t * pph`, `ppl_dimension_type d`, `int empty`)
 [related]
- 10.86.2.9** `int ppl_Pointset_Powerset_Double_Box_add_congruence` (`ppl_-`
`Pointset_Powerset_Double_Box_t ph`, `ppl_const_Congruence_t c`)
 [related]
- 10.86.2.10** `int ppl_Pointset_Powerset_Double_Box_add_congruences` (`ppl_Pointset_-`
`Powerset_Double_Box_t ph`, `ppl_const_Congruence_System_t cs`)
 [related]
- 10.86.2.11** `int ppl_Pointset_Powerset_Double_Box_add_constraint` (`ppl_-`
`Pointset_Powerset_Double_Box_t ph`, `ppl_const_Constraint_t c`)
 [related]
- 10.86.2.12** `int ppl_Pointset_Powerset_Double_Box_add_constraints` (`ppl_Pointset_-`
`Powerset_Double_Box_t ph`, `ppl_const_Constraint_System_t cs`)
 [related]
- 10.86.2.13** `int ppl_Pointset_Powerset_Double_Box_add_disjunct` (`ppl_-`
`Pointset_Powerset_Double_Box_t ps`, `ppl_const_Double_Box_t d`)
 [related]
- 10.86.2.14** `int ppl_Pointset_Powerset_Double_Box_add_space_dimensions_and_embed`
 (`ppl_Pointset_Powerset_Double_Box_t ph`, `ppl_dimension_type d`) [related]
- 10.86.2.15** `int ppl_Pointset_Powerset_Double_Box_add_space_dimensions_and_project`
 (`ppl_Pointset_Powerset_Double_Box_t ph`, `ppl_dimension_type d`) [related]

- 10.86.2.16 `int ppl_Pointset_Powerset_Double_Box_affine_dimension (ppl_const_Pointset_Powerset_Double_Box_t ph, ppl_dimension_type * m)` [related]
- 10.86.2.17 `int ppl_Pointset_Powerset_Double_Box_affine_image (ppl_Pointset_Powerset_Double_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [related]
- 10.86.2.18 `int ppl_Pointset_Powerset_Double_Box_affine_preimage (ppl_Pointset_Powerset_Double_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [related]
- 10.86.2.19 `int ppl_Pointset_Powerset_Double_Box_bounded_affine_image (ppl_Pointset_Powerset_Double_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [related]
- 10.86.2.20 `int ppl_Pointset_Powerset_Double_Box_bounded_affine_preimage (ppl_Pointset_Powerset_Double_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [related]
- 10.86.2.21 `int ppl_Pointset_Powerset_Double_Box_bounds_from_above (ppl_const_Pointset_Powerset_Double_Box_t ph, ppl_const_Linear_Expression_t le)` [related]
- 10.86.2.22 `int ppl_Pointset_Powerset_Double_Box_bounds_from_below (ppl_const_Pointset_Powerset_Double_Box_t ph, ppl_const_Linear_Expression_t le)` [related]
- 10.86.2.23 `int ppl_Pointset_Powerset_Double_Box_concatenate_assign (ppl_Pointset_Powerset_Double_Box_t x, ppl_const_Pointset_Powerset_Double_Box_t y)` [related]

- 10.86.2.24** `int ppl_Pointset_Powerset_Double_Box_constrains (ppl_Pointset_Powerset_Double_Box_t ph, ppl_dimension_type var)` [**related**]
- 10.86.2.25** `int ppl_Pointset_Powerset_Double_Box_contains_integer_point (ppl_const_Pointset_Powerset_Double_Box_t ph)` [**related**]
- 10.86.2.26** `int ppl_Pointset_Powerset_Double_Box_contains_Pointset_Powerset_Double_Box (ppl_const_Pointset_Powerset_Double_Box_t x, ppl_const_Pointset_Powerset_Double_Box_t y)` [**related**]
- 10.86.2.27** `int ppl_Pointset_Powerset_Double_Box_difference_assign (ppl_Pointset_Powerset_Double_Box_t x, ppl_const_Pointset_Powerset_Double_Box_t y)` [**related**]
- 10.86.2.28** `int ppl_Pointset_Powerset_Double_Box_drop_disjunct (ppl_Pointset_Powerset_Double_Box_t ps, ppl_const_Pointset_Powerset_Double_Box_iterator_t cit, ppl_Pointset_Powerset_Double_Box_iterator_t it)` [**related**]
- 10.86.2.29** `int ppl_Pointset_Powerset_Double_Box_drop_disjuncts (ppl_Pointset_Powerset_Double_Box_t ps, ppl_const_Pointset_Powerset_Double_Box_iterator_t first, ppl_const_Pointset_Powerset_Double_Box_iterator_t last)` [**related**]
- 10.86.2.30** `int ppl_Pointset_Powerset_Double_Box_drop_some_non_integer_points (ppl_Pointset_Powerset_Double_Box_t ph, int complexity)` [**related**]
- 10.86.2.31** `int ppl_Pointset_Powerset_Double_Box_drop_some_non_integer_points_2 (ppl_Pointset_Powerset_Double_Box_t ph, ppl_dimension_type ds[], size_t n, int complexity)` [**related**]

- 10.86.2.32** `int ppl_Pointset_Powerset_Double_Box_equals_Pointset_Powerset_Double_Box (ppl_const_Pointset_Powerset_Double_Box_t x, ppl_const_Pointset_Powerset_Double_Box_t y) [related]`
- 10.86.2.33** `int ppl_Pointset_Powerset_Double_Box_expand_space_dimension (ppl_Pointset_Powerset_Double_Box_t ph, ppl_dimension_type d, ppl_dimension_type m) [related]`
- 10.86.2.34** `int ppl_Pointset_Powerset_Double_Box_external_memory_in_bytes (ppl_const_Pointset_Powerset_Double_Box_t ps, size_t *sz) [related]`
- 10.86.2.35** `int ppl_Pointset_Powerset_Double_Box_fold_space_dimensions (ppl_Pointset_Powerset_Double_Box_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d) [related]`
- 10.86.2.36** `int ppl_Pointset_Powerset_Double_Box_generalized_affine_image (ppl_Pointset_Powerset_Double_Box_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d) [related]`
- 10.86.2.37** `int ppl_Pointset_Powerset_Double_Box_generalized_affine_image_lhs_rhs (ppl_Pointset_Powerset_Double_Box_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs) [related]`
- 10.86.2.38** `int ppl_Pointset_Powerset_Double_Box_generalized_affine_preimage (ppl_Pointset_Powerset_Double_Box_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d) [related]`

- 10.86.2.39** `int ppl_Pointset_Powerset_Double_Box_generalized_affine_preimage_lhs_rhs`
 (`ppl_Pointset_Powerset_Double_Box_t ph`, `ppl_const_Linear_Expression_t lhs`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
 [`related`]
- 10.86.2.40** `int ppl_Pointset_Powerset_Double_Box_geometrically_covers_Pointset_ -`
`Powerset_Double_Box` (`ppl_const_Pointset_Powerset_Double_Box_t x`,
`ppl_const_Pointset_Powerset_Double_Box_t y`) [`related`]
- 10.86.2.41** `int ppl_Pointset_Powerset_Double_Box_geometrically_equals_Pointset_ -`
`Powerset_Double_Box` (`ppl_const_Pointset_Powerset_Double_Box_t x`,
`ppl_const_Pointset_Powerset_Double_Box_t y`) [`related`]
- 10.86.2.42** `int ppl_Pointset_Powerset_Double_Box_intersection_assign` (`ppl_Pointset_ -`
`Powerset_Double_Box_t x`, `ppl_const_Pointset_Powerset_Double_Box_t y`)
 [`related`]
- 10.86.2.43** `int ppl_Pointset_Powerset_Double_Box_is_bounded` (`ppl_const_Pointset_Powerset_ -`
`Double_Box_t ph`) [`related`]
- 10.86.2.44** `int ppl_Pointset_Powerset_Double_Box_is_discrete` (`ppl_const_Pointset_Powerset_ -`
`Double_Box_t ph`) [`related`]
- 10.86.2.45** `int ppl_Pointset_Powerset_Double_Box_is_disjoint_from_Pointset_ -`
`Powerset_Double_Box` (`ppl_const_Pointset_Powerset_Double_Box_t x`,
`ppl_const_Pointset_Powerset_Double_Box_t y`) [`related`]
- 10.86.2.46** `int ppl_Pointset_Powerset_Double_Box_is_empty` (`ppl_const_Pointset_Powerset_ -`
`Double_Box_t ph`) [`related`]

- 10.86.2.47** `int ppl_Pointset_Powerset_Double_Box_is_topologically_closed`
`(ppl_const_Pointset_Powerset_Double_Box_t ph)` [**related**]
- 10.86.2.48** `int ppl_Pointset_Powerset_Double_Box_is_universe` `(ppl_const_Pointset_Powerset_ -`
`Double_Box_t ph)` [**related**]
- 10.86.2.49** `int ppl_Pointset_Powerset_Double_Box_map_space_dimensions`
`(ppl_Pointset_Powerset_Double_Box_t ph, ppl_dimension_type maps[], size_t n)`
[related]
- 10.86.2.50** `int ppl_Pointset_Powerset_Double_Box_maximize` `(ppl_const_Pointset_Powerset_ -`
`Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n,`
`ppl_Coefficient_t ext_d, int *poptimum)` [**related**]
- 10.86.2.51** `int ppl_Pointset_Powerset_Double_Box_maximize_with_point` `(ppl_const_Pointset_ -`
`Powerset_Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t`
`ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` [**related**]
- 10.86.2.52** `int ppl_Pointset_Powerset_Double_Box_minimize` `(ppl_const_Pointset_Powerset_ -`
`Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n,`
`ppl_Coefficient_t ext_d, int *poptimum)` [**related**]
- 10.86.2.53** `int ppl_Pointset_Powerset_Double_Box_minimize_with_point` `(ppl_const_Pointset_ -`
`Powerset_Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t`
`ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` [**related**]
- 10.86.2.54** `int ppl_Pointset_Powerset_Double_Box_OK` `(ppl_const_Pointset_Powerset_Double_ -`
`Box_t ph)` [**related**]

- 10.86.2.55** `int ppl_Pointset_Powerset_Double_Box_omega_reduce (ppl_Pointset_Powerset_Double_Box_t ph)` [**related**]
- 10.86.2.56** `int ppl_Pointset_Powerset_Double_Box_pairwise_reduce (ppl_Pointset_Powerset_Double_Box_t ph)` [**related**]
- 10.86.2.57** `int ppl_Pointset_Powerset_Double_Box_refine_with_congruence (ppl_Pointset_Powerset_Double_Box_t ph, ppl_const_Congruence_t c)` [**related**]
- 10.86.2.58** `int ppl_Pointset_Powerset_Double_Box_refine_with_congruences (ppl_Pointset_Powerset_Double_Box_t ph, ppl_const_Congruence_System_t cs)` [**related**]
- 10.86.2.59** `int ppl_Pointset_Powerset_Double_Box_refine_with_constraint (ppl_Pointset_Powerset_Double_Box_t ph, ppl_const_Constraint_t c)` [**related**]
- 10.86.2.60** `int ppl_Pointset_Powerset_Double_Box_refine_with_constraints (ppl_Pointset_Powerset_Double_Box_t ph, ppl_const_Constraint_System_t cs)` [**related**]
- 10.86.2.61** `int ppl_Pointset_Powerset_Double_Box_relation_with_Congruence (ppl_const_Pointset_Powerset_Double_Box_t ph, ppl_const_Congruence_t c)` [**related**]
- 10.86.2.62** `int ppl_Pointset_Powerset_Double_Box_relation_with_Constraint (ppl_const_Pointset_Powerset_Double_Box_t ph, ppl_const_Constraint_t c)` [**related**]

- 10.86.2.63** `int ppl_Pointset_Powerset_Double_Box_relation_with_Generator`
 (`ppl_const_Pointset_Powerset_Double_Box_t ph`, `ppl_const_Generator_t c`)
 [`related`]
- 10.86.2.64** `int ppl_Pointset_Powerset_Double_Box_remove_higher_space_dimensions`
 (`ppl_Pointset_Powerset_Double_Box_t ph`, `ppl_dimension_type d`) [`related`]
- 10.86.2.65** `int ppl_Pointset_Powerset_Double_Box_remove_space_dimensions`
 (`ppl_Pointset_Powerset_Double_Box_t ph`, `ppl_dimension_type ds[]`, `size_t n`)
 [`related`]
- 10.86.2.66** `int ppl_Pointset_Powerset_Double_Box_simplify_using_context_assign`
 (`ppl_Pointset_Powerset_Double_Box_t x`, `ppl_const_Pointset_Powerset_Double_Box_t y`) [`related`]
- 10.86.2.67** `int ppl_Pointset_Powerset_Double_Box_size` (`ppl_const_Pointset_Powerset_Double_Box_t ps`, `size_t * sz`) [`related`]
- 10.86.2.68** `int ppl_Pointset_Powerset_Double_Box_space_dimension` (`ppl_const_Pointset_Powerset_Double_Box_t ph`, `ppl_dimension_type * m`)
 [`related`]
- 10.86.2.69** `int ppl_Pointset_Powerset_Double_Box_strictly_contains_Pointset_Powerset_Double_Box` (`ppl_const_Pointset_Powerset_Double_Box_t x`, `ppl_const_Pointset_Powerset_Double_Box_t y`) [`related`]
- 10.86.2.70** `int ppl_Pointset_Powerset_Double_Box_time_elapse_assign` (`ppl_Pointset_Powerset_Double_Box_t x`, `ppl_const_Pointset_Powerset_Double_Box_t y`)
 [`related`]

- 10.86.2.71** `int ppl_Pointset_Powerset_Double_Box_topological_closure_assign`
`(ppl_Pointset_Powerset_Double_Box_t ph)` [**related**]
- 10.86.2.72** `int ppl_Pointset_Powerset_Double_Box_total_memory_in_bytes`
`(ppl_const_Pointset_Powerset_Double_Box_t ps, size_t * sz)` [**related**]
- 10.86.2.73** `int ppl_Pointset_Powerset_Double_Box_unconstrain_space_dimension`
`(ppl_Pointset_Powerset_Double_Box_t ph, ppl_dimension_type var)` [**related**]
- 10.86.2.74** `int ppl_Pointset_Powerset_Double_Box_unconstrain_space_dimensions`
`(ppl_Pointset_Powerset_Double_Box_t ph, ppl_dimension_type ds[], size_t n)`
 [**related**]
- 10.86.2.75** `int ppl_Pointset_Powerset_Double_Box_upper_bound_assign` (`ppl_Pointset_Powerset_Double_Box_t x`, `ppl_const_Pointset_Powerset_Double_Box_t y`)
 [**related**]
- 10.86.2.76** `int ppl_Pointset_Powerset_Double_Box_upper_bound_assign_if_exact`
`(ppl_Pointset_Powerset_Double_Box_t x, ppl_const_Pointset_Powerset_Double_Box_t y)` [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.87 `ppl_Pointset_Powerset_Float_Box_const_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Float_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int` [ppl_new_Pointset_Powerset_Float_Box_const_iterator](#) (`ppl_Pointset_Powerset_Float_Box_const_iterator_t *pit`)

- `int ppl_new_Pointset_Powerset_Float_Box_const_iterator_from_const_iterator` (`ppl_Pointset_Powerset_Float_Box_const_iterator_t *px`, `ppl_const_Pointset_Powerset_Float_Box_const_iterator_t y`)
- `int ppl_Pointset_Powerset_Float_Box_const_iterator_begin` (`ppl_const_Pointset_Powerset_Float_Box_t ps`, `ppl_Pointset_Powerset_Float_Box_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Float_Box_const_iterator_end` (`ppl_const_Pointset_Powerset_Float_Box_t ps`, `ppl_Pointset_Powerset_Float_Box_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Float_Box_const_iterator_equal_test` (`ppl_const_Pointset_Powerset_Float_Box_const_iterator_t x`, `ppl_const_Pointset_Powerset_Float_Box_const_iterator_t y`)
- `int ppl_Pointset_Powerset_Float_Box_const_iterator_increment` (`ppl_Pointset_Powerset_Float_Box_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Float_Box_const_iterator_decrement` (`ppl_Pointset_Powerset_Float_Box_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Float_Box_const_iterator_dereference` (`ppl_const_Pointset_Powerset_Float_Box_const_iterator_t ps`, `ppl_const_Float_Box_t *d`)
- `int ppl_delete_Pointset_Powerset_Float_Box_const_iterator` (`ppl_const_Pointset_Powerset_Float_Box_const_iterator_t psit`)

10.87.1 Detailed Description

Types and functions for iterating on the disjuncts of a const `ppl_Pointset_Powerset_Float_Box_tag`.

10.87.2 Friends And Related Function Documentation

- 10.87.2.1** `int ppl_delete_Pointset_Powerset_Float_Box_const_iterator`
(`ppl_const_Pointset_Powerset_Float_Box_const_iterator_t psit`) [**related**]
- 10.87.2.2** `int ppl_new_Pointset_Powerset_Float_Box_const_iterator`
(`ppl_Pointset_Powerset_Float_Box_const_iterator_t *pit`) [**related**]
- 10.87.2.3** `int ppl_new_Pointset_Powerset_Float_Box_const_iterator_from_const_iterator`
(`ppl_Pointset_Powerset_Float_Box_const_iterator_t *px`,
`ppl_const_Pointset_Powerset_Float_Box_const_iterator_t y`) [**related**]
- 10.87.2.4** `int ppl_Pointset_Powerset_Float_Box_const_iterator_begin` (`ppl_const_Pointset_Powerset_Float_Box_t ps`, `ppl_Pointset_Powerset_Float_Box_const_iterator_t psit`)
[**related**]
- 10.87.2.5** `int ppl_Pointset_Powerset_Float_Box_const_iterator_decrement`
(`ppl_Pointset_Powerset_Float_Box_const_iterator_t psit`) [**related**]

- 10.87.2.6** `int ppl_Pointset_Powerset_Float_Box_const_iterator_dereference`
 (`ppl_const_Pointset_Powerset_Float_Box_const_iterator_t ps`, `ppl_const_Float_Box_t * d`) [**related**]
- 10.87.2.7** `int ppl_Pointset_Powerset_Float_Box_const_iterator_end` (`ppl_const_Pointset_Powerset_Float_Box_t ps`, `ppl_Pointset_Powerset_Float_Box_const_iterator_t psit`) [**related**]
- 10.87.2.8** `int ppl_Pointset_Powerset_Float_Box_const_iterator_equal_test`
 (`ppl_const_Pointset_Powerset_Float_Box_const_iterator_t x`,
`ppl_const_Pointset_Powerset_Float_Box_const_iterator_t y`) [**related**]
- 10.87.2.9** `int ppl_Pointset_Powerset_Float_Box_const_iterator_increment`
 (`ppl_Pointset_Powerset_Float_Box_const_iterator_t psit`) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.88 `ppl_Pointset_Powerset_Float_Box_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a `ppl_Pointset_Powerset_Float_Box_tag`.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_Float_Box_iterator` (`ppl_Pointset_Powerset_Float_Box_iterator_t *pit`)
- `int ppl_new_Pointset_Powerset_Float_Box_iterator_from_iterator` (`ppl_Pointset_Powerset_Float_Box_iterator_t *px`, `ppl_const_Pointset_Powerset_Float_Box_iterator_t y`)
- `int ppl_Pointset_Powerset_Float_Box_iterator_begin` (`ppl_Pointset_Powerset_Float_Box_t ps`, `ppl_Pointset_Powerset_Float_Box_iterator_t psit`)
- `int ppl_Pointset_Powerset_Float_Box_iterator_end` (`ppl_Pointset_Powerset_Float_Box_t ps`, `ppl_Pointset_Powerset_Float_Box_iterator_t psit`)
- `int ppl_Pointset_Powerset_Float_Box_iterator_equal_test` (`ppl_const_Pointset_Powerset_Float_Box_iterator_t x`, `ppl_const_Pointset_Powerset_Float_Box_iterator_t y`)
- `int ppl_Pointset_Powerset_Float_Box_iterator_increment` (`ppl_Pointset_Powerset_Float_Box_iterator_t psit`)
- `int ppl_Pointset_Powerset_Float_Box_iterator_decrement` (`ppl_Pointset_Powerset_Float_Box_iterator_t psit`)

- int [ppl_Pointset_Powerset_Float_Box_iterator_dereference](#) (ppl_const_Pointset_Powerset_Float_Box_iterator_t ps, ppl_const_Float_Box_t *d)
- int [ppl_delete_Pointset_Powerset_Float_Box_iterator](#) (ppl_const_Pointset_Powerset_Float_Box_iterator_t psit)

10.88.1 Detailed Description

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Float_Box_tag](#).

10.88.2 Friends And Related Function Documentation

10.88.2.1 int [ppl_delete_Pointset_Powerset_Float_Box_iterator](#) (ppl_const_Pointset_Powerset_Float_Box_iterator_t *psit*) [[related](#)]

10.88.2.2 int [ppl_new_Pointset_Powerset_Float_Box_iterator](#) (ppl_Pointset_Powerset_Float_Box_iterator_t * *pit*) [[related](#)]

10.88.2.3 int [ppl_new_Pointset_Powerset_Float_Box_iterator_from_iterator](#) (ppl_Pointset_Powerset_Float_Box_iterator_t * *px*, ppl_const_Pointset_Powerset_Float_Box_iterator_t *y*) [[related](#)]

10.88.2.4 int [ppl_Pointset_Powerset_Float_Box_iterator_begin](#) (ppl_Pointset_Powerset_Float_Box_t *ps*, ppl_Pointset_Powerset_Float_Box_iterator_t *psit*) [[related](#)]

10.88.2.5 int [ppl_Pointset_Powerset_Float_Box_iterator_decrement](#) (ppl_Pointset_Powerset_Float_Box_iterator_t *psit*) [[related](#)]

10.88.2.6 int [ppl_Pointset_Powerset_Float_Box_iterator_dereference](#) (ppl_const_Pointset_Powerset_Float_Box_iterator_t *ps*, ppl_const_Float_Box_t * *d*) [[related](#)]

10.88.2.7 int [ppl_Pointset_Powerset_Float_Box_iterator_end](#) (ppl_Pointset_Powerset_Float_Box_t *ps*, ppl_Pointset_Powerset_Float_Box_iterator_t *psit*) [[related](#)]

10.88.2.8 `int ppl_Pointset_Powerset_Float_Box_iterator_equal_test (ppl_const_Pointset_Powerset_Float_Box_iterator_t x, ppl_const_Pointset_Powerset_Float_Box_iterator_t y)` [**related**]

10.88.2.9 `int ppl_Pointset_Powerset_Float_Box_iterator_increment (ppl_Pointset_Powerset_Float_Box_iterator_t psit)` [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.89 `ppl_Pointset_Powerset_Float_Box_tag` Interface Reference

Types and functions for [ppl_Pointset_Powerset_Float_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Pointset_Powerset_Float_Box (ppl_const_Pointset_Powerset_Float_Box_t ph)`
- `int ppl_new_Pointset_Powerset_Float_Box_from_space_dimension (ppl_Pointset_Powerset_Float_Box_t *pph, ppl_dimension_type d, int empty)`
- `int ppl_new_Pointset_Powerset_Float_Box_from_Pointset_Powerset_Float_Box (ppl_Pointset_Powerset_Float_Box_t *pph, ppl_const_Pointset_Powerset_Float_Box_t ph)`
- `int ppl_new_Pointset_Powerset_Float_Box_from_Float_Box (ppl_Pointset_Powerset_Float_Box_t *pph, ppl_const_Float_Box_t ph)`
- `int ppl_new_Pointset_Powerset_Float_Box_from_Pointset_Powerset_Float_Box_with_complexity (ppl_Pointset_Powerset_Float_Box_t *pph, ppl_const_Pointset_Powerset_Float_Box_t ph, int complexity)`
- `int ppl_new_Pointset_Powerset_Float_Box_from_Float_Box_with_complexity (ppl_Pointset_Powerset_Float_Box_t *pph, ppl_const_Float_Box_t ph, int complexity)`
- `int ppl_new_Pointset_Powerset_Float_Box_from_Constraint_System (ppl_Pointset_Powerset_Float_Box_t *pph, ppl_const_Constraint_System_t cs)`
- `int ppl_new_Pointset_Powerset_Float_Box_from_Congruence_System (ppl_Pointset_Powerset_Float_Box_t *pph, ppl_const_Congruence_System_t cs)`
- `int ppl_Pointset_Powerset_Float_Box_space_dimension (ppl_const_Pointset_Powerset_Float_Box_t ph, ppl_dimension_type *m)`
- `int ppl_Pointset_Powerset_Float_Box_affine_dimension (ppl_const_Pointset_Powerset_Float_Box_t ph, ppl_dimension_type *m)`
- `int ppl_Pointset_Powerset_Float_Box_relation_with_Constraint (ppl_const_Pointset_Powerset_Float_Box_t ph, ppl_const_Constraint_t c)`
- `int ppl_Pointset_Powerset_Float_Box_relation_with_Generator (ppl_const_Pointset_Powerset_Float_Box_t ph, ppl_const_Generator_t c)`
- `int ppl_Pointset_Powerset_Float_Box_relation_with_Congruence (ppl_const_Pointset_Powerset_Float_Box_t ph, ppl_const_Congruence_t c)`

- int [ppl_Pointset_Powerset_Float_Box_is_empty](#) (ppl_const_Pointset_Powerset_Float_Box_t ph)
- int [ppl_Pointset_Powerset_Float_Box_is_universe](#) (ppl_const_Pointset_Powerset_Float_Box_t ph)
- int [ppl_Pointset_Powerset_Float_Box_is_bounded](#) (ppl_const_Pointset_Powerset_Float_Box_t ph)
- int [ppl_Pointset_Powerset_Float_Box_contains_integer_point](#) (ppl_const_Pointset_Powerset_Float_Box_t ph)
- int [ppl_Pointset_Powerset_Float_Box_is_topologically_closed](#) (ppl_const_Pointset_Powerset_Float_Box_t ph)
- int [ppl_Pointset_Powerset_Float_Box_is_discrete](#) (ppl_const_Pointset_Powerset_Float_Box_t ph)
- int [ppl_Pointset_Powerset_Float_Box_topological_closure_assign](#) (ppl_Pointset_Powerset_Float_Box_t ph)
- int [ppl_Pointset_Powerset_Float_Box_pairwise_reduce](#) (ppl_Pointset_Powerset_Float_Box_t ph)
- int [ppl_Pointset_Powerset_Float_Box_omega_reduce](#) (ppl_Pointset_Powerset_Float_Box_t ph)
- int [ppl_Pointset_Powerset_Float_Box_bounds_from_above](#) (ppl_const_Pointset_Powerset_Float_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_Float_Box_bounds_from_below](#) (ppl_const_Pointset_Powerset_Float_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_Float_Box_maximize](#) (ppl_const_Pointset_Powerset_Float_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_Float_Box_minimize](#) (ppl_const_Pointset_Powerset_Float_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_Float_Box_maximize_with_point](#) (ppl_const_Pointset_Powerset_Float_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_Float_Box_minimize_with_point](#) (ppl_const_Pointset_Powerset_Float_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_Float_Box_contains_Pointset_Powerset_Float_Box](#) (ppl_const_Pointset_Powerset_Float_Box_t x, ppl_const_Pointset_Powerset_Float_Box_t y)
- int [ppl_Pointset_Powerset_Float_Box_strictly_contains_Pointset_Powerset_Float_Box](#) (ppl_const_Pointset_Powerset_Float_Box_t x, ppl_const_Pointset_Powerset_Float_Box_t y)
- int [ppl_Pointset_Powerset_Float_Box_is_disjoint_from_Pointset_Powerset_Float_Box](#) (ppl_const_Pointset_Powerset_Float_Box_t x, ppl_const_Pointset_Powerset_Float_Box_t y)
- int [ppl_Pointset_Powerset_Float_Box_geometrically_covers_Pointset_Powerset_Float_Box](#) (ppl_const_Pointset_Powerset_Float_Box_t x, ppl_const_Pointset_Powerset_Float_Box_t y)
- int [ppl_Pointset_Powerset_Float_Box_geometrically_equals_Pointset_Powerset_Float_Box](#) (ppl_const_Pointset_Powerset_Float_Box_t x, ppl_const_Pointset_Powerset_Float_Box_t y)
- int [ppl_Pointset_Powerset_Float_Box_equals_Pointset_Powerset_Float_Box](#) (ppl_const_Pointset_Powerset_Float_Box_t x, ppl_const_Pointset_Powerset_Float_Box_t y)
- int [ppl_Pointset_Powerset_Float_Box_OK](#) (ppl_const_Pointset_Powerset_Float_Box_t ph)
- int [ppl_Pointset_Powerset_Float_Box_add_constraint](#) (ppl_Pointset_Powerset_Float_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Float_Box_add_congruence](#) (ppl_Pointset_Powerset_Float_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Float_Box_add_constraints](#) (ppl_Pointset_Powerset_Float_Box_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_Float_Box_add_congruences](#) (ppl_Pointset_Powerset_Float_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_Float_Box_refine_with_constraint](#) (ppl_Pointset_Powerset_Float_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Float_Box_refine_with_congruence](#) (ppl_Pointset_Powerset_Float_Box_t ph, ppl_const_Congruence_t c)

- [int ppl_Pointset_Powerset_Float_Box_refine_with_constraints](#) (ppl_Pointset_Powerset_Float_Box_t ph, ppl_const_Constraint_System_t cs)
- [int ppl_Pointset_Powerset_Float_Box_refine_with_congruences](#) (ppl_Pointset_Powerset_Float_Box_t ph, ppl_const_Congruence_System_t cs)
- [int ppl_Pointset_Powerset_Float_Box_intersection_assign](#) (ppl_Pointset_Powerset_Float_Box_t x, ppl_const_Pointset_Powerset_Float_Box_t y)
- [int ppl_Pointset_Powerset_Float_Box_upper_bound_assign](#) (ppl_Pointset_Powerset_Float_Box_t x, ppl_const_Pointset_Powerset_Float_Box_t y)
- [int ppl_Pointset_Powerset_Float_Box_difference_assign](#) (ppl_Pointset_Powerset_Float_Box_t x, ppl_const_Pointset_Powerset_Float_Box_t y)
- [int ppl_Pointset_Powerset_Float_Box_concatenate_assign](#) (ppl_Pointset_Powerset_Float_Box_t x, ppl_const_Pointset_Powerset_Float_Box_t y)
- [int ppl_Pointset_Powerset_Float_Box_time_elapse_assign](#) (ppl_Pointset_Powerset_Float_Box_t x, ppl_const_Pointset_Powerset_Float_Box_t y)
- [int ppl_Pointset_Powerset_Float_Box_upper_bound_assign_if_exact](#) (ppl_Pointset_Powerset_Float_Box_t x, ppl_const_Pointset_Powerset_Float_Box_t y)
- [int ppl_Pointset_Powerset_Float_Box_simplify_using_context_assign](#) (ppl_Pointset_Powerset_Float_Box_t x, ppl_const_Pointset_Powerset_Float_Box_t y)
- [int ppl_Pointset_Powerset_Float_Box_constrains](#) (ppl_Pointset_Powerset_Float_Box_t ph, [ppl_dimension_type](#) var)
- [int ppl_Pointset_Powerset_Float_Box_unconstrain_space_dimension](#) (ppl_Pointset_Powerset_Float_Box_t ph, [ppl_dimension_type](#) var)
- [int ppl_Pointset_Powerset_Float_Box_unconstrain_space_dimensions](#) (ppl_Pointset_Powerset_Float_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- [int ppl_Pointset_Powerset_Float_Box_affine_image](#) (ppl_Pointset_Powerset_Float_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- [int ppl_Pointset_Powerset_Float_Box_affine_preimage](#) (ppl_Pointset_Powerset_Float_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- [int ppl_Pointset_Powerset_Float_Box_bounded_affine_image](#) (ppl_Pointset_Powerset_Float_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- [int ppl_Pointset_Powerset_Float_Box_bounded_affine_preimage](#) (ppl_Pointset_Powerset_Float_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- [int ppl_Pointset_Powerset_Float_Box_generalized_affine_image](#) (ppl_Pointset_Powerset_Float_Box_t ph, [ppl_dimension_type](#) var, [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- [int ppl_Pointset_Powerset_Float_Box_generalized_affine_preimage](#) (ppl_Pointset_Powerset_Float_Box_t ph, [ppl_dimension_type](#) var, [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- [int ppl_Pointset_Powerset_Float_Box_generalized_affine_image_lhs_rhs](#) (ppl_Pointset_Powerset_Float_Box_t ph, ppl_const_Linear_Expression_t lhs, [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- [int ppl_Pointset_Powerset_Float_Box_generalized_affine_preimage_lhs_rhs](#) (ppl_Pointset_Powerset_Float_Box_t ph, ppl_const_Linear_Expression_t lhs, [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- [int ppl_Pointset_Powerset_Float_Box_add_space_dimensions_and_embed](#) (ppl_Pointset_Powerset_Float_Box_t ph, [ppl_dimension_type](#) d)
- [int ppl_Pointset_Powerset_Float_Box_add_space_dimensions_and_project](#) (ppl_Pointset_Powerset_Float_Box_t ph, [ppl_dimension_type](#) d)
- [int ppl_Pointset_Powerset_Float_Box_remove_space_dimensions](#) (ppl_Pointset_Powerset_Float_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)

- int [ppl_Pointset_Powerset_Float_Box_remove_higher_space_dimensions](#) (ppl_Pointset_Powerset_Float_Box_t ph, ppl_dimension_type d)
- int [ppl_Pointset_Powerset_Float_Box_expand_space_dimension](#) (ppl_Pointset_Powerset_Float_Box_t ph, ppl_dimension_type d, ppl_dimension_type m)
- int [ppl_Pointset_Powerset_Float_Box_fold_space_dimensions](#) (ppl_Pointset_Powerset_Float_Box_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)
- int [ppl_Pointset_Powerset_Float_Box_map_space_dimensions](#) (ppl_Pointset_Powerset_Float_Box_t ph, ppl_dimension_type maps[], size_t n)
- int [ppl_Pointset_Powerset_Float_Box_drop_some_non_integer_points](#) (ppl_Pointset_Powerset_Float_Box_t ph, int complexity)
- int [ppl_Pointset_Powerset_Float_Box_drop_some_non_integer_points_2](#) (ppl_Pointset_Powerset_Float_Box_t ph, ppl_dimension_type ds[], size_t n, int complexity)
- int [ppl_Pointset_Powerset_Float_Box_external_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Float_Box_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Float_Box_total_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Float_Box_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Float_Box_size](#) (ppl_const_Pointset_Powerset_Float_Box_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Float_Box_add_disjunct](#) (ppl_Pointset_Powerset_Float_Box_t ps, ppl_const_Float_Box_t d)
- int [ppl_Pointset_Powerset_Float_Box_drop_disjunct](#) (ppl_Pointset_Powerset_Float_Box_t ps, ppl_const_Pointset_Powerset_Float_Box_iterator_t cit, ppl_Pointset_Powerset_Float_Box_iterator_t it)
- int [ppl_Pointset_Powerset_Float_Box_drop_disjuncts](#) (ppl_Pointset_Powerset_Float_Box_t ps, ppl_const_Pointset_Powerset_Float_Box_iterator_t first, ppl_const_Pointset_Powerset_Float_Box_iterator_t last)

10.89.1 Detailed Description

Types and functions for [ppl_Pointset_Powerset_Float_Box_tag](#).

10.89.2 Friends And Related Function Documentation

10.89.2.1 int [ppl_delete_Pointset_Powerset_Float_Box](#) (ppl_const_Pointset_Powerset_Float_Box_t *ph*) [[related](#)]

10.89.2.2 int [ppl_new_Pointset_Powerset_Float_Box_from_Congruence_System](#) (ppl_Pointset_Powerset_Float_Box_t * *pph*, ppl_const_Congruence_System_t *cs*) [[related](#)]

10.89.2.3 int [ppl_new_Pointset_Powerset_Float_Box_from_Constraint_System](#) (ppl_Pointset_Powerset_Float_Box_t * *pph*, ppl_const_Constraint_System_t *cs*) [[related](#)]

- 10.89.2.4** `int ppl_new_Pointset_Powerset_Float_Box_from_Float_Box`
`(ppl_Pointset_Powerset_Float_Box_t * pph, ppl_const_Float_Box_t ph)` [**related**]
- 10.89.2.5** `int ppl_new_Pointset_Powerset_Float_Box_from_Float_Box_with_complexity`
`(ppl_Pointset_Powerset_Float_Box_t * pph, ppl_const_Float_Box_t ph, int complexity)`
[**related**]
- 10.89.2.6** `int ppl_new_Pointset_Powerset_Float_Box_from_Pointset_Powerset_Float_Box`
`(ppl_Pointset_Powerset_Float_Box_t * pph, ppl_const_Pointset_Powerset_Float_Box_t`
`ph)` [**related**]
- 10.89.2.7** `int ppl_new_Pointset_Powerset_Float_Box_from_Pointset_Powerset_-`
`Float_Box_with_complexity (ppl_Pointset_Powerset_Float_Box_t * pph,`
`ppl_const_Pointset_Powerset_Float_Box_t ph, int complexity)` [**related**]
- 10.89.2.8** `int ppl_new_Pointset_Powerset_Float_Box_from_space_dimension`
`(ppl_Pointset_Powerset_Float_Box_t * pph, ppl_dimension_type d, int empty)`
[**related**]
- 10.89.2.9** `int ppl_Pointset_Powerset_Float_Box_add_congruence (ppl_Pointset_Powerset_Float_-`
`Box_t ph, ppl_const_Congruence_t c)` [**related**]
- 10.89.2.10** `int ppl_Pointset_Powerset_Float_Box_add_congruences (ppl_Pointset_-`
`Powerset_Float_Box_t ph, ppl_const_Congruence_System_t cs)`
[**related**]
- 10.89.2.11** `int ppl_Pointset_Powerset_Float_Box_add_constraint (ppl_Pointset_Powerset_Float_-`
`Box_t ph, ppl_const_Constraint_t c)` [**related**]

- 10.89.2.12 `int ppl_Pointset_Powerset_Float_Box_add_constraints (ppl_Pointset_Powerset_Float_Box_t ph, ppl_const_Constraint_System_t cs)` `[related]`
- 10.89.2.13 `int ppl_Pointset_Powerset_Float_Box_add_disjunct (ppl_Pointset_Powerset_Float_Box_t ps, ppl_const_Float_Box_t d)` `[related]`
- 10.89.2.14 `int ppl_Pointset_Powerset_Float_Box_add_space_dimensions_and_embed (ppl_Pointset_Powerset_Float_Box_t ph, ppl_dimension_type d)` `[related]`
- 10.89.2.15 `int ppl_Pointset_Powerset_Float_Box_add_space_dimensions_and_project (ppl_Pointset_Powerset_Float_Box_t ph, ppl_dimension_type d)` `[related]`
- 10.89.2.16 `int ppl_Pointset_Powerset_Float_Box_affine_dimension (ppl_const_Pointset_Powerset_Float_Box_t ph, ppl_dimension_type * m)` `[related]`
- 10.89.2.17 `int ppl_Pointset_Powerset_Float_Box_affine_image (ppl_Pointset_Powerset_Float_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` `[related]`
- 10.89.2.18 `int ppl_Pointset_Powerset_Float_Box_affine_preimage (ppl_Pointset_Powerset_Float_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` `[related]`
- 10.89.2.19 `int ppl_Pointset_Powerset_Float_Box_bounded_affine_image (ppl_Pointset_Powerset_Float_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` `[related]`

- 10.89.2.20 `int ppl_Pointset_Powerset_Float_Box_bounded_affine_preimage (ppl_Pointset_Powerset_Float_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [**related**]
- 10.89.2.21 `int ppl_Pointset_Powerset_Float_Box_bounds_from_above (ppl_const_Pointset_Powerset_Float_Box_t ph, ppl_const_Linear_Expression_t le)` [**related**]
- 10.89.2.22 `int ppl_Pointset_Powerset_Float_Box_bounds_from_below (ppl_const_Pointset_Powerset_Float_Box_t ph, ppl_const_Linear_Expression_t le)` [**related**]
- 10.89.2.23 `int ppl_Pointset_Powerset_Float_Box_concatenate_assign (ppl_Pointset_Powerset_Float_Box_t x, ppl_const_Pointset_Powerset_Float_Box_t y)` [**related**]
- 10.89.2.24 `int ppl_Pointset_Powerset_Float_Box_constrains (ppl_Pointset_Powerset_Float_Box_t ph, ppl_dimension_type var)` [**related**]
- 10.89.2.25 `int ppl_Pointset_Powerset_Float_Box_contains_integer_point (ppl_const_Pointset_Powerset_Float_Box_t ph)` [**related**]
- 10.89.2.26 `int ppl_Pointset_Powerset_Float_Box_contains_Pointset_Powerset_Float_Box (ppl_const_Pointset_Powerset_Float_Box_t x, ppl_const_Pointset_Powerset_Float_Box_t y)` [**related**]
- 10.89.2.27 `int ppl_Pointset_Powerset_Float_Box_difference_assign (ppl_Pointset_Powerset_Float_Box_t x, ppl_const_Pointset_Powerset_Float_Box_t y)` [**related**]

- 10.89.2.28** `int ppl_Pointset_Powerset_Float_Box_drop_disjunct (ppl_Pointset_Powerset_Float_Box_t ps, ppl_const_Pointset_Powerset_Float_Box_iterator_t cit, ppl_Pointset_Powerset_Float_Box_iterator_t it)` [**related**]
- 10.89.2.29** `int ppl_Pointset_Powerset_Float_Box_drop_disjuncts (ppl_Pointset_Powerset_Float_Box_t ps, ppl_const_Pointset_Powerset_Float_Box_iterator_t first, ppl_const_Pointset_Powerset_Float_Box_iterator_t last)` [**related**]
- 10.89.2.30** `int ppl_Pointset_Powerset_Float_Box_drop_some_non_integer_points (ppl_Pointset_Powerset_Float_Box_t ph, int complexity)` [**related**]
- 10.89.2.31** `int ppl_Pointset_Powerset_Float_Box_drop_some_non_integer_points_2 (ppl_Pointset_Powerset_Float_Box_t ph, ppl_dimension_type ds[], size_t n, int complexity)` [**related**]
- 10.89.2.32** `int ppl_Pointset_Powerset_Float_Box_equals_Pointset_Powerset_Float_Box (ppl_const_Pointset_Powerset_Float_Box_t x, ppl_const_Pointset_Powerset_Float_Box_t y)` [**related**]
- 10.89.2.33** `int ppl_Pointset_Powerset_Float_Box_expand_space_dimension (ppl_Pointset_Powerset_Float_Box_t ph, ppl_dimension_type d, ppl_dimension_type m)` [**related**]
- 10.89.2.34** `int ppl_Pointset_Powerset_Float_Box_external_memory_in_bytes (ppl_const_Pointset_Powerset_Float_Box_t ps, size_t * sz)` [**related**]
- 10.89.2.35** `int ppl_Pointset_Powerset_Float_Box_fold_space_dimensions (ppl_Pointset_Powerset_Float_Box_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [**related**]

- 10.89.2.36** `int ppl_Pointset_Powerset_Float_Box_generalized_affine_image`
 (`ppl_Pointset_Powerset_Float_Box_t ph`, `ppl_dimension_type var`, `enum`
`ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.89.2.37** `int ppl_Pointset_Powerset_Float_Box_generalized_affine_image_lhs_rhs`
 (`ppl_Pointset_Powerset_Float_Box_t ph`, `ppl_const_Linear_Expression_t lhs`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
 [`related`]
- 10.89.2.38** `int ppl_Pointset_Powerset_Float_Box_generalized_affine_preimage`
 (`ppl_Pointset_Powerset_Float_Box_t ph`, `ppl_dimension_type var`, `enum`
`ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.89.2.39** `int ppl_Pointset_Powerset_Float_Box_generalized_affine_preimage_lhs_rhs`
 (`ppl_Pointset_Powerset_Float_Box_t ph`, `ppl_const_Linear_Expression_t lhs`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
 [`related`]
- 10.89.2.40** `int ppl_Pointset_Powerset_Float_Box_geometrically_covers_Pointset -`
`Powerset_Float_Box` (`ppl_const_Pointset_Powerset_Float_Box_t x`,
`ppl_const_Pointset_Powerset_Float_Box_t y`) [`related`]
- 10.89.2.41** `int ppl_Pointset_Powerset_Float_Box_geometrically_equals_Pointset -`
`Powerset_Float_Box` (`ppl_const_Pointset_Powerset_Float_Box_t x`,
`ppl_const_Pointset_Powerset_Float_Box_t y`) [`related`]
- 10.89.2.42** `int ppl_Pointset_Powerset_Float_Box_intersection_assign` (`ppl_Pointset -`
`Powerset_Float_Box_t x`, `ppl_const_Pointset_Powerset_Float_Box_t y`)
 [`related`]

- 10.89.2.43** `int ppl_Pointset_Powerset_Float_Box_is_bounded (ppl_const_Pointset_Powerset_Float_Box_t ph)` [**related**]
- 10.89.2.44** `int ppl_Pointset_Powerset_Float_Box_is_discrete (ppl_const_Pointset_Powerset_Float_Box_t ph)` [**related**]
- 10.89.2.45** `int ppl_Pointset_Powerset_Float_Box_is_disjoint_from_Pointset_Powerset_Float_Box (ppl_const_Pointset_Powerset_Float_Box_t x, ppl_const_Pointset_Powerset_Float_Box_t y)` [**related**]
- 10.89.2.46** `int ppl_Pointset_Powerset_Float_Box_is_empty (ppl_const_Pointset_Powerset_Float_Box_t ph)` [**related**]
- 10.89.2.47** `int ppl_Pointset_Powerset_Float_Box_is_topologically_closed (ppl_const_Pointset_Powerset_Float_Box_t ph)` [**related**]
- 10.89.2.48** `int ppl_Pointset_Powerset_Float_Box_is_universe (ppl_const_Pointset_Powerset_Float_Box_t ph)` [**related**]
- 10.89.2.49** `int ppl_Pointset_Powerset_Float_Box_map_space_dimensions (ppl_Pointset_Powerset_Float_Box_t ph, ppl_dimension_type maps[], size_t n)` [**related**]
- 10.89.2.50** `int ppl_Pointset_Powerset_Float_Box_maximize (ppl_const_Pointset_Powerset_Float_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [**related**]
- 10.89.2.51** `int ppl_Pointset_Powerset_Float_Box_maximize_with_point (ppl_const_Pointset_Powerset_Float_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` [**related**]

- 10.89.2.52** `int ppl_Pointset_Powerset_Float_Box_minimize (ppl_const_Pointset_Powerset_Float_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [**related**]
- 10.89.2.53** `int ppl_Pointset_Powerset_Float_Box_minimize_with_point (ppl_const_Pointset_Powerset_Float_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` [**related**]
- 10.89.2.54** `int ppl_Pointset_Powerset_Float_Box_OK (ppl_const_Pointset_Powerset_Float_Box_t ph)` [**related**]
- 10.89.2.55** `int ppl_Pointset_Powerset_Float_Box_omega_reduce (ppl_Pointset_Powerset_Float_Box_t ph)` [**related**]
- 10.89.2.56** `int ppl_Pointset_Powerset_Float_Box_pairwise_reduce (ppl_Pointset_Powerset_Float_Box_t ph)` [**related**]
- 10.89.2.57** `int ppl_Pointset_Powerset_Float_Box_refine_with_congruence (ppl_Pointset_Powerset_Float_Box_t ph, ppl_const_Congruence_t c)` [**related**]
- 10.89.2.58** `int ppl_Pointset_Powerset_Float_Box_refine_with_congruences (ppl_Pointset_Powerset_Float_Box_t ph, ppl_const_Congruence_System_t cs)` [**related**]
- 10.89.2.59** `int ppl_Pointset_Powerset_Float_Box_refine_with_constraint (ppl_Pointset_Powerset_Float_Box_t ph, ppl_const_Constraint_t c)` [**related**]
- 10.89.2.60** `int ppl_Pointset_Powerset_Float_Box_refine_with_constraints (ppl_Pointset_Powerset_Float_Box_t ph, ppl_const_Constraint_System_t cs)` [**related**]

- 10.89.2.61** `int ppl_Pointset_Powerset_Float_Box_relation_with_Congruence`
 (`ppl_const_Pointset_Powerset_Float_Box_t ph`, `ppl_const_Congruence_t c`)
 [`related`]
- 10.89.2.62** `int ppl_Pointset_Powerset_Float_Box_relation_with_Constraint`
 (`ppl_const_Pointset_Powerset_Float_Box_t ph`, `ppl_const_Constraint_t c`)
 [`related`]
- 10.89.2.63** `int ppl_Pointset_Powerset_Float_Box_relation_with_Generator`
 (`ppl_const_Pointset_Powerset_Float_Box_t ph`, `ppl_const_Generator_t c`)
 [`related`]
- 10.89.2.64** `int ppl_Pointset_Powerset_Float_Box_remove_higher_space_dimensions`
 (`ppl_Pointset_Powerset_Float_Box_t ph`, `ppl_dimension_type d`) [`related`]
- 10.89.2.65** `int ppl_Pointset_Powerset_Float_Box_remove_space_dimensions`
 (`ppl_Pointset_Powerset_Float_Box_t ph`, `ppl_dimension_type ds[]`, `size_t n`)
 [`related`]
- 10.89.2.66** `int ppl_Pointset_Powerset_Float_Box_simplify_using_context_assign`
 (`ppl_Pointset_Powerset_Float_Box_t x`, `ppl_const_Pointset_Powerset_Float_Box_t y`)
 [`related`]
- 10.89.2.67** `int ppl_Pointset_Powerset_Float_Box_size` (`ppl_const_Pointset_Powerset_Float_Box_t ps`, `size_t * sz`) [`related`]
- 10.89.2.68** `int ppl_Pointset_Powerset_Float_Box_space_dimension` (`ppl_const_Pointset_Powerset_Float_Box_t ph`, `ppl_dimension_type * m`)
 [`related`]

- 10.89.2.69** `int ppl_Pointset_Powerset_Float_Box_strictly_contains_Pointset_Powerset_Float_Box (ppl_const_Pointset_Powerset_Float_Box_t x, ppl_const_Pointset_Powerset_Float_Box_t y)` [**related**]
- 10.89.2.70** `int ppl_Pointset_Powerset_Float_Box_time_elapse_assign (ppl_Pointset_Powerset_Float_Box_t x, ppl_const_Pointset_Powerset_Float_Box_t y)` [**related**]
- 10.89.2.71** `int ppl_Pointset_Powerset_Float_Box_topological_closure_assign (ppl_Pointset_Powerset_Float_Box_t ph)` [**related**]
- 10.89.2.72** `int ppl_Pointset_Powerset_Float_Box_total_memory_in_bytes (ppl_const_Pointset_Powerset_Float_Box_t ps, size_t * sz)` [**related**]
- 10.89.2.73** `int ppl_Pointset_Powerset_Float_Box_unconstrain_space_dimension (ppl_Pointset_Powerset_Float_Box_t ph, ppl_dimension_type var)` [**related**]
- 10.89.2.74** `int ppl_Pointset_Powerset_Float_Box_unconstrain_space_dimensions (ppl_Pointset_Powerset_Float_Box_t ph, ppl_dimension_type ds[], size_t n)` [**related**]
- 10.89.2.75** `int ppl_Pointset_Powerset_Float_Box_upper_bound_assign (ppl_Pointset_Powerset_Float_Box_t x, ppl_const_Pointset_Powerset_Float_Box_t y)` [**related**]
- 10.89.2.76** `int ppl_Pointset_Powerset_Float_Box_upper_bound_assign_if_exact (ppl_Pointset_Powerset_Float_Box_t x, ppl_const_Pointset_Powerset_Float_Box_t y)` [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.90 ppl_Pointset_Powerset_Grid_const_iterator_tag Interface Reference

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Grid_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- int [ppl_new_Pointset_Powerset_Grid_const_iterator](#) (ppl_Pointset_Powerset_Grid_const_iterator_t *pit)
- int [ppl_new_Pointset_Powerset_Grid_const_iterator_from_const_iterator](#) (ppl_Pointset_Powerset_Grid_const_iterator_t *px, ppl_const_Pointset_Powerset_Grid_const_iterator_t y)
- int [ppl_Pointset_Powerset_Grid_const_iterator_begin](#) (ppl_const_Pointset_Powerset_Grid_t ps, ppl_Pointset_Powerset_Grid_const_iterator_t psit)
- int [ppl_Pointset_Powerset_Grid_const_iterator_end](#) (ppl_const_Pointset_Powerset_Grid_t ps, ppl_Pointset_Powerset_Grid_const_iterator_t psit)
- int [ppl_Pointset_Powerset_Grid_const_iterator_equal_test](#) (ppl_const_Pointset_Powerset_Grid_const_iterator_t x, ppl_const_Pointset_Powerset_Grid_const_iterator_t y)
- int [ppl_Pointset_Powerset_Grid_const_iterator_increment](#) (ppl_Pointset_Powerset_Grid_const_iterator_t psit)
- int [ppl_Pointset_Powerset_Grid_const_iterator_decrement](#) (ppl_Pointset_Powerset_Grid_const_iterator_t psit)
- int [ppl_Pointset_Powerset_Grid_const_iterator_dereference](#) (ppl_const_Pointset_Powerset_Grid_const_iterator_t ps, ppl_const_Grid_t *d)
- int [ppl_delete_Pointset_Powerset_Grid_const_iterator](#) (ppl_const_Pointset_Powerset_Grid_const_iterator_t psit)

10.90.1 Detailed Description

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Grid_tag](#).

10.90.2 Friends And Related Function Documentation

10.90.2.1 int [ppl_delete_Pointset_Powerset_Grid_const_iterator](#) (ppl_const_Pointset_Powerset_Grid_const_iterator_t *psit*) [**related**]

10.90.2.2 int [ppl_new_Pointset_Powerset_Grid_const_iterator](#) (ppl_Pointset_Powerset_Grid_const_iterator_t * *pit*) [**related**]

10.90.2.3 int [ppl_new_Pointset_Powerset_Grid_const_iterator_from_const_iterator](#) (ppl_Pointset_Powerset_Grid_const_iterator_t * *px*, ppl_const_Pointset_Powerset_Grid_const_iterator_t *y*) [**related**]

- 10.90.2.4 `int ppl_Pointset_Powerset_Grid_const_iterator_begin (ppl_const_Pointset_Powerset_Grid_t ps, ppl_Pointset_Powerset_Grid_const_iterator_t psit)` **[related]**

- 10.90.2.5 `int ppl_Pointset_Powerset_Grid_const_iterator_decrement (ppl_Pointset_Powerset_Grid_const_iterator_t psit)` **[related]**

- 10.90.2.6 `int ppl_Pointset_Powerset_Grid_const_iterator_dereference (ppl_const_Pointset_Powerset_Grid_const_iterator_t ps, ppl_const_Grid_t * d)` **[related]**

- 10.90.2.7 `int ppl_Pointset_Powerset_Grid_const_iterator_end (ppl_const_Pointset_Powerset_Grid_t ps, ppl_Pointset_Powerset_Grid_const_iterator_t psit)` **[related]**

- 10.90.2.8 `int ppl_Pointset_Powerset_Grid_const_iterator_equal_test (ppl_const_Pointset_Powerset_Grid_const_iterator_t x, ppl_const_Pointset_Powerset_Grid_const_iterator_t y)` **[related]**

- 10.90.2.9 `int ppl_Pointset_Powerset_Grid_const_iterator_increment (ppl_Pointset_Powerset_Grid_const_iterator_t psit)` **[related]**

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.91 `ppl_Pointset_Powerset_Grid_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a `ppl_Pointset_Powerset_Grid_tag`.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl\_new\_Pointset\_Powerset\_Grid\_iterator (ppl_Pointset_Powerset_Grid_iterator_t *pit)`

- int [ppl_new_Pointset_Powerset_Grid_iterator_from_iterator](#) (ppl_Pointset_Powerset_Grid_iterator_t *px, ppl_const_Pointset_Powerset_Grid_iterator_t y)
- int [ppl_Pointset_Powerset_Grid_iterator_begin](#) (ppl_Pointset_Powerset_Grid_t ps, ppl_Pointset_Powerset_Grid_iterator_t psit)
- int [ppl_Pointset_Powerset_Grid_iterator_end](#) (ppl_Pointset_Powerset_Grid_t ps, ppl_Pointset_Powerset_Grid_iterator_t psit)
- int [ppl_Pointset_Powerset_Grid_iterator_equal_test](#) (ppl_const_Pointset_Powerset_Grid_iterator_t x, ppl_const_Pointset_Powerset_Grid_iterator_t y)
- int [ppl_Pointset_Powerset_Grid_iterator_increment](#) (ppl_Pointset_Powerset_Grid_iterator_t psit)
- int [ppl_Pointset_Powerset_Grid_iterator_decrement](#) (ppl_Pointset_Powerset_Grid_iterator_t psit)
- int [ppl_Pointset_Powerset_Grid_iterator_dereference](#) (ppl_const_Pointset_Powerset_Grid_iterator_t ps, ppl_const_Grid_t *d)
- int [ppl_delete_Pointset_Powerset_Grid_iterator](#) (ppl_const_Pointset_Powerset_Grid_iterator_t psit)

10.91.1 Detailed Description

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Grid_tag](#).

10.91.2 Friends And Related Function Documentation

10.91.2.1 int [ppl_delete_Pointset_Powerset_Grid_iterator](#) (ppl_const_Pointset_Powerset_Grid_iterator_t *psit*) [[related](#)]

10.91.2.2 int [ppl_new_Pointset_Powerset_Grid_iterator](#) (ppl_Pointset_Powerset_Grid_iterator_t **pit*) [[related](#)]

10.91.2.3 int [ppl_new_Pointset_Powerset_Grid_iterator_from_iterator](#) (ppl_Pointset_Powerset_Grid_iterator_t **px*, ppl_const_Pointset_Powerset_Grid_iterator_t *y*) [[related](#)]

10.91.2.4 int [ppl_Pointset_Powerset_Grid_iterator_begin](#) (ppl_Pointset_Powerset_Grid_t *ps*, ppl_Pointset_Powerset_Grid_iterator_t *psit*) [[related](#)]

10.91.2.5 int [ppl_Pointset_Powerset_Grid_iterator_decrement](#) (ppl_Pointset_Powerset_Grid_iterator_t *psit*) [[related](#)]

- 10.91.2.6** `int ppl_Pointset_Powerset_Grid_iterator_dereference (ppl_const_Pointset_Powerset_Grid_iterator_t ps, ppl_const_Grid_t * d)` **[related]**
- 10.91.2.7** `int ppl_Pointset_Powerset_Grid_iterator_end (ppl_Pointset_Powerset_Grid_t ps, ppl_Pointset_Powerset_Grid_iterator_t psit)` **[related]**
- 10.91.2.8** `int ppl_Pointset_Powerset_Grid_iterator_equal_test (ppl_const_Pointset_Powerset_Grid_iterator_t x, ppl_const_Pointset_Powerset_Grid_iterator_t y)` **[related]**
- 10.91.2.9** `int ppl_Pointset_Powerset_Grid_iterator_increment (ppl_Pointset_Powerset_Grid_iterator_t psit)` **[related]**

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.92 ppl_Pointset_Powerset_Grid_tag Interface Reference

Types and functions for [ppl_Pointset_Powerset_Grid_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Pointset_Powerset_Grid (ppl_const_Pointset_Powerset_Grid_t ph)`
- `int ppl_new_Pointset_Powerset_Grid_from_space_dimension (ppl_Pointset_Powerset_Grid_t *pph, ppl_dimension_type d, int empty)`
- `int ppl_new_Pointset_Powerset_Grid_from_Pointset_Powerset_Grid (ppl_Pointset_Powerset_Grid_t *pph, ppl_const_Pointset_Powerset_Grid_t ph)`
- `int ppl_new_Pointset_Powerset_Grid_from_Grid (ppl_Pointset_Powerset_Grid_t *pph, ppl_const_Grid_t ph)`
- `int ppl_new_Pointset_Powerset_Grid_from_Pointset_Powerset_Grid_with_complexity (ppl_Pointset_Powerset_Grid_t *pph, ppl_const_Pointset_Powerset_Grid_t ph, int complexity)`
- `int ppl_new_Pointset_Powerset_Grid_from_Grid_with_complexity (ppl_Pointset_Powerset_Grid_t *pph, ppl_const_Grid_t ph, int complexity)`
- `int ppl_new_Pointset_Powerset_Grid_from_Constraint_System (ppl_Pointset_Powerset_Grid_t *pph, ppl_const_Constraint_System_t cs)`

- int [ppl_new_Pointset_Powerset_Grid_from_Congruence_System](#) (ppl_Pointset_Powerset_Grid_t *pph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_Grid_space_dimension](#) (ppl_const_Pointset_Powerset_Grid_t ph, [ppl_dimension_type](#) *m)
- int [ppl_Pointset_Powerset_Grid_affine_dimension](#) (ppl_const_Pointset_Powerset_Grid_t ph, [ppl_dimension_type](#) *m)
- int [ppl_Pointset_Powerset_Grid_relation_with_Constraint](#) (ppl_const_Pointset_Powerset_Grid_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Grid_relation_with_Generator](#) (ppl_const_Pointset_Powerset_Grid_t ph, ppl_const_Generator_t c)
- int [ppl_Pointset_Powerset_Grid_relation_with_Congruence](#) (ppl_const_Pointset_Powerset_Grid_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Grid_is_empty](#) (ppl_const_Pointset_Powerset_Grid_t ph)
- int [ppl_Pointset_Powerset_Grid_is_universe](#) (ppl_const_Pointset_Powerset_Grid_t ph)
- int [ppl_Pointset_Powerset_Grid_is_bounded](#) (ppl_const_Pointset_Powerset_Grid_t ph)
- int [ppl_Pointset_Powerset_Grid_contains_integer_point](#) (ppl_const_Pointset_Powerset_Grid_t ph)
- int [ppl_Pointset_Powerset_Grid_is_topologically_closed](#) (ppl_const_Pointset_Powerset_Grid_t ph)
- int [ppl_Pointset_Powerset_Grid_is_discrete](#) (ppl_const_Pointset_Powerset_Grid_t ph)
- int [ppl_Pointset_Powerset_Grid_topological_closure_assign](#) (ppl_Pointset_Powerset_Grid_t ph)
- int [ppl_Pointset_Powerset_Grid_pairwise_reduce](#) (ppl_Pointset_Powerset_Grid_t ph)
- int [ppl_Pointset_Powerset_Grid_omega_reduce](#) (ppl_Pointset_Powerset_Grid_t ph)
- int [ppl_Pointset_Powerset_Grid_bounds_from_above](#) (ppl_const_Pointset_Powerset_Grid_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_Grid_bounds_from_below](#) (ppl_const_Pointset_Powerset_Grid_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_Grid_maximize](#) (ppl_const_Pointset_Powerset_Grid_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_Grid_minimize](#) (ppl_const_Pointset_Powerset_Grid_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_Grid_maximize_with_point](#) (ppl_const_Pointset_Powerset_Grid_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_Grid_minimize_with_point](#) (ppl_const_Pointset_Powerset_Grid_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_Grid_contains_Pointset_Powerset_Grid](#) (ppl_const_Pointset_Powerset_Grid_t x, ppl_const_Pointset_Powerset_Grid_t y)
- int [ppl_Pointset_Powerset_Grid_strictly_contains_Pointset_Powerset_Grid](#) (ppl_const_Pointset_Powerset_Grid_t x, ppl_const_Pointset_Powerset_Grid_t y)
- int [ppl_Pointset_Powerset_Grid_is_disjoint_from_Pointset_Powerset_Grid](#) (ppl_const_Pointset_Powerset_Grid_t x, ppl_const_Pointset_Powerset_Grid_t y)
- int [ppl_Pointset_Powerset_Grid_geometrically_covers_Pointset_Powerset_Grid](#) (ppl_const_Pointset_Powerset_Grid_t x, ppl_const_Pointset_Powerset_Grid_t y)
- int [ppl_Pointset_Powerset_Grid_geometrically_equals_Pointset_Powerset_Grid](#) (ppl_const_Pointset_Powerset_Grid_t x, ppl_const_Pointset_Powerset_Grid_t y)
- int [ppl_Pointset_Powerset_Grid_equals_Pointset_Powerset_Grid](#) (ppl_const_Pointset_Powerset_Grid_t x, ppl_const_Pointset_Powerset_Grid_t y)
- int [ppl_Pointset_Powerset_Grid_OK](#) (ppl_const_Pointset_Powerset_Grid_t ph)
- int [ppl_Pointset_Powerset_Grid_add_constraint](#) (ppl_Pointset_Powerset_Grid_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Grid_add_congruence](#) (ppl_Pointset_Powerset_Grid_t ph, ppl_const_Congruence_t c)

- int [ppl_Pointset_Powerset_Grid_add_constraints](#) (ppl_Pointset_Powerset_Grid_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_Grid_add_congruences](#) (ppl_Pointset_Powerset_Grid_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_Grid_refine_with_constraint](#) (ppl_Pointset_Powerset_Grid_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Grid_refine_with_congruence](#) (ppl_Pointset_Powerset_Grid_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Grid_refine_with_constraints](#) (ppl_Pointset_Powerset_Grid_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_Grid_refine_with_congruences](#) (ppl_Pointset_Powerset_Grid_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_Grid_intersection_assign](#) (ppl_Pointset_Powerset_Grid_t x, ppl_const_Pointset_Powerset_Grid_t y)
- int [ppl_Pointset_Powerset_Grid_upper_bound_assign](#) (ppl_Pointset_Powerset_Grid_t x, ppl_const_Pointset_Powerset_Grid_t y)
- int [ppl_Pointset_Powerset_Grid_difference_assign](#) (ppl_Pointset_Powerset_Grid_t x, ppl_const_Pointset_Powerset_Grid_t y)
- int [ppl_Pointset_Powerset_Grid_concatenate_assign](#) (ppl_Pointset_Powerset_Grid_t x, ppl_const_Pointset_Powerset_Grid_t y)
- int [ppl_Pointset_Powerset_Grid_time_elapse_assign](#) (ppl_Pointset_Powerset_Grid_t x, ppl_const_Pointset_Powerset_Grid_t y)
- int [ppl_Pointset_Powerset_Grid_upper_bound_assign_if_exact](#) (ppl_Pointset_Powerset_Grid_t x, ppl_const_Pointset_Powerset_Grid_t y)
- int [ppl_Pointset_Powerset_Grid_simplify_using_context_assign](#) (ppl_Pointset_Powerset_Grid_t x, ppl_const_Pointset_Powerset_Grid_t y)
- int [ppl_Pointset_Powerset_Grid_constrains](#) (ppl_Pointset_Powerset_Grid_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_Grid_unconstrain_space_dimension](#) (ppl_Pointset_Powerset_Grid_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_Grid_unconstrain_space_dimensions](#) (ppl_Pointset_Powerset_Grid_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_Grid_affine_image](#) (ppl_Pointset_Powerset_Grid_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Grid_affine_preimage](#) (ppl_Pointset_Powerset_Grid_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Grid_bounded_affine_image](#) (ppl_Pointset_Powerset_Grid_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Grid_bounded_affine_preimage](#) (ppl_Pointset_Powerset_Grid_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Grid_generalized_affine_image](#) (ppl_Pointset_Powerset_Grid_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Grid_generalized_affine_preimage](#) (ppl_Pointset_Powerset_Grid_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Grid_generalized_affine_image_lhs_rhs](#) (ppl_Pointset_Powerset_Grid_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)

- int [ppl_Pointset_Powerset_Grid_generalized_affine_preimage_lhs_rhs](#) (ppl_Pointset_Powerset_Grid_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_Grid_add_space_dimensions_and_embed](#) (ppl_Pointset_Powerset_Grid_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Grid_add_space_dimensions_and_project](#) (ppl_Pointset_Powerset_Grid_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Grid_remove_space_dimensions](#) (ppl_Pointset_Powerset_Grid_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_Grid_remove_higher_space_dimensions](#) (ppl_Pointset_Powerset_Grid_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Grid_expand_space_dimension](#) (ppl_Pointset_Powerset_Grid_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Pointset_Powerset_Grid_fold_space_dimensions](#) (ppl_Pointset_Powerset_Grid_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Grid_map_space_dimensions](#) (ppl_Pointset_Powerset_Grid_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_Pointset_Powerset_Grid_drop_some_non_integer_points](#) (ppl_Pointset_Powerset_Grid_t ph, int complexity)
- int [ppl_Pointset_Powerset_Grid_drop_some_non_integer_points_2](#) (ppl_Pointset_Powerset_Grid_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_Pointset_Powerset_Grid_external_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Grid_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Grid_total_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Grid_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Grid_size](#) (ppl_const_Pointset_Powerset_Grid_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Grid_add_disjunct](#) (ppl_Pointset_Powerset_Grid_t ps, ppl_const_Grid_t d)
- int [ppl_Pointset_Powerset_Grid_drop_disjunct](#) (ppl_Pointset_Powerset_Grid_t ps, ppl_const_Pointset_Powerset_Grid_iterator_t cit, ppl_Pointset_Powerset_Grid_iterator_t it)
- int [ppl_Pointset_Powerset_Grid_drop_disjuncts](#) (ppl_Pointset_Powerset_Grid_t ps, ppl_const_Pointset_Powerset_Grid_iterator_t first, ppl_const_Pointset_Powerset_Grid_iterator_t last)
- int [ppl_Pointset_Powerset_Grid_BHZ03_Grid_congruence_widening_assign](#) (ppl_Pointset_Powerset_Grid_t x, ppl_const_Pointset_Powerset_Grid_t y)
- int [ppl_Pointset_Powerset_Grid_BHZ03_Grid_generator_widening_assign](#) (ppl_Pointset_Powerset_Grid_t x, ppl_const_Pointset_Powerset_Grid_t y)
- int [ppl_Pointset_Powerset_Grid_BGP99_congruence_extrapolation_assign](#) (ppl_Pointset_Powerset_Grid_t x, ppl_const_Pointset_Powerset_Grid_t y, int disjuncts)
- int [ppl_Pointset_Powerset_Grid_BGP99_generator_extrapolation_assign](#) (ppl_Pointset_Powerset_Grid_t x, ppl_const_Pointset_Powerset_Grid_t y, int disjuncts)

10.92.1 Detailed Description

Types and functions for [ppl_Pointset_Powerset_Grid_tag](#).

10.92.2 Friends And Related Function Documentation

10.92.2.1 int ppl_delete_Pointset_Powerset_Grid (ppl_const_Pointset_Powerset_Grid_t ph) [related]

- 10.92.2.2** `int ppl_new_Pointset_Powerset_Grid_from_Congruence_System`
 (`ppl_Pointset_Powerset_Grid_t * pph`, `ppl_const_Congruence_System_t cs`)
 [`related`]
- 10.92.2.3** `int ppl_new_Pointset_Powerset_Grid_from_Constraint_System`
 (`ppl_Pointset_Powerset_Grid_t * pph`, `ppl_const_Constraint_System_t cs`)
 [`related`]
- 10.92.2.4** `int ppl_new_Pointset_Powerset_Grid_from_Grid` (`ppl_Pointset_Powerset_Grid_t * pph`,
`ppl_const_Grid_t ph`) [`related`]
- 10.92.2.5** `int ppl_new_Pointset_Powerset_Grid_from_Grid_with_complexity`
 (`ppl_Pointset_Powerset_Grid_t * pph`, `ppl_const_Grid_t ph`, `int complexity`)
 [`related`]
- 10.92.2.6** `int ppl_new_Pointset_Powerset_Grid_from_Pointset_Powerset_Grid`
 (`ppl_Pointset_Powerset_Grid_t * pph`, `ppl_const_Pointset_Powerset_Grid_t ph`)
 [`related`]
- 10.92.2.7** `int ppl_new_Pointset_Powerset_Grid_from_Pointset_Powerset_Grid_with_complexity`
 (`ppl_Pointset_Powerset_Grid_t * pph`, `ppl_const_Pointset_Powerset_Grid_t ph`, `int complexity`) [`related`]
- 10.92.2.8** `int ppl_new_Pointset_Powerset_Grid_from_space_dimension`
 (`ppl_Pointset_Powerset_Grid_t * pph`, `ppl_dimension_type d`, `int empty`) [`related`]
- 10.92.2.9** `int ppl_Pointset_Powerset_Grid_add_congruence` (`ppl_Pointset_Powerset_Grid_t ph`,
`ppl_const_Congruence_t c`) [`related`]

- 10.92.2.10 `int ppl_Pointset_Powerset_Grid_add_congruences (ppl_Pointset_Powerset_Grid_t ph, ppl_const_Congruence_System_t cs)` [**related**]
- 10.92.2.11 `int ppl_Pointset_Powerset_Grid_add_constraint (ppl_Pointset_Powerset_Grid_t ph, ppl_const_Constraint_t c)` [**related**]
- 10.92.2.12 `int ppl_Pointset_Powerset_Grid_add_constraints (ppl_Pointset_Powerset_Grid_t ph, ppl_const_Constraint_System_t cs)` [**related**]
- 10.92.2.13 `int ppl_Pointset_Powerset_Grid_add_disjunct (ppl_Pointset_Powerset_Grid_t ps, ppl_const_Grid_t d)` [**related**]
- 10.92.2.14 `int ppl_Pointset_Powerset_Grid_add_space_dimensions_and_embed (ppl_Pointset_Powerset_Grid_t ph, ppl_dimension_type d)` [**related**]
- 10.92.2.15 `int ppl_Pointset_Powerset_Grid_add_space_dimensions_and_project (ppl_Pointset_Powerset_Grid_t ph, ppl_dimension_type d)` [**related**]
- 10.92.2.16 `int ppl_Pointset_Powerset_Grid_affine_dimension (ppl_const_Pointset_Powerset_Grid_t ph, ppl_dimension_type * m)` [**related**]
- 10.92.2.17 `int ppl_Pointset_Powerset_Grid_affine_image (ppl_Pointset_Powerset_Grid_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.92.2.18 `int ppl_Pointset_Powerset_Grid_affine_preimage (ppl_Pointset_Powerset_Grid_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]

- 10.92.2.19 `int ppl_Pointset_Powerset_Grid_BGP99_congruence_extrapolation_assign`
 (`ppl_Pointset_Powerset_Grid_t x`, `ppl_const_Pointset_Powerset_Grid_t y`, `int`
disjuncts) [**related**]
- 10.92.2.20 `int ppl_Pointset_Powerset_Grid_BGP99_generator_extrapolation_assign`
 (`ppl_Pointset_Powerset_Grid_t x`, `ppl_const_Pointset_Powerset_Grid_t y`, `int`
disjuncts) [**related**]
- 10.92.2.21 `int ppl_Pointset_Powerset_Grid_BHZ03_Grid_congruence_widening_assign`
 (`ppl_Pointset_Powerset_Grid_t x`, `ppl_const_Pointset_Powerset_Grid_t y`)
 [**related**]
- 10.92.2.22 `int ppl_Pointset_Powerset_Grid_BHZ03_Grid_generator_widening_assign`
 (`ppl_Pointset_Powerset_Grid_t x`, `ppl_const_Pointset_Powerset_Grid_t y`)
 [**related**]
- 10.92.2.23 `int ppl_Pointset_Powerset_Grid_bounded_affine_image` (`ppl_Pointset_Powerset_-`
`Grid_t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t lb`,
`ppl_const_Linear_Expression_t ub`, `ppl_const_Coefficient_t d`) [**related**]
- 10.92.2.24 `int ppl_Pointset_Powerset_Grid_bounded_affine_preimage` (`ppl_Pointset_-`
`Powerset_Grid_t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t lb`,
`ppl_const_Linear_Expression_t ub`, `ppl_const_Coefficient_t d`) [**related**]
- 10.92.2.25 `int ppl_Pointset_Powerset_Grid_bounds_from_above` (`ppl_const_-`
`Pointset_Powerset_Grid_t ph`, `ppl_const_Linear_Expression_t le`)
 [**related**]
- 10.92.2.26 `int ppl_Pointset_Powerset_Grid_bounds_from_below` (`ppl_const_-`
`Pointset_Powerset_Grid_t ph`, `ppl_const_Linear_Expression_t le`)
 [**related**]

- 10.92.2.27** `int ppl_Pointset_Powerset_Grid_concatenate_assign (ppl_Pointset_Powerset_Grid_t x,
ppl_const_Pointset_Powerset_Grid_t y)` [**related**]
- 10.92.2.28** `int ppl_Pointset_Powerset_Grid_constrains (ppl_Pointset_Powerset_Grid_t ph,
ppl_dimension_type var)` [**related**]
- 10.92.2.29** `int ppl_Pointset_Powerset_Grid_contains_integer_point (ppl_const_Pointset_
Powerset_Grid_t ph)` [**related**]
- 10.92.2.30** `int ppl_Pointset_Powerset_Grid_contains_Pointset_Powerset_Grid
(ppl_const_Pointset_Powerset_Grid_t x, ppl_const_Pointset_Powerset_Grid_t y)`
[**related**]
- 10.92.2.31** `int ppl_Pointset_Powerset_Grid_difference_assign (ppl_Pointset_Powerset_Grid_t x,
ppl_const_Pointset_Powerset_Grid_t y)` [**related**]
- 10.92.2.32** `int ppl_Pointset_Powerset_Grid_drop_disjunct (ppl_Pointset_
Powerset_Grid_t ps, ppl_const_Pointset_Powerset_Grid_iterator_t cit,
ppl_Pointset_Powerset_Grid_iterator_t it)` [**related**]
- 10.92.2.33** `int ppl_Pointset_Powerset_Grid_drop_disjuncts (ppl_Pointset_
Powerset_Grid_t ps, ppl_const_Pointset_Powerset_Grid_iterator_t first,
ppl_const_Pointset_Powerset_Grid_iterator_t last)` [**related**]
- 10.92.2.34** `int ppl_Pointset_Powerset_Grid_drop_some_non_integer_points
(ppl_Pointset_Powerset_Grid_t ph, int complexity)` [**related**]
- 10.92.2.35** `int ppl_Pointset_Powerset_Grid_drop_some_non_integer_points_2
(ppl_Pointset_Powerset_Grid_t ph, ppl_dimension_type ds[], size_t n, int complexity)`
[**related**]

- 10.92.2.36 `int ppl_Pointset_Powerset_Grid_equals_Pointset_Powerset_Grid`
 (`ppl_const_Pointset_Powerset_Grid_t x`, `ppl_const_Pointset_Powerset_Grid_t y`)
 [`related`]
- 10.92.2.37 `int ppl_Pointset_Powerset_Grid_expand_space_dimension` (`ppl_Pointset_Powerset_Grid_t ph`, `ppl_dimension_type d`, `ppl_dimension_type m`)
 [`related`]
- 10.92.2.38 `int ppl_Pointset_Powerset_Grid_external_memory_in_bytes`
 (`ppl_const_Pointset_Powerset_Grid_t ps`, `size_t * sz`) [`related`]
- 10.92.2.39 `int ppl_Pointset_Powerset_Grid_fold_space_dimensions` (`ppl_Pointset_Powerset_Grid_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`, `ppl_dimension_type d`)
 [`related`]
- 10.92.2.40 `int ppl_Pointset_Powerset_Grid_generalized_affine_image` (`ppl_Pointset_Powerset_Grid_t ph`, `ppl_dimension_type var`, `enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`) [`related`]
- 10.92.2.41 `int ppl_Pointset_Powerset_Grid_generalized_affine_image_lhs_rhs`
 (`ppl_Pointset_Powerset_Grid_t ph`, `ppl_const_Linear_Expression_t lhs`, `enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
 [`related`]
- 10.92.2.42 `int ppl_Pointset_Powerset_Grid_generalized_affine_preimage` (`ppl_Pointset_Powerset_Grid_t ph`, `ppl_dimension_type var`, `enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`) [`related`]
- 10.92.2.43 `int ppl_Pointset_Powerset_Grid_generalized_affine_preimage_lhs_rhs`
 (`ppl_Pointset_Powerset_Grid_t ph`, `ppl_const_Linear_Expression_t lhs`, `enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
 [`related`]

- 10.92.2.44** `int ppl_Pointset_Powerset_Grid_geometrically_covers_Pointset_Powerset_Grid`
(`ppl_const_Pointset_Powerset_Grid_t x`, `ppl_const_Pointset_Powerset_Grid_t y`)
[related]
- 10.92.2.45** `int ppl_Pointset_Powerset_Grid_geometrically_equals_Pointset_Powerset_Grid`
(`ppl_const_Pointset_Powerset_Grid_t x`, `ppl_const_Pointset_Powerset_Grid_t y`)
[related]
- 10.92.2.46** `int ppl_Pointset_Powerset_Grid_intersection_assign` (`ppl_Pointset_Powerset_Grid_t x`,
`ppl_const_Pointset_Powerset_Grid_t y`) [related]
- 10.92.2.47** `int ppl_Pointset_Powerset_Grid_is_bounded` (`ppl_const_Pointset_Powerset_Grid_t ph`)
[related]
- 10.92.2.48** `int ppl_Pointset_Powerset_Grid_is_discrete` (`ppl_const_Pointset_Powerset_Grid_t ph`)
[related]
- 10.92.2.49** `int ppl_Pointset_Powerset_Grid_is_disjoint_from_Pointset_Powerset_Grid`
(`ppl_const_Pointset_Powerset_Grid_t x`, `ppl_const_Pointset_Powerset_Grid_t y`)
[related]
- 10.92.2.50** `int ppl_Pointset_Powerset_Grid_is_empty` (`ppl_const_Pointset_Powerset_Grid_t ph`)
[related]
- 10.92.2.51** `int ppl_Pointset_Powerset_Grid_is_topologically_closed` (`ppl_const_Pointset_Powerset_Grid_t ph`) [related]
- 10.92.2.52** `int ppl_Pointset_Powerset_Grid_is_universe` (`ppl_const_Pointset_Powerset_Grid_t ph`)
[related]

- 10.92.2.53** `int ppl_Pointset_Powerset_Grid_map_space_dimensions (ppl_-
Pointset_Powerset_Grid_t ph, ppl_dimension_type maps[], size_t n)`
[related]
- 10.92.2.54** `int ppl_Pointset_Powerset_Grid_maximize (ppl_const_Pointset_Powerset_Grid_t ph,
ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d,
int * poptimum)` [related]
- 10.92.2.55** `int ppl_Pointset_Powerset_Grid_maximize_with_point (ppl_const_Pointset_-
Powerset_Grid_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n,
ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` [related]
- 10.92.2.56** `int ppl_Pointset_Powerset_Grid_minimize (ppl_const_Pointset_Powerset_Grid_t ph,
ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d,
int * poptimum)` [related]
- 10.92.2.57** `int ppl_Pointset_Powerset_Grid_minimize_with_point (ppl_const_Pointset_-
Powerset_Grid_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n,
ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` [related]
- 10.92.2.58** `int ppl_Pointset_Powerset_Grid_OK (ppl_const_Pointset_Powerset_Grid_t ph)`
[related]
- 10.92.2.59** `int ppl_Pointset_Powerset_Grid_omega_reduce (ppl_Pointset_Powerset_Grid_t ph)`
[related]
- 10.92.2.60** `int ppl_Pointset_Powerset_Grid_pairwise_reduce (ppl_Pointset_Powerset_Grid_t ph)`
[related]

- 10.92.2.61 `int ppl_Pointset_Powerset_Grid_refine_with_congruence`
(`ppl_Pointset_Powerset_Grid_t ph`, `ppl_const_Congruence_t c`) [`related`]
- 10.92.2.62 `int ppl_Pointset_Powerset_Grid_refine_with_congruences` (`ppl_-`
`Pointset_Powerset_Grid_t ph`, `ppl_const_Congruence_System_t cs`)
[`related`]
- 10.92.2.63 `int ppl_Pointset_Powerset_Grid_refine_with_constraint` (`ppl_Pointset_Powerset_-`
`Grid_t ph`, `ppl_const_Constraint_t c`) [`related`]
- 10.92.2.64 `int ppl_Pointset_Powerset_Grid_refine_with_constraints` (`ppl_-`
`Pointset_Powerset_Grid_t ph`, `ppl_const_Constraint_System_t cs`)
[`related`]
- 10.92.2.65 `int ppl_Pointset_Powerset_Grid_relation_with_Congruence`
(`ppl_const_Pointset_Powerset_Grid_t ph`, `ppl_const_Congruence_t c`) [`related`]
- 10.92.2.66 `int ppl_Pointset_Powerset_Grid_relation_with_Constraint`
(`ppl_const_Pointset_Powerset_Grid_t ph`, `ppl_const_Constraint_t c`) [`related`]
- 10.92.2.67 `int ppl_Pointset_Powerset_Grid_relation_with_Generator`
(`ppl_const_Pointset_Powerset_Grid_t ph`, `ppl_const_Generator_t c`) [`related`]
- 10.92.2.68 `int ppl_Pointset_Powerset_Grid_remove_higher_space_dimensions`
(`ppl_Pointset_Powerset_Grid_t ph`, `ppl_dimension_type d`) [`related`]
- 10.92.2.69 `int ppl_Pointset_Powerset_Grid_remove_space_dimensions`
(`ppl_Pointset_Powerset_Grid_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`) [`related`]

- 10.92.2.70** `int ppl_Pointset_Powerset_Grid_simplify_using_context_assign`
 (`ppl_Pointset_Powerset_Grid_t x`, `ppl_const_Pointset_Powerset_Grid_t y`)
 [`related`]
- 10.92.2.71** `int ppl_Pointset_Powerset_Grid_size` (`ppl_const_Pointset_Powerset_Grid_t ps`, `size_t * sz`) [`related`]
- 10.92.2.72** `int ppl_Pointset_Powerset_Grid_space_dimension` (`ppl_const_Pointset_Powerset_Grid_t ph`, `ppl_dimension_type * m`) [`related`]
- 10.92.2.73** `int ppl_Pointset_Powerset_Grid_strictly_contains_Pointset_Powerset_Grid`
 (`ppl_const_Pointset_Powerset_Grid_t x`, `ppl_const_Pointset_Powerset_Grid_t y`)
 [`related`]
- 10.92.2.74** `int ppl_Pointset_Powerset_Grid_time_elapse_assign` (`ppl_Pointset_Powerset_Grid_t x`,
`ppl_const_Pointset_Powerset_Grid_t y`) [`related`]
- 10.92.2.75** `int ppl_Pointset_Powerset_Grid_topological_closure_assign`
 (`ppl_Pointset_Powerset_Grid_t ph`) [`related`]
- 10.92.2.76** `int ppl_Pointset_Powerset_Grid_total_memory_in_bytes`
 (`ppl_const_Pointset_Powerset_Grid_t ps`, `size_t * sz`) [`related`]
- 10.92.2.77** `int ppl_Pointset_Powerset_Grid_unconstrain_space_dimension`
 (`ppl_Pointset_Powerset_Grid_t ph`, `ppl_dimension_type var`) [`related`]
- 10.92.2.78** `int ppl_Pointset_Powerset_Grid_unconstrain_space_dimensions`
 (`ppl_Pointset_Powerset_Grid_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`) [`related`]

10.92.2.79 `int ppl_Pointset_Powerset_Grid_upper_bound_assign (ppl_Pointset_Powerset_Grid_t x, ppl_const_Pointset_Powerset_Grid_t y) [related]`

10.92.2.80 `int ppl_Pointset_Powerset_Grid_upper_bound_assign_if_exact (ppl_Pointset_Powerset_Grid_t x, ppl_const_Pointset_Powerset_Grid_t y) [related]`

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.93 ppl_Pointset_Powerset_Int16_Box_const_iterator_tag Interface Reference

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Int16_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl\_new\_Pointset\_Powerset\_Int16\_Box\_const\_iterator (ppl_Pointset_Powerset_Int16_Box_const_iterator_t *pit)`
- `int ppl\_new\_Pointset\_Powerset\_Int16\_Box\_const\_iterator\_from\_const\_iterator (ppl_Pointset_Powerset_Int16_Box_const_iterator_t *px, ppl_const_Pointset_Powerset_Int16_Box_const_iterator_t y)`
- `int ppl\_Pointset\_Powerset\_Int16\_Box\_const\_iterator\_begin (ppl_const_Pointset_Powerset_Int16_Box_t ps, ppl_Pointset_Powerset_Int16_Box_const_iterator_t psit)`
- `int ppl\_Pointset\_Powerset\_Int16\_Box\_const\_iterator\_end (ppl_const_Pointset_Powerset_Int16_Box_t ps, ppl_Pointset_Powerset_Int16_Box_const_iterator_t psit)`
- `int ppl\_Pointset\_Powerset\_Int16\_Box\_const\_iterator\_equal\_test (ppl_const_Pointset_Powerset_Int16_Box_const_iterator_t x, ppl_const_Pointset_Powerset_Int16_Box_const_iterator_t y)`
- `int ppl\_Pointset\_Powerset\_Int16\_Box\_const\_iterator\_increment (ppl_Pointset_Powerset_Int16_Box_const_iterator_t psit)`
- `int ppl\_Pointset\_Powerset\_Int16\_Box\_const\_iterator\_decrement (ppl_Pointset_Powerset_Int16_Box_const_iterator_t psit)`
- `int ppl\_Pointset\_Powerset\_Int16\_Box\_const\_iterator\_dereference (ppl_const_Pointset_Powerset_Int16_Box_const_iterator_t ps, ppl_const_Int16_Box_t *d)`
- `int ppl\_delete\_Pointset\_Powerset\_Int16\_Box\_const\_iterator (ppl_const_Pointset_Powerset_Int16_Box_const_iterator_t psit)`

10.93.1 Detailed Description

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Int16_Box_tag](#).

10.93.2 Friends And Related Function Documentation

- 10.93.2.1** `int ppl_delete_Pointset_Powerset_Int16_Box_const_iterator`
`(ppl_const_Pointset_Powerset_Int16_Box_const_iterator_t psit)` [**related**]
- 10.93.2.2** `int ppl_new_Pointset_Powerset_Int16_Box_const_iterator`
`(ppl_Pointset_Powerset_Int16_Box_const_iterator_t * pit)` [**related**]
- 10.93.2.3** `int ppl_new_Pointset_Powerset_Int16_Box_const_iterator_from_const_iterator`
`(ppl_Pointset_Powerset_Int16_Box_const_iterator_t * px,
ppl_const_Pointset_Powerset_Int16_Box_const_iterator_t y)` [**related**]
- 10.93.2.4** `int ppl_Pointset_Powerset_Int16_Box_const_iterator_begin`
`(ppl_const_Pointset_Powerset_Int16_Box_t ps, ppl_Pointset_Powerset_Int16_Box_const_iterator_t psit)`
[**related**]
- 10.93.2.5** `int ppl_Pointset_Powerset_Int16_Box_const_iterator_decrement`
`(ppl_Pointset_Powerset_Int16_Box_const_iterator_t psit)` [**related**]
- 10.93.2.6** `int ppl_Pointset_Powerset_Int16_Box_const_iterator_dereference`
`(ppl_const_Pointset_Powerset_Int16_Box_const_iterator_t ps, ppl_const_Int16_Box_t * d)`
[**related**]
- 10.93.2.7** `int ppl_Pointset_Powerset_Int16_Box_const_iterator_end`
`(ppl_const_Pointset_Powerset_Int16_Box_t ps, ppl_Pointset_Powerset_Int16_Box_const_iterator_t psit)`
[**related**]
- 10.93.2.8** `int ppl_Pointset_Powerset_Int16_Box_const_iterator_equal_test`
`(ppl_const_Pointset_Powerset_Int16_Box_const_iterator_t x,
ppl_const_Pointset_Powerset_Int16_Box_const_iterator_t y)` [**related**]

10.93.2.9 `int ppl_Pointset_Powerset_Int16_Box_const_iterator_increment` (`ppl_Pointset_Powerset_Int16_Box_const_iterator_t psit`) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.94 `ppl_Pointset_Powerset_Int16_Box_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Int16_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_Int16_Box_iterator` (`ppl_Pointset_Powerset_Int16_Box_iterator_t *pit`)
- `int ppl_new_Pointset_Powerset_Int16_Box_iterator_from_iterator` (`ppl_Pointset_Powerset_Int16_Box_iterator_t *px`, `ppl_const_Pointset_Powerset_Int16_Box_iterator_t y`)
- `int ppl_Pointset_Powerset_Int16_Box_iterator_begin` (`ppl_Pointset_Powerset_Int16_Box_t ps`, `ppl_Pointset_Powerset_Int16_Box_iterator_t psit`)
- `int ppl_Pointset_Powerset_Int16_Box_iterator_end` (`ppl_Pointset_Powerset_Int16_Box_t ps`, `ppl_Pointset_Powerset_Int16_Box_iterator_t psit`)
- `int ppl_Pointset_Powerset_Int16_Box_iterator_equal_test` (`ppl_const_Pointset_Powerset_Int16_Box_iterator_t x`, `ppl_const_Pointset_Powerset_Int16_Box_iterator_t y`)
- `int ppl_Pointset_Powerset_Int16_Box_iterator_increment` (`ppl_Pointset_Powerset_Int16_Box_iterator_t psit`)
- `int ppl_Pointset_Powerset_Int16_Box_iterator_decrement` (`ppl_Pointset_Powerset_Int16_Box_iterator_t psit`)
- `int ppl_Pointset_Powerset_Int16_Box_iterator_dereference` (`ppl_const_Pointset_Powerset_Int16_Box_iterator_t ps`, `ppl_const_Int16_Box_t *d`)
- `int ppl_delete_Pointset_Powerset_Int16_Box_iterator` (`ppl_const_Pointset_Powerset_Int16_Box_iterator_t psit`)

10.94.1 Detailed Description

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Int16_Box_tag](#).

10.94.2 Friends And Related Function Documentation

10.94.2.1 `int ppl_delete_Pointset_Powerset_Int16_Box_iterator` (`ppl_const_Pointset_Powerset_Int16_Box_iterator_t psit`) [**related**]

- 10.94.2.2** `int ppl_new_Pointset_Powerset_Int16_Box_iterator (ppl_Pointset_Powerset_Int16_Box_iterator_t * pit)` [**related**]
- 10.94.2.3** `int ppl_new_Pointset_Powerset_Int16_Box_iterator_from_iterator (ppl_Pointset_Powerset_Int16_Box_iterator_t * px, ppl_const_Pointset_Powerset_Int16_Box_iterator_t y)` [**related**]
- 10.94.2.4** `int ppl_Pointset_Powerset_Int16_Box_iterator_begin (ppl_Pointset_Powerset_Int16_Box_t ps, ppl_Pointset_Powerset_Int16_Box_iterator_t psit)` [**related**]
- 10.94.2.5** `int ppl_Pointset_Powerset_Int16_Box_iterator_decrement (ppl_Pointset_Powerset_Int16_Box_iterator_t psit)` [**related**]
- 10.94.2.6** `int ppl_Pointset_Powerset_Int16_Box_iterator_dereference (ppl_const_Pointset_Powerset_Int16_Box_iterator_t ps, ppl_const_Int16_Box_t * d)` [**related**]
- 10.94.2.7** `int ppl_Pointset_Powerset_Int16_Box_iterator_end (ppl_Pointset_Powerset_Int16_Box_t ps, ppl_Pointset_Powerset_Int16_Box_iterator_t psit)` [**related**]
- 10.94.2.8** `int ppl_Pointset_Powerset_Int16_Box_iterator_equal_test (ppl_const_Pointset_Powerset_Int16_Box_iterator_t x, ppl_const_Pointset_Powerset_Int16_Box_iterator_t y)` [**related**]
- 10.94.2.9** `int ppl_Pointset_Powerset_Int16_Box_iterator_increment (ppl_Pointset_Powerset_Int16_Box_iterator_t psit)` [**related**]

The documentation for this interface was generated from the following file:

- [ppl.c.h](#)

10.95 ppl_Pointset_Powerset_Int16_Box_tag Interface Reference

Types and functions for [ppl_Pointset_Powerset_Int16_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- [int ppl_delete_Pointset_Powerset_Int16_Box](#) (ppl_const_Pointset_Powerset_Int16_Box_t ph)
- [int ppl_new_Pointset_Powerset_Int16_Box_from_space_dimension](#) (ppl_Pointset_Powerset_Int16_Box_t *pph, ppl_dimension_type d, int empty)
- [int ppl_new_Pointset_Powerset_Int16_Box_from_Pointset_Powerset_Int16_Box](#) (ppl_Pointset_Powerset_Int16_Box_t *pph, ppl_const_Pointset_Powerset_Int16_Box_t ph)
- [int ppl_new_Pointset_Powerset_Int16_Box_from_Int16_Box](#) (ppl_Pointset_Powerset_Int16_Box_t *pph, ppl_const_Int16_Box_t ph)
- [int ppl_new_Pointset_Powerset_Int16_Box_from_Pointset_Powerset_Int16_Box_with_complexity](#) (ppl_Pointset_Powerset_Int16_Box_t *pph, ppl_const_Pointset_Powerset_Int16_Box_t ph, int complexity)
- [int ppl_new_Pointset_Powerset_Int16_Box_from_Int16_Box_with_complexity](#) (ppl_Pointset_Powerset_Int16_Box_t *pph, ppl_const_Int16_Box_t ph, int complexity)
- [int ppl_new_Pointset_Powerset_Int16_Box_from_Constraint_System](#) (ppl_Pointset_Powerset_Int16_Box_t *pph, ppl_const_Constraint_System_t cs)
- [int ppl_new_Pointset_Powerset_Int16_Box_from_Congruence_System](#) (ppl_Pointset_Powerset_Int16_Box_t *pph, ppl_const_Congruence_System_t cs)
- [int ppl_Pointset_Powerset_Int16_Box_space_dimension](#) (ppl_const_Pointset_Powerset_Int16_Box_t ph, ppl_dimension_type *m)
- [int ppl_Pointset_Powerset_Int16_Box_affine_dimension](#) (ppl_const_Pointset_Powerset_Int16_Box_t ph, ppl_dimension_type *m)
- [int ppl_Pointset_Powerset_Int16_Box_relation_with_Constraint](#) (ppl_const_Pointset_Powerset_Int16_Box_t ph, ppl_const_Constraint_t c)
- [int ppl_Pointset_Powerset_Int16_Box_relation_with_Generator](#) (ppl_const_Pointset_Powerset_Int16_Box_t ph, ppl_const_Generator_t c)
- [int ppl_Pointset_Powerset_Int16_Box_relation_with_Congruence](#) (ppl_const_Pointset_Powerset_Int16_Box_t ph, ppl_const_Congruence_t c)
- [int ppl_Pointset_Powerset_Int16_Box_is_empty](#) (ppl_const_Pointset_Powerset_Int16_Box_t ph)
- [int ppl_Pointset_Powerset_Int16_Box_is_universe](#) (ppl_const_Pointset_Powerset_Int16_Box_t ph)
- [int ppl_Pointset_Powerset_Int16_Box_is_bounded](#) (ppl_const_Pointset_Powerset_Int16_Box_t ph)
- [int ppl_Pointset_Powerset_Int16_Box_contains_integer_point](#) (ppl_const_Pointset_Powerset_Int16_Box_t ph)
- [int ppl_Pointset_Powerset_Int16_Box_is_topologically_closed](#) (ppl_const_Pointset_Powerset_Int16_Box_t ph)
- [int ppl_Pointset_Powerset_Int16_Box_is_discrete](#) (ppl_const_Pointset_Powerset_Int16_Box_t ph)
- [int ppl_Pointset_Powerset_Int16_Box_topological_closure_assign](#) (ppl_Pointset_Powerset_Int16_Box_t ph)
- [int ppl_Pointset_Powerset_Int16_Box_pairwise_reduce](#) (ppl_Pointset_Powerset_Int16_Box_t ph)
- [int ppl_Pointset_Powerset_Int16_Box_omega_reduce](#) (ppl_Pointset_Powerset_Int16_Box_t ph)
- [int ppl_Pointset_Powerset_Int16_Box_bounds_from_above](#) (ppl_const_Pointset_Powerset_Int16_Box_t ph, ppl_const_Linear_Expression_t le)
- [int ppl_Pointset_Powerset_Int16_Box_bounds_from_below](#) (ppl_const_Pointset_Powerset_Int16_Box_t ph, ppl_const_Linear_Expression_t le)

- [int ppl_Pointset_Powerset_Int16_Box_maximize](#) (ppl_const_Pointset_Powerset_Int16_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- [int ppl_Pointset_Powerset_Int16_Box_minimize](#) (ppl_const_Pointset_Powerset_Int16_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- [int ppl_Pointset_Powerset_Int16_Box_maximize_with_point](#) (ppl_const_Pointset_Powerset_Int16_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- [int ppl_Pointset_Powerset_Int16_Box_minimize_with_point](#) (ppl_const_Pointset_Powerset_Int16_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- [int ppl_Pointset_Powerset_Int16_Box_contains_Pointset_Powerset_Int16_Box](#) (ppl_const_Pointset_Powerset_Int16_Box_t x, ppl_const_Pointset_Powerset_Int16_Box_t y)
- [int ppl_Pointset_Powerset_Int16_Box_strictly_contains_Pointset_Powerset_Int16_Box](#) (ppl_const_Pointset_Powerset_Int16_Box_t x, ppl_const_Pointset_Powerset_Int16_Box_t y)
- [int ppl_Pointset_Powerset_Int16_Box_is_disjoint_from_Pointset_Powerset_Int16_Box](#) (ppl_const_Pointset_Powerset_Int16_Box_t x, ppl_const_Pointset_Powerset_Int16_Box_t y)
- [int ppl_Pointset_Powerset_Int16_Box_geometrically_covers_Pointset_Powerset_Int16_Box](#) (ppl_const_Pointset_Powerset_Int16_Box_t x, ppl_const_Pointset_Powerset_Int16_Box_t y)
- [int ppl_Pointset_Powerset_Int16_Box_geometrically_equals_Pointset_Powerset_Int16_Box](#) (ppl_const_Pointset_Powerset_Int16_Box_t x, ppl_const_Pointset_Powerset_Int16_Box_t y)
- [int ppl_Pointset_Powerset_Int16_Box_equals_Pointset_Powerset_Int16_Box](#) (ppl_const_Pointset_Powerset_Int16_Box_t x, ppl_const_Pointset_Powerset_Int16_Box_t y)
- [int ppl_Pointset_Powerset_Int16_Box_OK](#) (ppl_const_Pointset_Powerset_Int16_Box_t ph)
- [int ppl_Pointset_Powerset_Int16_Box_add_constraint](#) (ppl_Pointset_Powerset_Int16_Box_t ph, ppl_const_Constraint_t c)
- [int ppl_Pointset_Powerset_Int16_Box_add_congruence](#) (ppl_Pointset_Powerset_Int16_Box_t ph, ppl_const_Congruence_t c)
- [int ppl_Pointset_Powerset_Int16_Box_add_constraints](#) (ppl_Pointset_Powerset_Int16_Box_t ph, ppl_const_Constraint_System_t cs)
- [int ppl_Pointset_Powerset_Int16_Box_add_congruences](#) (ppl_Pointset_Powerset_Int16_Box_t ph, ppl_const_Congruence_System_t cs)
- [int ppl_Pointset_Powerset_Int16_Box_refine_with_constraint](#) (ppl_Pointset_Powerset_Int16_Box_t ph, ppl_const_Constraint_t c)
- [int ppl_Pointset_Powerset_Int16_Box_refine_with_congruence](#) (ppl_Pointset_Powerset_Int16_Box_t ph, ppl_const_Congruence_t c)
- [int ppl_Pointset_Powerset_Int16_Box_refine_with_constraints](#) (ppl_Pointset_Powerset_Int16_Box_t ph, ppl_const_Constraint_System_t cs)
- [int ppl_Pointset_Powerset_Int16_Box_refine_with_congruences](#) (ppl_Pointset_Powerset_Int16_Box_t ph, ppl_const_Congruence_System_t cs)
- [int ppl_Pointset_Powerset_Int16_Box_intersection_assign](#) (ppl_Pointset_Powerset_Int16_Box_t x, ppl_const_Pointset_Powerset_Int16_Box_t y)
- [int ppl_Pointset_Powerset_Int16_Box_upper_bound_assign](#) (ppl_Pointset_Powerset_Int16_Box_t x, ppl_const_Pointset_Powerset_Int16_Box_t y)
- [int ppl_Pointset_Powerset_Int16_Box_difference_assign](#) (ppl_Pointset_Powerset_Int16_Box_t x, ppl_const_Pointset_Powerset_Int16_Box_t y)
- [int ppl_Pointset_Powerset_Int16_Box_concatenate_assign](#) (ppl_Pointset_Powerset_Int16_Box_t x, ppl_const_Pointset_Powerset_Int16_Box_t y)
- [int ppl_Pointset_Powerset_Int16_Box_time_elapse_assign](#) (ppl_Pointset_Powerset_Int16_Box_t x, ppl_const_Pointset_Powerset_Int16_Box_t y)
- [int ppl_Pointset_Powerset_Int16_Box_upper_bound_assign_if_exact](#) (ppl_Pointset_Powerset_Int16_Box_t x, ppl_const_Pointset_Powerset_Int16_Box_t y)

- int [ppl_Pointset_Powerset_Int16_Box_simplify_using_context_assign](#) (ppl_Pointset_Powerset_Int16_Box_t x, ppl_const_Pointset_Powerset_Int16_Box_t y)
- int [ppl_Pointset_Powerset_Int16_Box_constrains](#) (ppl_Pointset_Powerset_Int16_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_Int16_Box_unconstrain_space_dimension](#) (ppl_Pointset_Powerset_Int16_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_Int16_Box_unconstrain_space_dimensions](#) (ppl_Pointset_Powerset_Int16_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_Int16_Box_affine_image](#) (ppl_Pointset_Powerset_Int16_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Int16_Box_affine_preimage](#) (ppl_Pointset_Powerset_Int16_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Int16_Box_bounded_affine_image](#) (ppl_Pointset_Powerset_Int16_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Int16_Box_bounded_affine_preimage](#) (ppl_Pointset_Powerset_Int16_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Int16_Box_generalized_affine_image](#) (ppl_Pointset_Powerset_Int16_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Int16_Box_generalized_affine_preimage](#) (ppl_Pointset_Powerset_Int16_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Int16_Box_generalized_affine_image_lhs_rhs](#) (ppl_Pointset_Powerset_Int16_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_Int16_Box_generalized_affine_preimage_lhs_rhs](#) (ppl_Pointset_Powerset_Int16_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_Int16_Box_add_space_dimensions_and_embed](#) (ppl_Pointset_Powerset_Int16_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Int16_Box_add_space_dimensions_and_project](#) (ppl_Pointset_Powerset_Int16_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Int16_Box_remove_space_dimensions](#) (ppl_Pointset_Powerset_Int16_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_Int16_Box_remove_higher_space_dimensions](#) (ppl_Pointset_Powerset_Int16_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Int16_Box_expand_space_dimension](#) (ppl_Pointset_Powerset_Int16_Box_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Pointset_Powerset_Int16_Box_fold_space_dimensions](#) (ppl_Pointset_Powerset_Int16_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Int16_Box_map_space_dimensions](#) (ppl_Pointset_Powerset_Int16_Box_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_Pointset_Powerset_Int16_Box_drop_some_non_integer_points](#) (ppl_Pointset_Powerset_Int16_Box_t ph, int complexity)
- int [ppl_Pointset_Powerset_Int16_Box_drop_some_non_integer_points_2](#) (ppl_Pointset_Powerset_Int16_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_Pointset_Powerset_Int16_Box_external_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Int16_Box_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Int16_Box_total_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Int16_Box_t ps, size_t *sz)

- int [ppl_Pointset_Powerset_Int16_Box_size](#) (ppl_const_Pointset_Powerset_Int16_Box_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Int16_Box_add_disjunct](#) (ppl_Pointset_Powerset_Int16_Box_t ps, ppl_const_Int16_Box_t d)
- int [ppl_Pointset_Powerset_Int16_Box_drop_disjunct](#) (ppl_Pointset_Powerset_Int16_Box_t ps, ppl_const_Pointset_Powerset_Int16_Box_iterator_t cit, ppl_Pointset_Powerset_Int16_Box_iterator_t it)
- int [ppl_Pointset_Powerset_Int16_Box_drop_disjuncts](#) (ppl_Pointset_Powerset_Int16_Box_t ps, ppl_const_Pointset_Powerset_Int16_Box_iterator_t first, ppl_const_Pointset_Powerset_Int16_Box_iterator_t last)

10.95.1 Detailed Description

Types and functions for [ppl_Pointset_Powerset_Int16_Box_tag](#).

10.95.2 Friends And Related Function Documentation

10.95.2.1 int [ppl_delete_Pointset_Powerset_Int16_Box](#) (ppl_const_Pointset_Powerset_Int16_Box_t *ph*) [[related](#)]

10.95.2.2 int [ppl_new_Pointset_Powerset_Int16_Box_from_Congruence_System](#) (ppl_Pointset_Powerset_Int16_Box_t * *pph*, ppl_const_Congruence_System_t *cs*) [[related](#)]

10.95.2.3 int [ppl_new_Pointset_Powerset_Int16_Box_from_Constraint_System](#) (ppl_Pointset_Powerset_Int16_Box_t * *pph*, ppl_const_Constraint_System_t *cs*) [[related](#)]

10.95.2.4 int [ppl_new_Pointset_Powerset_Int16_Box_from_Int16_Box](#) (ppl_Pointset_Powerset_Int16_Box_t * *pph*, ppl_const_Int16_Box_t *ph*) [[related](#)]

10.95.2.5 int [ppl_new_Pointset_Powerset_Int16_Box_from_Int16_Box_with_complexity](#) (ppl_Pointset_Powerset_Int16_Box_t * *pph*, ppl_const_Int16_Box_t *ph*, int *complexity*) [[related](#)]

- 10.95.2.6** `int ppl_new_Pointset_Powerset_Int16_Box_from_Pointset_Powerset_Int16_Box`
 (`ppl_Pointset_Powerset_Int16_Box_t * pph`, `ppl_const_Pointset_Powerset_Int16_Box_t`
`ph`) [**related**]
- 10.95.2.7** `int ppl_new_Pointset_Powerset_Int16_Box_from_Pointset_Powerset_-`
`Int16_Box_with_complexity` (`ppl_Pointset_Powerset_Int16_Box_t * pph`,
`ppl_const_Pointset_Powerset_Int16_Box_t ph`, `int complexity`) [**related**]
- 10.95.2.8** `int ppl_new_Pointset_Powerset_Int16_Box_from_space_dimension`
 (`ppl_Pointset_Powerset_Int16_Box_t * pph`, `ppl_dimension_type d`, `int empty`)
 [**related**]
- 10.95.2.9** `int ppl_Pointset_Powerset_Int16_Box_add_congruence` (`ppl_Pointset_Powerset_Int16_-`
`Box_t ph`, `ppl_const_Congruence_t c`) [**related**]
- 10.95.2.10** `int ppl_Pointset_Powerset_Int16_Box_add_congruences` (`ppl_Pointset_-`
`Powerset_Int16_Box_t ph`, `ppl_const_Congruence_System_t cs`)
 [**related**]
- 10.95.2.11** `int ppl_Pointset_Powerset_Int16_Box_add_constraint` (`ppl_Pointset_Powerset_Int16_-`
`Box_t ph`, `ppl_const_Constraint_t c`) [**related**]
- 10.95.2.12** `int ppl_Pointset_Powerset_Int16_Box_add_constraints` (`ppl_Pointset_-`
`Powerset_Int16_Box_t ph`, `ppl_const_Constraint_System_t cs`)
 [**related**]
- 10.95.2.13** `int ppl_Pointset_Powerset_Int16_Box_add_disjunct` (`ppl_Pointset_Powerset_Int16_-`
`Box_t ps`, `ppl_const_Int16_Box_t d`) [**related**]

- 10.95.2.14 `int ppl_Pointset_Powerset_Int16_Box_add_space_dimensions_and_embed`
(`ppl_Pointset_Powerset_Int16_Box_t ph`, `ppl_dimension_type d`) [`related`]

- 10.95.2.15 `int ppl_Pointset_Powerset_Int16_Box_add_space_dimensions_and_project`
(`ppl_Pointset_Powerset_Int16_Box_t ph`, `ppl_dimension_type d`) [`related`]

- 10.95.2.16 `int ppl_Pointset_Powerset_Int16_Box_affine_dimension` (`ppl_const_-`
`Pointset_Powerset_Int16_Box_t ph`, `ppl_dimension_type * m`)
[`related`]

- 10.95.2.17 `int ppl_Pointset_Powerset_Int16_Box_affine_image` (`ppl_Pointset_Powerset_-`
`Int16_Box_t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [`related`]

- 10.95.2.18 `int ppl_Pointset_Powerset_Int16_Box_affine_preimage` (`ppl_Pointset_Powerset_-`
`Int16_Box_t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [`related`]

- 10.95.2.19 `int ppl_Pointset_Powerset_Int16_Box_bounded_affine_image` (`ppl_Pointset_-`
`Powerset_Int16_Box_t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t`
`lb`, `ppl_const_Linear_Expression_t ub`, `ppl_const_Coefficient_t d`) [`related`]

- 10.95.2.20 `int ppl_Pointset_Powerset_Int16_Box_bounded_affine_preimage` (`ppl_Pointset_-`
`Powerset_Int16_Box_t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t`
`lb`, `ppl_const_Linear_Expression_t ub`, `ppl_const_Coefficient_t d`) [`related`]

- 10.95.2.21 `int ppl_Pointset_Powerset_Int16_Box_bounds_from_above` (`ppl_const_-`
`Pointset_Powerset_Int16_Box_t ph`, `ppl_const_Linear_Expression_t le`)
[`related`]

- 10.95.2.22 `int ppl_Pointset_Powerset_Int16_Box_bounds_from_below (ppl_const_Pointset_Powerset_Int16_Box_t ph, ppl_const_Linear_Expression_t le)` [related]
- 10.95.2.23 `int ppl_Pointset_Powerset_Int16_Box_concatenate_assign (ppl_Pointset_Powerset_Int16_Box_t x, ppl_const_Pointset_Powerset_Int16_Box_t y)` [related]
- 10.95.2.24 `int ppl_Pointset_Powerset_Int16_Box_constrains (ppl_Pointset_Powerset_Int16_Box_t ph, ppl_dimension_type var)` [related]
- 10.95.2.25 `int ppl_Pointset_Powerset_Int16_Box_contains_integer_point (ppl_const_Pointset_Powerset_Int16_Box_t ph)` [related]
- 10.95.2.26 `int ppl_Pointset_Powerset_Int16_Box_contains_Pointset_Powerset_Int16_Box (ppl_const_Pointset_Powerset_Int16_Box_t x, ppl_const_Pointset_Powerset_Int16_Box_t y)` [related]
- 10.95.2.27 `int ppl_Pointset_Powerset_Int16_Box_difference_assign (ppl_Pointset_Powerset_Int16_Box_t x, ppl_const_Pointset_Powerset_Int16_Box_t y)` [related]
- 10.95.2.28 `int ppl_Pointset_Powerset_Int16_Box_drop_disjunct (ppl_Pointset_Powerset_Int16_Box_t ps, ppl_const_Pointset_Powerset_Int16_Box_iterator_t cit, ppl_Pointset_Powerset_Int16_Box_iterator_t it)` [related]
- 10.95.2.29 `int ppl_Pointset_Powerset_Int16_Box_drop_disjuncts (ppl_Pointset_Powerset_Int16_Box_t ps, ppl_const_Pointset_Powerset_Int16_Box_iterator_t first, ppl_const_Pointset_Powerset_Int16_Box_iterator_t last)` [related]

- 10.95.2.30 `int ppl_Pointset_Powerset_Int16_Box_drop_some_non_integer_points`
`(ppl_Pointset_Powerset_Int16_Box_t ph, int complexity)` [**related**]
- 10.95.2.31 `int ppl_Pointset_Powerset_Int16_Box_drop_some_non_integer_points_2`
`(ppl_Pointset_Powerset_Int16_Box_t ph, ppl_dimension_type ds[], size_t n, int`
`complexity)` [**related**]
- 10.95.2.32 `int ppl_Pointset_Powerset_Int16_Box_equals_Pointset_Powerset_Int16_Box` (`ppl_-`
`const_Pointset_Powerset_Int16_Box_t x, ppl_const_Pointset_Powerset_Int16_Box_t y`)
[related]
- 10.95.2.33 `int ppl_Pointset_Powerset_Int16_Box_expand_space_dimension`
`(ppl_Pointset_Powerset_Int16_Box_t ph, ppl_dimension_type d, ppl_dimension_type`
`m)` [**related**]
- 10.95.2.34 `int ppl_Pointset_Powerset_Int16_Box_external_memory_in_bytes`
`(ppl_const_Pointset_Powerset_Int16_Box_t ps, size_t * sz)` [**related**]
- 10.95.2.35 `int ppl_Pointset_Powerset_Int16_Box_fold_space_dimensions` (`ppl_Pointset_-`
`Powerset_Int16_Box_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d`)
[related]
- 10.95.2.36 `int ppl_Pointset_Powerset_Int16_Box_generalized_affine_image`
`(ppl_Pointset_Powerset_Int16_Box_t ph, ppl_dimension_type var, enum`
`ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le,`
`ppl_const_Coefficient_t d)` [**related**]
- 10.95.2.37 `int ppl_Pointset_Powerset_Int16_Box_generalized_affine_image_lhs_rhs`
`(ppl_Pointset_Powerset_Int16_Box_t ph, ppl_const_Linear_Expression_t lhs,`
`enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)`
[related]

- 10.95.2.38** int ppl_Pointset_Powerset_Int16_Box_generalized_affine_preimage
(ppl_Pointset_Powerset_Int16_Box_t *ph*, ppl_dimension_type *var*, enum
ppl_enum_Constraint_Type *relysym*, ppl_const_Linear_Expression_t *le*,
ppl_const_Coefficient_t *d*) [**related**]
- 10.95.2.39** int ppl_Pointset_Powerset_Int16_Box_generalized_affine_preimage_lhs_rhs
(ppl_Pointset_Powerset_Int16_Box_t *ph*, ppl_const_Linear_Expression_t *lhs*,
enum ppl_enum_Constraint_Type *relysym*, ppl_const_Linear_Expression_t *rhs*)
[**related**]
- 10.95.2.40** int ppl_Pointset_Powerset_Int16_Box_geometrically_covers_Pointset_
Powerset_Int16_Box (ppl_const_Pointset_Powerset_Int16_Box_t *x*,
ppl_const_Pointset_Powerset_Int16_Box_t *y*) [**related**]
- 10.95.2.41** int ppl_Pointset_Powerset_Int16_Box_geometrically_equals_Pointset_
Powerset_Int16_Box (ppl_const_Pointset_Powerset_Int16_Box_t *x*,
ppl_const_Pointset_Powerset_Int16_Box_t *y*) [**related**]
- 10.95.2.42** int ppl_Pointset_Powerset_Int16_Box_intersection_assign (ppl_Pointset_
Powerset_Int16_Box_t *x*, ppl_const_Pointset_Powerset_Int16_Box_t *y*)
[**related**]
- 10.95.2.43** int ppl_Pointset_Powerset_Int16_Box_is_bounded (ppl_const_Pointset_Powerset_
Int16_Box_t *ph*) [**related**]
- 10.95.2.44** int ppl_Pointset_Powerset_Int16_Box_is_discrete (ppl_const_Pointset_Powerset_
Int16_Box_t *ph*) [**related**]
- 10.95.2.45** int ppl_Pointset_Powerset_Int16_Box_is_disjoint_from_Pointset_
Powerset_Int16_Box (ppl_const_Pointset_Powerset_Int16_Box_t *x*,
ppl_const_Pointset_Powerset_Int16_Box_t *y*) [**related**]

- 10.95.2.46** `int ppl_Pointset_Powerset_Int16_Box_is_empty (ppl_const_Pointset_Powerset_Int16_Box_t ph)` [**related**]
- 10.95.2.47** `int ppl_Pointset_Powerset_Int16_Box_is_topologically_closed (ppl_const_Pointset_Powerset_Int16_Box_t ph)` [**related**]
- 10.95.2.48** `int ppl_Pointset_Powerset_Int16_Box_is_universe (ppl_const_Pointset_Powerset_Int16_Box_t ph)` [**related**]
- 10.95.2.49** `int ppl_Pointset_Powerset_Int16_Box_map_space_dimensions (ppl_Pointset_Powerset_Int16_Box_t ph, ppl_dimension_type maps[], size_t n)` [**related**]
- 10.95.2.50** `int ppl_Pointset_Powerset_Int16_Box_maximize (ppl_const_Pointset_Powerset_Int16_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [**related**]
- 10.95.2.51** `int ppl_Pointset_Powerset_Int16_Box_maximize_with_point (ppl_const_Pointset_Powerset_Int16_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` [**related**]
- 10.95.2.52** `int ppl_Pointset_Powerset_Int16_Box_minimize (ppl_const_Pointset_Powerset_Int16_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [**related**]
- 10.95.2.53** `int ppl_Pointset_Powerset_Int16_Box_minimize_with_point (ppl_const_Pointset_Powerset_Int16_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` [**related**]

- 10.95.2.54 `int ppl_Pointset_Powerset_Int16_Box_OK (ppl_const_Pointset_Powerset_Int16_Box_t ph)` [related]
- 10.95.2.55 `int ppl_Pointset_Powerset_Int16_Box_omega_reduce (ppl_Pointset_Powerset_Int16_Box_t ph)` [related]
- 10.95.2.56 `int ppl_Pointset_Powerset_Int16_Box_pairwise_reduce (ppl_Pointset_Powerset_Int16_Box_t ph)` [related]
- 10.95.2.57 `int ppl_Pointset_Powerset_Int16_Box_refine_with_congruence (ppl_Pointset_Powerset_Int16_Box_t ph, ppl_const_Congruence_t c)` [related]
- 10.95.2.58 `int ppl_Pointset_Powerset_Int16_Box_refine_with_congruences (ppl_Pointset_Powerset_Int16_Box_t ph, ppl_const_Congruence_System_t cs)` [related]
- 10.95.2.59 `int ppl_Pointset_Powerset_Int16_Box_refine_with_constraint (ppl_Pointset_Powerset_Int16_Box_t ph, ppl_const_Constraint_t c)` [related]
- 10.95.2.60 `int ppl_Pointset_Powerset_Int16_Box_refine_with_constraints (ppl_Pointset_Powerset_Int16_Box_t ph, ppl_const_Constraint_System_t cs)` [related]
- 10.95.2.61 `int ppl_Pointset_Powerset_Int16_Box_relation_with_Congruence (ppl_const_Pointset_Powerset_Int16_Box_t ph, ppl_const_Congruence_t c)` [related]
- 10.95.2.62 `int ppl_Pointset_Powerset_Int16_Box_relation_with_Constraint (ppl_const_Pointset_Powerset_Int16_Box_t ph, ppl_const_Constraint_t c)` [related]

- 10.95.2.63 `int ppl_Pointset_Powerset_Int16_Box_relation_with_Generator`
 (`ppl_const_Pointset_Powerset_Int16_Box_t ph`, `ppl_const_Generator_t c`)
 [`related`]
- 10.95.2.64 `int ppl_Pointset_Powerset_Int16_Box_remove_higher_space_dimensions`
 (`ppl_Pointset_Powerset_Int16_Box_t ph`, `ppl_dimension_type d`) [`related`]
- 10.95.2.65 `int ppl_Pointset_Powerset_Int16_Box_remove_space_dimensions`
 (`ppl_Pointset_Powerset_Int16_Box_t ph`, `ppl_dimension_type ds[]`, `size_t n`)
 [`related`]
- 10.95.2.66 `int ppl_Pointset_Powerset_Int16_Box_simplify_using_context_assign`
 (`ppl_Pointset_Powerset_Int16_Box_t x`, `ppl_const_Pointset_Powerset_Int16_Box_t y`)
 [`related`]
- 10.95.2.67 `int ppl_Pointset_Powerset_Int16_Box_size` (`ppl_const_Pointset_Powerset_Int16_Box_t`
`ps`, `size_t * sz`) [`related`]
- 10.95.2.68 `int ppl_Pointset_Powerset_Int16_Box_space_dimension` (`ppl_const -`
`Pointset_Powerset_Int16_Box_t ph`, `ppl_dimension_type * m`)
 [`related`]
- 10.95.2.69 `int ppl_Pointset_Powerset_Int16_Box_strictly_contains_Pointset -`
`Powerset_Int16_Box` (`ppl_const_Pointset_Powerset_Int16_Box_t x`,
`ppl_const_Pointset_Powerset_Int16_Box_t y`) [`related`]
- 10.95.2.70 `int ppl_Pointset_Powerset_Int16_Box_time_elapse_assign` (`ppl_Pointset -`
`Powerset_Int16_Box_t x`, `ppl_const_Pointset_Powerset_Int16_Box_t y`)
 [`related`]

- 10.95.2.71** `int ppl_Pointset_Powerset_Int16_Box_topological_closure_assign`
 (`ppl_Pointset_Powerset_Int16_Box_t ph`) [`related`]
- 10.95.2.72** `int ppl_Pointset_Powerset_Int16_Box_total_memory_in_bytes`
 (`ppl_const_Pointset_Powerset_Int16_Box_t ps`, `size_t * sz`) [`related`]
- 10.95.2.73** `int ppl_Pointset_Powerset_Int16_Box_unconstrain_space_dimension`
 (`ppl_Pointset_Powerset_Int16_Box_t ph`, `ppl_dimension_type var`) [`related`]
- 10.95.2.74** `int ppl_Pointset_Powerset_Int16_Box_unconstrain_space_dimensions`
 (`ppl_Pointset_Powerset_Int16_Box_t ph`, `ppl_dimension_type ds[]`, `size_t n`)
 [`related`]
- 10.95.2.75** `int ppl_Pointset_Powerset_Int16_Box_upper_bound_assign` (`ppl_Pointset_Powerset_Int16_Box_t x`, `ppl_const_Pointset_Powerset_Int16_Box_t y`)
 [`related`]
- 10.95.2.76** `int ppl_Pointset_Powerset_Int16_Box_upper_bound_assign_if_exact`
 (`ppl_Pointset_Powerset_Int16_Box_t x`, `ppl_const_Pointset_Powerset_Int16_Box_t y`)
 [`related`]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.96 `ppl_Pointset_Powerset_Int32_Box_const_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Int32_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int` [ppl_new_Pointset_Powerset_Int32_Box_const_iterator](#) (`ppl_Pointset_Powerset_Int32_Box_const_iterator_t *pit`)

- `int ppl_new_Pointset_Powerset_Int32_Box_const_iterator_from_const_iterator` (`ppl_Pointset_Powerset_Int32_Box_const_iterator_t *px`, `ppl_const_Pointset_Powerset_Int32_Box_const_iterator_t y`)
- `int ppl_Pointset_Powerset_Int32_Box_const_iterator_begin` (`ppl_const_Pointset_Powerset_Int32_Box_t ps`, `ppl_Pointset_Powerset_Int32_Box_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Int32_Box_const_iterator_end` (`ppl_const_Pointset_Powerset_Int32_Box_t ps`, `ppl_Pointset_Powerset_Int32_Box_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Int32_Box_const_iterator_equal_test` (`ppl_const_Pointset_Powerset_Int32_Box_const_iterator_t x`, `ppl_const_Pointset_Powerset_Int32_Box_const_iterator_t y`)
- `int ppl_Pointset_Powerset_Int32_Box_const_iterator_increment` (`ppl_Pointset_Powerset_Int32_Box_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Int32_Box_const_iterator_decrement` (`ppl_Pointset_Powerset_Int32_Box_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Int32_Box_const_iterator_dereference` (`ppl_const_Pointset_Powerset_Int32_Box_const_iterator_t ps`, `ppl_const_Int32_Box_t *d`)
- `int ppl_delete_Pointset_Powerset_Int32_Box_const_iterator` (`ppl_const_Pointset_Powerset_Int32_Box_const_iterator_t psit`)

10.96.1 Detailed Description

Types and functions for iterating on the disjuncts of a const `ppl_Pointset_Powerset_Int32_Box_tag`.

10.96.2 Friends And Related Function Documentation

- 10.96.2.1** `int ppl_delete_Pointset_Powerset_Int32_Box_const_iterator`
(`ppl_const_Pointset_Powerset_Int32_Box_const_iterator_t psit`) [**related**]
- 10.96.2.2** `int ppl_new_Pointset_Powerset_Int32_Box_const_iterator`
(`ppl_Pointset_Powerset_Int32_Box_const_iterator_t *pit`) [**related**]
- 10.96.2.3** `int ppl_new_Pointset_Powerset_Int32_Box_const_iterator_from_const_iterator`
(`ppl_Pointset_Powerset_Int32_Box_const_iterator_t *px`, `ppl_const_Pointset_Powerset_Int32_Box_const_iterator_t y`) [**related**]
- 10.96.2.4** `int ppl_Pointset_Powerset_Int32_Box_const_iterator_begin` (`ppl_const_Pointset_Powerset_Int32_Box_t ps`, `ppl_Pointset_Powerset_Int32_Box_const_iterator_t psit`) [**related**]
- 10.96.2.5** `int ppl_Pointset_Powerset_Int32_Box_const_iterator_decrement`
(`ppl_Pointset_Powerset_Int32_Box_const_iterator_t psit`) [**related**]

- 10.96.2.6** `int ppl_Pointset_Powerset_Int32_Box_const_iterator_dereference`
 (`ppl_const_Pointset_Powerset_Int32_Box_const_iterator_t ps`, `ppl_const_Int32_Box_t *d`) [**related**]
- 10.96.2.7** `int ppl_Pointset_Powerset_Int32_Box_const_iterator_end` (`ppl_const_Pointset_Powerset_Int32_Box_t ps`, `ppl_Pointset_Powerset_Int32_Box_const_iterator_t psit`) [**related**]
- 10.96.2.8** `int ppl_Pointset_Powerset_Int32_Box_const_iterator_equal_test`
 (`ppl_const_Pointset_Powerset_Int32_Box_const_iterator_t x`,
`ppl_const_Pointset_Powerset_Int32_Box_const_iterator_t y`) [**related**]
- 10.96.2.9** `int ppl_Pointset_Powerset_Int32_Box_const_iterator_increment`
 (`ppl_Pointset_Powerset_Int32_Box_const_iterator_t psit`) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.97 `ppl_Pointset_Powerset_Int32_Box_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Int32_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_Int32_Box_iterator` (`ppl_Pointset_Powerset_Int32_Box_iterator_t *pit`)
- `int ppl_new_Pointset_Powerset_Int32_Box_iterator_from_iterator` (`ppl_Pointset_Powerset_Int32_Box_iterator_t *px`, `ppl_const_Pointset_Powerset_Int32_Box_iterator_t y`)
- `int ppl_Pointset_Powerset_Int32_Box_iterator_begin` (`ppl_Pointset_Powerset_Int32_Box_t ps`, `ppl_Pointset_Powerset_Int32_Box_iterator_t psit`)
- `int ppl_Pointset_Powerset_Int32_Box_iterator_end` (`ppl_Pointset_Powerset_Int32_Box_t ps`, `ppl_Pointset_Powerset_Int32_Box_iterator_t psit`)
- `int ppl_Pointset_Powerset_Int32_Box_iterator_equal_test` (`ppl_const_Pointset_Powerset_Int32_Box_iterator_t x`, `ppl_const_Pointset_Powerset_Int32_Box_iterator_t y`)
- `int ppl_Pointset_Powerset_Int32_Box_iterator_increment` (`ppl_Pointset_Powerset_Int32_Box_iterator_t psit`)
- `int ppl_Pointset_Powerset_Int32_Box_iterator_decrement` (`ppl_Pointset_Powerset_Int32_Box_iterator_t psit`)

- int [ppl_Pointset_Powerset_Int32_Box_iterator_dereference](#) (ppl_const_Pointset_Powerset_Int32_Box_iterator_t ps, ppl_const_Int32_Box_t *d)
- int [ppl_delete_Pointset_Powerset_Int32_Box_iterator](#) (ppl_const_Pointset_Powerset_Int32_Box_iterator_t psit)

10.97.1 Detailed Description

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Int32_Box_tag](#).

10.97.2 Friends And Related Function Documentation

10.97.2.1 int [ppl_delete_Pointset_Powerset_Int32_Box_iterator](#) (ppl_const_Pointset_Powerset_Int32_Box_iterator_t *psit*) [[related](#)]

10.97.2.2 int [ppl_new_Pointset_Powerset_Int32_Box_iterator](#) (ppl_Pointset_Powerset_Int32_Box_iterator_t * *pit*) [[related](#)]

10.97.2.3 int [ppl_new_Pointset_Powerset_Int32_Box_iterator_from_iterator](#) (ppl_Pointset_Powerset_Int32_Box_iterator_t * *px*, ppl_const_Pointset_Powerset_Int32_Box_iterator_t *y*) [[related](#)]

10.97.2.4 int [ppl_Pointset_Powerset_Int32_Box_iterator_begin](#) (ppl_Pointset_Powerset_Int32_Box_t *ps*, ppl_Pointset_Powerset_Int32_Box_iterator_t *psit*) [[related](#)]

10.97.2.5 int [ppl_Pointset_Powerset_Int32_Box_iterator_decrement](#) (ppl_Pointset_Powerset_Int32_Box_iterator_t *psit*) [[related](#)]

10.97.2.6 int [ppl_Pointset_Powerset_Int32_Box_iterator_dereference](#) (ppl_const_Pointset_Powerset_Int32_Box_iterator_t *ps*, ppl_const_Int32_Box_t * *d*) [[related](#)]

- 10.97.2.7** `int ppl_Pointset_Powerset_Int32_Box_iterator_end (ppl_Pointset_Powerset_Int32_Box_t ps, ppl_Pointset_Powerset_Int32_Box_iterator_t psit)` **[related]**
- 10.97.2.8** `int ppl_Pointset_Powerset_Int32_Box_iterator_equal_test (ppl_const_Pointset_Powerset_Int32_Box_iterator_t x, ppl_const_Pointset_Powerset_Int32_Box_iterator_t y)` **[related]**
- 10.97.2.9** `int ppl_Pointset_Powerset_Int32_Box_iterator_increment (ppl_Pointset_Powerset_Int32_Box_iterator_t psit)` **[related]**

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.98 ppl_Pointset_Powerset_Int32_Box_tag Interface Reference

Types and functions for [ppl_Pointset_Powerset_Int32_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Pointset_Powerset_Int32_Box (ppl_const_Pointset_Powerset_Int32_Box_t ph)`
- `int ppl_new_Pointset_Powerset_Int32_Box_from_space_dimension (ppl_Pointset_Powerset_Int32_Box_t *pph, ppl_dimension_type d, int empty)`
- `int ppl_new_Pointset_Powerset_Int32_Box_from_Pointset_Powerset_Int32_Box (ppl_Pointset_Powerset_Int32_Box_t *pph, ppl_const_Pointset_Powerset_Int32_Box_t ph)`
- `int ppl_new_Pointset_Powerset_Int32_Box_from_Int32_Box (ppl_Pointset_Powerset_Int32_Box_t *pph, ppl_const_Int32_Box_t ph)`
- `int ppl_new_Pointset_Powerset_Int32_Box_from_Pointset_Powerset_Int32_Box_with_complexity (ppl_Pointset_Powerset_Int32_Box_t *pph, ppl_const_Pointset_Powerset_Int32_Box_t ph, int complexity)`
- `int ppl_new_Pointset_Powerset_Int32_Box_from_Int32_Box_with_complexity (ppl_Pointset_Powerset_Int32_Box_t *pph, ppl_const_Int32_Box_t ph, int complexity)`
- `int ppl_new_Pointset_Powerset_Int32_Box_from_Constraint_System (ppl_Pointset_Powerset_Int32_Box_t *pph, ppl_const_Constraint_System_t cs)`
- `int ppl_new_Pointset_Powerset_Int32_Box_from_Congruence_System (ppl_Pointset_Powerset_Int32_Box_t *pph, ppl_const_Congruence_System_t cs)`
- `int ppl_Pointset_Powerset_Int32_Box_space_dimension (ppl_const_Pointset_Powerset_Int32_Box_t ph, ppl_dimension_type *m)`
- `int ppl_Pointset_Powerset_Int32_Box_affine_dimension (ppl_const_Pointset_Powerset_Int32_Box_t ph, ppl_dimension_type *m)`

- [int ppl_Pointset_Powerset_Int32_Box_relation_with_Constraint](#) (ppl_const_Pointset_Powerset_Int32_Box_t ph, ppl_const_Constraint_t c)
- [int ppl_Pointset_Powerset_Int32_Box_relation_with_Generator](#) (ppl_const_Pointset_Powerset_Int32_Box_t ph, ppl_const_Generator_t c)
- [int ppl_Pointset_Powerset_Int32_Box_relation_with_Congruence](#) (ppl_const_Pointset_Powerset_Int32_Box_t ph, ppl_const_Congruence_t c)
- [int ppl_Pointset_Powerset_Int32_Box_is_empty](#) (ppl_const_Pointset_Powerset_Int32_Box_t ph)
- [int ppl_Pointset_Powerset_Int32_Box_is_universe](#) (ppl_const_Pointset_Powerset_Int32_Box_t ph)
- [int ppl_Pointset_Powerset_Int32_Box_is_bounded](#) (ppl_const_Pointset_Powerset_Int32_Box_t ph)
- [int ppl_Pointset_Powerset_Int32_Box_contains_integer_point](#) (ppl_const_Pointset_Powerset_Int32_Box_t ph)
- [int ppl_Pointset_Powerset_Int32_Box_is_topologically_closed](#) (ppl_const_Pointset_Powerset_Int32_Box_t ph)
- [int ppl_Pointset_Powerset_Int32_Box_is_discrete](#) (ppl_const_Pointset_Powerset_Int32_Box_t ph)
- [int ppl_Pointset_Powerset_Int32_Box_topological_closure_assign](#) (ppl_Pointset_Powerset_Int32_Box_t ph)
- [int ppl_Pointset_Powerset_Int32_Box_pairwise_reduce](#) (ppl_Pointset_Powerset_Int32_Box_t ph)
- [int ppl_Pointset_Powerset_Int32_Box_omega_reduce](#) (ppl_Pointset_Powerset_Int32_Box_t ph)
- [int ppl_Pointset_Powerset_Int32_Box_bounds_from_above](#) (ppl_const_Pointset_Powerset_Int32_Box_t ph, ppl_const_Linear_Expression_t le)
- [int ppl_Pointset_Powerset_Int32_Box_bounds_from_below](#) (ppl_const_Pointset_Powerset_Int32_Box_t ph, ppl_const_Linear_Expression_t le)
- [int ppl_Pointset_Powerset_Int32_Box_maximize](#) (ppl_const_Pointset_Powerset_Int32_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- [int ppl_Pointset_Powerset_Int32_Box_minimize](#) (ppl_const_Pointset_Powerset_Int32_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- [int ppl_Pointset_Powerset_Int32_Box_maximize_with_point](#) (ppl_const_Pointset_Powerset_Int32_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- [int ppl_Pointset_Powerset_Int32_Box_minimize_with_point](#) (ppl_const_Pointset_Powerset_Int32_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- [int ppl_Pointset_Powerset_Int32_Box_contains_Pointset_Powerset_Int32_Box](#) (ppl_const_Pointset_Powerset_Int32_Box_t x, ppl_const_Pointset_Powerset_Int32_Box_t y)
- [int ppl_Pointset_Powerset_Int32_Box_strictly_contains_Pointset_Powerset_Int32_Box](#) (ppl_const_Pointset_Powerset_Int32_Box_t x, ppl_const_Pointset_Powerset_Int32_Box_t y)
- [int ppl_Pointset_Powerset_Int32_Box_is_disjoint_from_Pointset_Powerset_Int32_Box](#) (ppl_const_Pointset_Powerset_Int32_Box_t x, ppl_const_Pointset_Powerset_Int32_Box_t y)
- [int ppl_Pointset_Powerset_Int32_Box_geometrically_covers_Pointset_Powerset_Int32_Box](#) (ppl_const_Pointset_Powerset_Int32_Box_t x, ppl_const_Pointset_Powerset_Int32_Box_t y)
- [int ppl_Pointset_Powerset_Int32_Box_geometrically_equals_Pointset_Powerset_Int32_Box](#) (ppl_const_Pointset_Powerset_Int32_Box_t x, ppl_const_Pointset_Powerset_Int32_Box_t y)
- [int ppl_Pointset_Powerset_Int32_Box_equals_Pointset_Powerset_Int32_Box](#) (ppl_const_Pointset_Powerset_Int32_Box_t x, ppl_const_Pointset_Powerset_Int32_Box_t y)
- [int ppl_Pointset_Powerset_Int32_Box_OK](#) (ppl_const_Pointset_Powerset_Int32_Box_t ph)
- [int ppl_Pointset_Powerset_Int32_Box_add_constraint](#) (ppl_Pointset_Powerset_Int32_Box_t ph, ppl_const_Constraint_t c)
- [int ppl_Pointset_Powerset_Int32_Box_add_congruence](#) (ppl_Pointset_Powerset_Int32_Box_t ph, ppl_const_Congruence_t c)
- [int ppl_Pointset_Powerset_Int32_Box_add_constraints](#) (ppl_Pointset_Powerset_Int32_Box_t ph, ppl_const_Constraint_System_t cs)

- int [ppl_Pointset_Powerset_Int32_Box_add_congruences](#) (ppl_Pointset_Powerset_Int32_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_Int32_Box_refine_with_constraint](#) (ppl_Pointset_Powerset_Int32_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Int32_Box_refine_with_congruence](#) (ppl_Pointset_Powerset_Int32_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Int32_Box_refine_with_constraints](#) (ppl_Pointset_Powerset_Int32_Box_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_Int32_Box_refine_with_congruences](#) (ppl_Pointset_Powerset_Int32_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_Int32_Box_intersection_assign](#) (ppl_Pointset_Powerset_Int32_Box_t x, ppl_const_Pointset_Powerset_Int32_Box_t y)
- int [ppl_Pointset_Powerset_Int32_Box_upper_bound_assign](#) (ppl_Pointset_Powerset_Int32_Box_t x, ppl_const_Pointset_Powerset_Int32_Box_t y)
- int [ppl_Pointset_Powerset_Int32_Box_difference_assign](#) (ppl_Pointset_Powerset_Int32_Box_t x, ppl_const_Pointset_Powerset_Int32_Box_t y)
- int [ppl_Pointset_Powerset_Int32_Box_concatenate_assign](#) (ppl_Pointset_Powerset_Int32_Box_t x, ppl_const_Pointset_Powerset_Int32_Box_t y)
- int [ppl_Pointset_Powerset_Int32_Box_time_elapse_assign](#) (ppl_Pointset_Powerset_Int32_Box_t x, ppl_const_Pointset_Powerset_Int32_Box_t y)
- int [ppl_Pointset_Powerset_Int32_Box_upper_bound_assign_if_exact](#) (ppl_Pointset_Powerset_Int32_Box_t x, ppl_const_Pointset_Powerset_Int32_Box_t y)
- int [ppl_Pointset_Powerset_Int32_Box_simplify_using_context_assign](#) (ppl_Pointset_Powerset_Int32_Box_t x, ppl_const_Pointset_Powerset_Int32_Box_t y)
- int [ppl_Pointset_Powerset_Int32_Box_constrains](#) (ppl_Pointset_Powerset_Int32_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_Int32_Box_unconstrain_space_dimension](#) (ppl_Pointset_Powerset_Int32_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_Int32_Box_unconstrain_space_dimensions](#) (ppl_Pointset_Powerset_Int32_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_Int32_Box_affine_image](#) (ppl_Pointset_Powerset_Int32_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Int32_Box_affine_preimage](#) (ppl_Pointset_Powerset_Int32_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Int32_Box_bounded_affine_image](#) (ppl_Pointset_Powerset_Int32_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Int32_Box_bounded_affine_preimage](#) (ppl_Pointset_Powerset_Int32_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Int32_Box_generalized_affine_image](#) (ppl_Pointset_Powerset_Int32_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Int32_Box_generalized_affine_preimage](#) (ppl_Pointset_Powerset_Int32_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Int32_Box_generalized_affine_image_lhs_rhs](#) (ppl_Pointset_Powerset_Int32_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_Int32_Box_generalized_affine_preimage_lhs_rhs](#) (ppl_Pointset_Powerset_Int32_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)

- `int ppl_Pointset_Powerset_Int32_Box_add_space_dimensions_and_embed` (`ppl_Pointset_Powerset_Int32_Box_t ph`, `ppl_dimension_type d`)
- `int ppl_Pointset_Powerset_Int32_Box_add_space_dimensions_and_project` (`ppl_Pointset_Powerset_Int32_Box_t ph`, `ppl_dimension_type d`)
- `int ppl_Pointset_Powerset_Int32_Box_remove_space_dimensions` (`ppl_Pointset_Powerset_Int32_Box_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`)
- `int ppl_Pointset_Powerset_Int32_Box_remove_higher_space_dimensions` (`ppl_Pointset_Powerset_Int32_Box_t ph`, `ppl_dimension_type d`)
- `int ppl_Pointset_Powerset_Int32_Box_expand_space_dimension` (`ppl_Pointset_Powerset_Int32_Box_t ph`, `ppl_dimension_type d`, `ppl_dimension_type m`)
- `int ppl_Pointset_Powerset_Int32_Box_fold_space_dimensions` (`ppl_Pointset_Powerset_Int32_Box_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`, `ppl_dimension_type d`)
- `int ppl_Pointset_Powerset_Int32_Box_map_space_dimensions` (`ppl_Pointset_Powerset_Int32_Box_t ph`, `ppl_dimension_type maps[ ]`, `size_t n`)
- `int ppl_Pointset_Powerset_Int32_Box_drop_some_non_integer_points` (`ppl_Pointset_Powerset_Int32_Box_t ph`, `int complexity`)
- `int ppl_Pointset_Powerset_Int32_Box_drop_some_non_integer_points_2` (`ppl_Pointset_Powerset_Int32_Box_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`, `int complexity`)
- `int ppl_Pointset_Powerset_Int32_Box_external_memory_in_bytes` (`ppl_const_Pointset_Powerset_Int32_Box_t ps`, `size_t *sz`)
- `int ppl_Pointset_Powerset_Int32_Box_total_memory_in_bytes` (`ppl_const_Pointset_Powerset_Int32_Box_t ps`, `size_t *sz`)
- `int ppl_Pointset_Powerset_Int32_Box_size` (`ppl_const_Pointset_Powerset_Int32_Box_t ps`, `size_t *sz`)
- `int ppl_Pointset_Powerset_Int32_Box_add_disjunct` (`ppl_Pointset_Powerset_Int32_Box_t ps`, `ppl_const_Pointset_Powerset_Int32_Box_t d`)
- `int ppl_Pointset_Powerset_Int32_Box_drop_disjunct` (`ppl_Pointset_Powerset_Int32_Box_t ps`, `ppl_const_Pointset_Powerset_Int32_Box_iterator_t cit`, `ppl_Pointset_Powerset_Int32_Box_iterator_t it`)
- `int ppl_Pointset_Powerset_Int32_Box_drop_disjuncts` (`ppl_Pointset_Powerset_Int32_Box_t ps`, `ppl_const_Pointset_Powerset_Int32_Box_iterator_t first`, `ppl_const_Pointset_Powerset_Int32_Box_iterator_t last`)

10.98.1 Detailed Description

Types and functions for `ppl_Pointset_Powerset_Int32_Box_tag`.

10.98.2 Friends And Related Function Documentation

10.98.2.1 `int ppl_delete_Pointset_Powerset_Int32_Box` (`ppl_const_Pointset_Powerset_Int32_Box_t ph`) [**related**]

10.98.2.2 `int ppl_new_Pointset_Powerset_Int32_Box_from_Congruence_System` (`ppl_Pointset_Powerset_Int32_Box_t *pph`, `ppl_const_Congruence_System_t cs`) [**related**]

- 10.98.2.3** `int ppl_new_Pointset_Powerset_Int32_Box_from_Constraint_System`
 (`ppl_Pointset_Powerset_Int32_Box_t * pph`, `ppl_const_Constraint_System_t cs`)
 [`related`]
- 10.98.2.4** `int ppl_new_Pointset_Powerset_Int32_Box_from_Int32_Box`
 (`ppl_Pointset_Powerset_Int32_Box_t * pph`, `ppl_const_Int32_Box_t ph`) [`related`]
- 10.98.2.5** `int ppl_new_Pointset_Powerset_Int32_Box_from_Int32_Box_with_complexity`
 (`ppl_Pointset_Powerset_Int32_Box_t * pph`, `ppl_const_Int32_Box_t ph`, `int complexity`)
 [`related`]
- 10.98.2.6** `int ppl_new_Pointset_Powerset_Int32_Box_from_Pointset_Powerset_Int32_Box`
 (`ppl_Pointset_Powerset_Int32_Box_t * pph`, `ppl_const_Pointset_Powerset_Int32_Box_t ph`) [`related`]
- 10.98.2.7** `int ppl_new_Pointset_Powerset_Int32_Box_from_Pointset_Powerset -`
`Int32_Box_with_complexity` (`ppl_Pointset_Powerset_Int32_Box_t * pph`,
`ppl_const_Pointset_Powerset_Int32_Box_t ph`, `int complexity`) [`related`]
- 10.98.2.8** `int ppl_new_Pointset_Powerset_Int32_Box_from_space_dimension`
 (`ppl_Pointset_Powerset_Int32_Box_t * pph`, `ppl_dimension_type d`, `int empty`)
 [`related`]
- 10.98.2.9** `int ppl_Pointset_Powerset_Int32_Box_add_congruence` (`ppl_Pointset_Powerset_Int32 -`
`Box_t ph`, `ppl_const_Congruence_t c`) [`related`]
- 10.98.2.10** `int ppl_Pointset_Powerset_Int32_Box_add_congruences` (`ppl_Pointset -`
`Powerset_Int32_Box_t ph`, `ppl_const_Congruence_System_t cs`)
 [`related`]

- 10.98.2.11 `int ppl_Pointset_Powerset_Int32_Box_add_constraint (ppl_Pointset_Powerset_Int32_Box_t ph, ppl_const_Constraint_t c)` [`related`]

- 10.98.2.12 `int ppl_Pointset_Powerset_Int32_Box_add_constraints (ppl_Pointset_Powerset_Int32_Box_t ph, ppl_const_Constraint_System_t cs)` [`related`]

- 10.98.2.13 `int ppl_Pointset_Powerset_Int32_Box_add_disjunct (ppl_Pointset_Powerset_Int32_Box_t ps, ppl_const_Int32_Box_t d)` [`related`]

- 10.98.2.14 `int ppl_Pointset_Powerset_Int32_Box_add_space_dimensions_and_embed (ppl_Pointset_Powerset_Int32_Box_t ph, ppl_dimension_type d)` [`related`]

- 10.98.2.15 `int ppl_Pointset_Powerset_Int32_Box_add_space_dimensions_and_project (ppl_Pointset_Powerset_Int32_Box_t ph, ppl_dimension_type d)` [`related`]

- 10.98.2.16 `int ppl_Pointset_Powerset_Int32_Box_affine_dimension (ppl_const_Pointset_Powerset_Int32_Box_t ph, ppl_dimension_type * m)` [`related`]

- 10.98.2.17 `int ppl_Pointset_Powerset_Int32_Box_affine_image (ppl_Pointset_Powerset_Int32_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]

- 10.98.2.18 `int ppl_Pointset_Powerset_Int32_Box_affine_preimage (ppl_Pointset_Powerset_Int32_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]

- 10.98.2.19** `int ppl_Pointset_Powerset_Int32_Box_bounded_affine_image (ppl_Pointset_Powerset_Int32_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [**related**]
- 10.98.2.20** `int ppl_Pointset_Powerset_Int32_Box_bounded_affine_preimage (ppl_Pointset_Powerset_Int32_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [**related**]
- 10.98.2.21** `int ppl_Pointset_Powerset_Int32_Box_bounds_from_above (ppl_const_Pointset_Powerset_Int32_Box_t ph, ppl_const_Linear_Expression_t le)` [**related**]
- 10.98.2.22** `int ppl_Pointset_Powerset_Int32_Box_bounds_from_below (ppl_const_Pointset_Powerset_Int32_Box_t ph, ppl_const_Linear_Expression_t le)` [**related**]
- 10.98.2.23** `int ppl_Pointset_Powerset_Int32_Box_concatenate_assign (ppl_Pointset_Powerset_Int32_Box_t x, ppl_const_Pointset_Powerset_Int32_Box_t y)` [**related**]
- 10.98.2.24** `int ppl_Pointset_Powerset_Int32_Box_constrains (ppl_Pointset_Powerset_Int32_Box_t ph, ppl_dimension_type var)` [**related**]
- 10.98.2.25** `int ppl_Pointset_Powerset_Int32_Box_contains_integer_point (ppl_const_Pointset_Powerset_Int32_Box_t ph)` [**related**]
- 10.98.2.26** `int ppl_Pointset_Powerset_Int32_Box_contains_Pointset_Powerset_Int32_Box (ppl_const_Pointset_Powerset_Int32_Box_t x, ppl_const_Pointset_Powerset_Int32_Box_t y)` [**related**]

- 10.98.2.27** `int ppl_Pointset_Powerset_Int32_Box_difference_assign (ppl_Pointset_Powerset_Int32_Box_t x, ppl_const_Pointset_Powerset_Int32_Box_t y)` **[related]**
- 10.98.2.28** `int ppl_Pointset_Powerset_Int32_Box_drop_disjunct (ppl_Pointset_Powerset_Int32_Box_t ps, ppl_const_Pointset_Powerset_Int32_Box_iterator_t cit, ppl_Pointset_Powerset_Int32_Box_iterator_t it)` **[related]**
- 10.98.2.29** `int ppl_Pointset_Powerset_Int32_Box_drop_disjuncts (ppl_Pointset_Powerset_Int32_Box_t ps, ppl_const_Pointset_Powerset_Int32_Box_iterator_t first, ppl_const_Pointset_Powerset_Int32_Box_iterator_t last)` **[related]**
- 10.98.2.30** `int ppl_Pointset_Powerset_Int32_Box_drop_some_non_integer_points (ppl_Pointset_Powerset_Int32_Box_t ph, int complexity)` **[related]**
- 10.98.2.31** `int ppl_Pointset_Powerset_Int32_Box_drop_some_non_integer_points_2 (ppl_Pointset_Powerset_Int32_Box_t ph, ppl_dimension_type ds[], size_t n, int complexity)` **[related]**
- 10.98.2.32** `int ppl_Pointset_Powerset_Int32_Box_equals_Pointset_Powerset_Int32_Box (ppl_const_Pointset_Powerset_Int32_Box_t x, ppl_const_Pointset_Powerset_Int32_Box_t y)` **[related]**
- 10.98.2.33** `int ppl_Pointset_Powerset_Int32_Box_expand_space_dimension (ppl_Pointset_Powerset_Int32_Box_t ph, ppl_dimension_type d, ppl_dimension_type m)` **[related]**
- 10.98.2.34** `int ppl_Pointset_Powerset_Int32_Box_external_memory_in_bytes (ppl_const_Pointset_Powerset_Int32_Box_t ps, size_t * sz)` **[related]**

- 10.98.2.35 `int ppl_Pointset_Powerset_Int32_Box_fold_space_dimensions (ppl_Pointset_Powerset_Int32_Box_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [**related**]
- 10.98.2.36 `int ppl_Pointset_Powerset_Int32_Box_generalized_affine_image (ppl_Pointset_Powerset_Int32_Box_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.98.2.37 `int ppl_Pointset_Powerset_Int32_Box_generalized_affine_image_lhs_rhs (ppl_Pointset_Powerset_Int32_Box_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` [**related**]
- 10.98.2.38 `int ppl_Pointset_Powerset_Int32_Box_generalized_affine_preimage (ppl_Pointset_Powerset_Int32_Box_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.98.2.39 `int ppl_Pointset_Powerset_Int32_Box_generalized_affine_preimage_lhs_rhs (ppl_Pointset_Powerset_Int32_Box_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` [**related**]
- 10.98.2.40 `int ppl_Pointset_Powerset_Int32_Box_geometrically_covers_Pointset_Powerset_Int32_Box (ppl_const_Pointset_Powerset_Int32_Box_t x, ppl_const_Pointset_Powerset_Int32_Box_t y)` [**related**]
- 10.98.2.41 `int ppl_Pointset_Powerset_Int32_Box_geometrically_equals_Pointset_Powerset_Int32_Box (ppl_const_Pointset_Powerset_Int32_Box_t x, ppl_const_Pointset_Powerset_Int32_Box_t y)` [**related**]

- 10.98.2.42 `int ppl_Pointset_Powerset_Int32_Box_intersection_assign (ppl_Pointset_Powerset_Int32_Box_t x, ppl_const_Pointset_Powerset_Int32_Box_t y)` `[related]`
- 10.98.2.43 `int ppl_Pointset_Powerset_Int32_Box_is_bounded (ppl_const_Pointset_Powerset_Int32_Box_t ph)` `[related]`
- 10.98.2.44 `int ppl_Pointset_Powerset_Int32_Box_is_discrete (ppl_const_Pointset_Powerset_Int32_Box_t ph)` `[related]`
- 10.98.2.45 `int ppl_Pointset_Powerset_Int32_Box_is_disjoint_from_Pointset_Powerset_Int32_Box (ppl_const_Pointset_Powerset_Int32_Box_t x, ppl_const_Pointset_Powerset_Int32_Box_t y)` `[related]`
- 10.98.2.46 `int ppl_Pointset_Powerset_Int32_Box_is_empty (ppl_const_Pointset_Powerset_Int32_Box_t ph)` `[related]`
- 10.98.2.47 `int ppl_Pointset_Powerset_Int32_Box_is_topologically_closed (ppl_const_Pointset_Powerset_Int32_Box_t ph)` `[related]`
- 10.98.2.48 `int ppl_Pointset_Powerset_Int32_Box_is_universe (ppl_const_Pointset_Powerset_Int32_Box_t ph)` `[related]`
- 10.98.2.49 `int ppl_Pointset_Powerset_Int32_Box_map_space_dimensions (ppl_Pointset_Powerset_Int32_Box_t ph, ppl_dimension_type maps[], size_t n)` `[related]`
- 10.98.2.50 `int ppl_Pointset_Powerset_Int32_Box_maximize (ppl_const_Pointset_Powerset_Int32_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * optimum)` `[related]`

- 10.98.2.51 `int ppl_Pointset_Powerset_Int32_Box_maximize_with_point (ppl_const_Pointset_Powerset_Int32_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` `[related]`
- 10.98.2.52 `int ppl_Pointset_Powerset_Int32_Box_minimize (ppl_const_Pointset_Powerset_Int32_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` `[related]`
- 10.98.2.53 `int ppl_Pointset_Powerset_Int32_Box_minimize_with_point (ppl_const_Pointset_Powerset_Int32_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` `[related]`
- 10.98.2.54 `int ppl_Pointset_Powerset_Int32_Box_OK (ppl_const_Pointset_Powerset_Int32_Box_t ph)` `[related]`
- 10.98.2.55 `int ppl_Pointset_Powerset_Int32_Box_omega_reduce (ppl_Pointset_Powerset_Int32_Box_t ph)` `[related]`
- 10.98.2.56 `int ppl_Pointset_Powerset_Int32_Box_pairwise_reduce (ppl_Pointset_Powerset_Int32_Box_t ph)` `[related]`
- 10.98.2.57 `int ppl_Pointset_Powerset_Int32_Box_refine_with_congruence (ppl_Pointset_Powerset_Int32_Box_t ph, ppl_const_Congruence_t c)` `[related]`
- 10.98.2.58 `int ppl_Pointset_Powerset_Int32_Box_refine_with_congruences (ppl_Pointset_Powerset_Int32_Box_t ph, ppl_const_Congruence_System_t cs)` `[related]`
- 10.98.2.59 `int ppl_Pointset_Powerset_Int32_Box_refine_with_constraint (ppl_Pointset_Powerset_Int32_Box_t ph, ppl_const_Constraint_t c)` `[related]`

- 10.98.2.60** `int ppl_Pointset_Powerset_Int32_Box_refine_with_constraints`
 (`ppl_Pointset_Powerset_Int32_Box_t ph`, `ppl_const_Constraint_System_t cs`)
 [`related`]
- 10.98.2.61** `int ppl_Pointset_Powerset_Int32_Box_relation_with_Congruence`
 (`ppl_const_Pointset_Powerset_Int32_Box_t ph`, `ppl_const_Congruence_t c`)
 [`related`]
- 10.98.2.62** `int ppl_Pointset_Powerset_Int32_Box_relation_with_Constraint`
 (`ppl_const_Pointset_Powerset_Int32_Box_t ph`, `ppl_const_Constraint_t c`)
 [`related`]
- 10.98.2.63** `int ppl_Pointset_Powerset_Int32_Box_relation_with_Generator`
 (`ppl_const_Pointset_Powerset_Int32_Box_t ph`, `ppl_const_Generator_t c`)
 [`related`]
- 10.98.2.64** `int ppl_Pointset_Powerset_Int32_Box_remove_higher_space_dimensions`
 (`ppl_Pointset_Powerset_Int32_Box_t ph`, `ppl_dimension_type d`) [`related`]
- 10.98.2.65** `int ppl_Pointset_Powerset_Int32_Box_remove_space_dimensions`
 (`ppl_Pointset_Powerset_Int32_Box_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`)
 [`related`]
- 10.98.2.66** `int ppl_Pointset_Powerset_Int32_Box_simplify_using_context_assign`
 (`ppl_Pointset_Powerset_Int32_Box_t x`, `ppl_const_Pointset_Powerset_Int32_Box_t y`)
 [`related`]
- 10.98.2.67** `int ppl_Pointset_Powerset_Int32_Box_size` (`ppl_const_Pointset_Powerset_Int32_Box_t ps`, `size_t * sz`) [`related`]

- 10.98.2.68** `int ppl_Pointset_Powerset_Int32_Box_space_dimension (ppl_const_Pointset_Powerset_Int32_Box_t ph, ppl_dimension_type * m)`
[related]
- 10.98.2.69** `int ppl_Pointset_Powerset_Int32_Box_strictly_contains_Pointset_Powerset_Int32_Box (ppl_const_Pointset_Powerset_Int32_Box_t x, ppl_const_Pointset_Powerset_Int32_Box_t y)` [related]
- 10.98.2.70** `int ppl_Pointset_Powerset_Int32_Box_time_elapse_assign (ppl_Pointset_Powerset_Int32_Box_t x, ppl_const_Pointset_Powerset_Int32_Box_t y)`
[related]
- 10.98.2.71** `int ppl_Pointset_Powerset_Int32_Box_topological_closure_assign (ppl_Pointset_Powerset_Int32_Box_t ph)` [related]
- 10.98.2.72** `int ppl_Pointset_Powerset_Int32_Box_total_memory_in_bytes (ppl_const_Pointset_Powerset_Int32_Box_t ps, size_t * sz)` [related]
- 10.98.2.73** `int ppl_Pointset_Powerset_Int32_Box_unconstrain_space_dimension (ppl_Pointset_Powerset_Int32_Box_t ph, ppl_dimension_type var)` [related]
- 10.98.2.74** `int ppl_Pointset_Powerset_Int32_Box_unconstrain_space_dimensions (ppl_Pointset_Powerset_Int32_Box_t ph, ppl_dimension_type ds[], size_t n)`
[related]
- 10.98.2.75** `int ppl_Pointset_Powerset_Int32_Box_upper_bound_assign (ppl_Pointset_Powerset_Int32_Box_t x, ppl_const_Pointset_Powerset_Int32_Box_t y)`
[related]

10.98.2.76 `int ppl_Pointset_Powerset_Int32_Box_upper_bound_assign_if_exact`
 (`ppl_Pointset_Powerset_Int32_Box_t x`, `ppl_const_Pointset_Powerset_Int32_Box_t y`)
 [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.99 `ppl_Pointset_Powerset_Int64_Box_const_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Int64_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_Int64_Box_const_iterator` (`ppl_Pointset_Powerset_Int64_Box_const_iterator_t *pit`)
- `int ppl_new_Pointset_Powerset_Int64_Box_const_iterator_from_const_iterator` (`ppl_Pointset_Powerset_Int64_Box_const_iterator_t *px`, `ppl_const_Pointset_Powerset_Int64_Box_const_iterator_t y`)
- `int ppl_Pointset_Powerset_Int64_Box_const_iterator_begin` (`ppl_const_Pointset_Powerset_Int64_Box_t ps`, `ppl_Pointset_Powerset_Int64_Box_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Int64_Box_const_iterator_end` (`ppl_const_Pointset_Powerset_Int64_Box_t ps`, `ppl_Pointset_Powerset_Int64_Box_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Int64_Box_const_iterator_equal_test` (`ppl_const_Pointset_Powerset_Int64_Box_const_iterator_t x`, `ppl_const_Pointset_Powerset_Int64_Box_const_iterator_t y`)
- `int ppl_Pointset_Powerset_Int64_Box_const_iterator_increment` (`ppl_Pointset_Powerset_Int64_Box_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Int64_Box_const_iterator_decrement` (`ppl_Pointset_Powerset_Int64_Box_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Int64_Box_const_iterator_dereference` (`ppl_const_Pointset_Powerset_Int64_Box_const_iterator_t ps`, `ppl_const_Int64_Box_t *d`)
- `int ppl_delete_Pointset_Powerset_Int64_Box_const_iterator` (`ppl_const_Pointset_Powerset_Int64_Box_const_iterator_t psit`)

10.99.1 Detailed Description

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Int64_Box_tag](#).

10.99.2 Friends And Related Function Documentation

10.99.2.1 `int ppl_delete_Pointset_Powerset_Int64_Box_const_iterator`
 (`ppl_const_Pointset_Powerset_Int64_Box_const_iterator_t psit`) [**related**]

- 10.99.2.2** `int ppl_new_Pointset_Powerset_Int64_Box_const_iterator`
(`ppl_Pointset_Powerset_Int64_Box_const_iterator_t * pit`) [**related**]
- 10.99.2.3** `int ppl_new_Pointset_Powerset_Int64_Box_const_iterator_from_const_iterator` (`ppl_Pointset_Powerset_Int64_Box_const_iterator_t * px`,
`ppl_const_Pointset_Powerset_Int64_Box_const_iterator_t y`) [**related**]
- 10.99.2.4** `int ppl_Pointset_Powerset_Int64_Box_const_iterator_begin` (`ppl_const_Pointset_Powerset_Int64_Box_t ps`, `ppl_Pointset_Powerset_Int64_Box_const_iterator_t psit`) [**related**]
- 10.99.2.5** `int ppl_Pointset_Powerset_Int64_Box_const_iterator_decrement`
(`ppl_Pointset_Powerset_Int64_Box_const_iterator_t psit`) [**related**]
- 10.99.2.6** `int ppl_Pointset_Powerset_Int64_Box_const_iterator_dereference`
(`ppl_const_Pointset_Powerset_Int64_Box_const_iterator_t ps`, `ppl_const_Int64_Box_t * d`) [**related**]
- 10.99.2.7** `int ppl_Pointset_Powerset_Int64_Box_const_iterator_end` (`ppl_const_Pointset_Powerset_Int64_Box_t ps`, `ppl_Pointset_Powerset_Int64_Box_const_iterator_t psit`) [**related**]
- 10.99.2.8** `int ppl_Pointset_Powerset_Int64_Box_const_iterator_equal_test`
(`ppl_const_Pointset_Powerset_Int64_Box_const_iterator_t x`,
`ppl_const_Pointset_Powerset_Int64_Box_const_iterator_t y`) [**related**]
- 10.99.2.9** `int ppl_Pointset_Powerset_Int64_Box_const_iterator_increment`
(`ppl_Pointset_Powerset_Int64_Box_const_iterator_t psit`) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.100 ppl_Pointset_Powerset_Int64_Box_iterator_tag Interface Reference

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Int64_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- int [ppl_new_Pointset_Powerset_Int64_Box_iterator](#) (ppl_Pointset_Powerset_Int64_Box_iterator_t *pit)
- int [ppl_new_Pointset_Powerset_Int64_Box_iterator_from_iterator](#) (ppl_Pointset_Powerset_Int64_Box_iterator_t *px, ppl_const_Pointset_Powerset_Int64_Box_iterator_t y)
- int [ppl_Pointset_Powerset_Int64_Box_iterator_begin](#) (ppl_Pointset_Powerset_Int64_Box_t ps, ppl_Pointset_Powerset_Int64_Box_iterator_t psit)
- int [ppl_Pointset_Powerset_Int64_Box_iterator_end](#) (ppl_Pointset_Powerset_Int64_Box_t ps, ppl_Pointset_Powerset_Int64_Box_iterator_t psit)
- int [ppl_Pointset_Powerset_Int64_Box_iterator_equal_test](#) (ppl_const_Pointset_Powerset_Int64_Box_iterator_t x, ppl_const_Pointset_Powerset_Int64_Box_iterator_t y)
- int [ppl_Pointset_Powerset_Int64_Box_iterator_increment](#) (ppl_Pointset_Powerset_Int64_Box_iterator_t psit)
- int [ppl_Pointset_Powerset_Int64_Box_iterator_decrement](#) (ppl_Pointset_Powerset_Int64_Box_iterator_t psit)
- int [ppl_Pointset_Powerset_Int64_Box_iterator_dereference](#) (ppl_const_Pointset_Powerset_Int64_Box_iterator_t ps, ppl_const_Int64_Box_t *d)
- int [ppl_delete_Pointset_Powerset_Int64_Box_iterator](#) (ppl_const_Pointset_Powerset_Int64_Box_iterator_t psit)

10.100.1 Detailed Description

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Int64_Box_tag](#).

10.100.2 Friends And Related Function Documentation

10.100.2.1 int [ppl_delete_Pointset_Powerset_Int64_Box_iterator](#) (ppl_const_Pointset_Powerset_Int64_Box_iterator_t *psit*) [**related**]

10.100.2.2 int [ppl_new_Pointset_Powerset_Int64_Box_iterator](#) (ppl_Pointset_Powerset_Int64_Box_iterator_t * *pit*) [**related**]

10.100.2.3 int [ppl_new_Pointset_Powerset_Int64_Box_iterator_from_iterator](#) (ppl_Pointset_Powerset_Int64_Box_iterator_t * *px*, ppl_const_Pointset_Powerset_Int64_Box_iterator_t *y*) [**related**]

- 10.100.2.4** `int ppl_Pointset_Powerset_Int64_Box_iterator_begin (ppl_Pointset_Powerset_Int64_Box_t ps, ppl_Pointset_Powerset_Int64_Box_iterator_t psit)` **[related]**
- 10.100.2.5** `int ppl_Pointset_Powerset_Int64_Box_iterator_decrement (ppl_Pointset_Powerset_Int64_Box_iterator_t psit)` **[related]**
- 10.100.2.6** `int ppl_Pointset_Powerset_Int64_Box_iterator_dereference (ppl_const_Pointset_Powerset_Int64_Box_iterator_t ps, ppl_const_Int64_Box_t * d)` **[related]**
- 10.100.2.7** `int ppl_Pointset_Powerset_Int64_Box_iterator_end (ppl_Pointset_Powerset_Int64_Box_t ps, ppl_Pointset_Powerset_Int64_Box_iterator_t psit)` **[related]**
- 10.100.2.8** `int ppl_Pointset_Powerset_Int64_Box_iterator_equal_test (ppl_const_Pointset_Powerset_Int64_Box_iterator_t x, ppl_const_Pointset_Powerset_Int64_Box_iterator_t y)` **[related]**
- 10.100.2.9** `int ppl_Pointset_Powerset_Int64_Box_iterator_increment (ppl_Pointset_Powerset_Int64_Box_iterator_t psit)` **[related]**

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.101 `ppl_Pointset_Powerset_Int64_Box_tag` Interface Reference

Types and functions for [ppl_Pointset_Powerset_Int64_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl\_delete\_Pointset\_Powerset\_Int64\_Box (ppl_const_Pointset_Powerset_Int64_Box_t ph)`

- `int ppl_new_Pointset_Powerset_Int64_Box_from_space_dimension` (`ppl_Pointset_Powerset_Int64_Box_t *pph`, `ppl_dimension_type d`, `int empty`)
- `int ppl_new_Pointset_Powerset_Int64_Box_from_Pointset_Powerset_Int64_Box` (`ppl_Pointset_Powerset_Int64_Box_t *pph`, `ppl_const_Pointset_Powerset_Int64_Box_t ph`)
- `int ppl_new_Pointset_Powerset_Int64_Box_from_Int64_Box` (`ppl_Pointset_Powerset_Int64_Box_t *pph`, `ppl_const_Int64_Box_t ph`)
- `int ppl_new_Pointset_Powerset_Int64_Box_from_Pointset_Powerset_Int64_Box_with_complexity` (`ppl_Pointset_Powerset_Int64_Box_t *pph`, `ppl_const_Pointset_Powerset_Int64_Box_t ph`, `int complexity`)
- `int ppl_new_Pointset_Powerset_Int64_Box_from_Int64_Box_with_complexity` (`ppl_Pointset_Powerset_Int64_Box_t *pph`, `ppl_const_Int64_Box_t ph`, `int complexity`)
- `int ppl_new_Pointset_Powerset_Int64_Box_from_Constraint_System` (`ppl_Pointset_Powerset_Int64_Box_t *pph`, `ppl_const_Constraint_System_t cs`)
- `int ppl_new_Pointset_Powerset_Int64_Box_from_Congruence_System` (`ppl_Pointset_Powerset_Int64_Box_t *pph`, `ppl_const_Congruence_System_t cs`)
- `int ppl_Pointset_Powerset_Int64_Box_space_dimension` (`ppl_const_Pointset_Powerset_Int64_Box_t ph`, `ppl_dimension_type *m`)
- `int ppl_Pointset_Powerset_Int64_Box_affine_dimension` (`ppl_const_Pointset_Powerset_Int64_Box_t ph`, `ppl_dimension_type *m`)
- `int ppl_Pointset_Powerset_Int64_Box_relation_with_Constraint` (`ppl_const_Pointset_Powerset_Int64_Box_t ph`, `ppl_const_Constraint_t c`)
- `int ppl_Pointset_Powerset_Int64_Box_relation_with_Generator` (`ppl_const_Pointset_Powerset_Int64_Box_t ph`, `ppl_const_Generator_t c`)
- `int ppl_Pointset_Powerset_Int64_Box_relation_with_Congruence` (`ppl_const_Pointset_Powerset_Int64_Box_t ph`, `ppl_const_Congruence_t c`)
- `int ppl_Pointset_Powerset_Int64_Box_is_empty` (`ppl_const_Pointset_Powerset_Int64_Box_t ph`)
- `int ppl_Pointset_Powerset_Int64_Box_is_universe` (`ppl_const_Pointset_Powerset_Int64_Box_t ph`)
- `int ppl_Pointset_Powerset_Int64_Box_is_bounded` (`ppl_const_Pointset_Powerset_Int64_Box_t ph`)
- `int ppl_Pointset_Powerset_Int64_Box_contains_integer_point` (`ppl_const_Pointset_Powerset_Int64_Box_t ph`)
- `int ppl_Pointset_Powerset_Int64_Box_is_topologically_closed` (`ppl_const_Pointset_Powerset_Int64_Box_t ph`)
- `int ppl_Pointset_Powerset_Int64_Box_is_discrete` (`ppl_const_Pointset_Powerset_Int64_Box_t ph`)
- `int ppl_Pointset_Powerset_Int64_Box_topological_closure_assign` (`ppl_Pointset_Powerset_Int64_Box_t ph`)
- `int ppl_Pointset_Powerset_Int64_Box_pairwise_reduce` (`ppl_Pointset_Powerset_Int64_Box_t ph`)
- `int ppl_Pointset_Powerset_Int64_Box_omega_reduce` (`ppl_Pointset_Powerset_Int64_Box_t ph`)
- `int ppl_Pointset_Powerset_Int64_Box_bounds_from_above` (`ppl_const_Pointset_Powerset_Int64_Box_t ph`, `ppl_const_Linear_Expression_t le`)
- `int ppl_Pointset_Powerset_Int64_Box_bounds_from_below` (`ppl_const_Pointset_Powerset_Int64_Box_t ph`, `ppl_const_Linear_Expression_t le`)
- `int ppl_Pointset_Powerset_Int64_Box_maximize` (`ppl_const_Pointset_Powerset_Int64_Box_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int *poptimum`)
- `int ppl_Pointset_Powerset_Int64_Box_minimize` (`ppl_const_Pointset_Powerset_Int64_Box_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int *poptimum`)
- `int ppl_Pointset_Powerset_Int64_Box_maximize_with_point` (`ppl_const_Pointset_Powerset_Int64_Box_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int *poptimum`, `ppl_Generator_t point`)
- `int ppl_Pointset_Powerset_Int64_Box_minimize_with_point` (`ppl_const_Pointset_Powerset_Int64_Box_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int *poptimum`, `ppl_Generator_t point`)

- int [ppl_Pointset_Powerset_Int64_Box_contains_Pointset_Powerset_Int64_Box](#) (ppl_const_Pointset_Powerset_Int64_Box_t x, ppl_const_Pointset_Powerset_Int64_Box_t y)
- int [ppl_Pointset_Powerset_Int64_Box_strictly_contains_Pointset_Powerset_Int64_Box](#) (ppl_const_Pointset_Powerset_Int64_Box_t x, ppl_const_Pointset_Powerset_Int64_Box_t y)
- int [ppl_Pointset_Powerset_Int64_Box_is_disjoint_from_Pointset_Powerset_Int64_Box](#) (ppl_const_Pointset_Powerset_Int64_Box_t x, ppl_const_Pointset_Powerset_Int64_Box_t y)
- int [ppl_Pointset_Powerset_Int64_Box_geometrically_covers_Pointset_Powerset_Int64_Box](#) (ppl_const_Pointset_Powerset_Int64_Box_t x, ppl_const_Pointset_Powerset_Int64_Box_t y)
- int [ppl_Pointset_Powerset_Int64_Box_geometrically_equals_Pointset_Powerset_Int64_Box](#) (ppl_const_Pointset_Powerset_Int64_Box_t x, ppl_const_Pointset_Powerset_Int64_Box_t y)
- int [ppl_Pointset_Powerset_Int64_Box_equals_Pointset_Powerset_Int64_Box](#) (ppl_const_Pointset_Powerset_Int64_Box_t x, ppl_const_Pointset_Powerset_Int64_Box_t y)
- int [ppl_Pointset_Powerset_Int64_Box_OK](#) (ppl_const_Pointset_Powerset_Int64_Box_t ph)
- int [ppl_Pointset_Powerset_Int64_Box_add_constraint](#) (ppl_Pointset_Powerset_Int64_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Int64_Box_add_congruence](#) (ppl_Pointset_Powerset_Int64_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Int64_Box_add_constraints](#) (ppl_Pointset_Powerset_Int64_Box_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_Int64_Box_add_congruences](#) (ppl_Pointset_Powerset_Int64_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_Int64_Box_refine_with_constraint](#) (ppl_Pointset_Powerset_Int64_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Int64_Box_refine_with_congruence](#) (ppl_Pointset_Powerset_Int64_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Int64_Box_refine_with_constraints](#) (ppl_Pointset_Powerset_Int64_Box_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_Int64_Box_refine_with_congruences](#) (ppl_Pointset_Powerset_Int64_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_Int64_Box_intersection_assign](#) (ppl_Pointset_Powerset_Int64_Box_t x, ppl_const_Pointset_Powerset_Int64_Box_t y)
- int [ppl_Pointset_Powerset_Int64_Box_upper_bound_assign](#) (ppl_Pointset_Powerset_Int64_Box_t x, ppl_const_Pointset_Powerset_Int64_Box_t y)
- int [ppl_Pointset_Powerset_Int64_Box_difference_assign](#) (ppl_Pointset_Powerset_Int64_Box_t x, ppl_const_Pointset_Powerset_Int64_Box_t y)
- int [ppl_Pointset_Powerset_Int64_Box_concatenate_assign](#) (ppl_Pointset_Powerset_Int64_Box_t x, ppl_const_Pointset_Powerset_Int64_Box_t y)
- int [ppl_Pointset_Powerset_Int64_Box_time_elapse_assign](#) (ppl_Pointset_Powerset_Int64_Box_t x, ppl_const_Pointset_Powerset_Int64_Box_t y)
- int [ppl_Pointset_Powerset_Int64_Box_upper_bound_assign_if_exact](#) (ppl_Pointset_Powerset_Int64_Box_t x, ppl_const_Pointset_Powerset_Int64_Box_t y)
- int [ppl_Pointset_Powerset_Int64_Box_simplify_using_context_assign](#) (ppl_Pointset_Powerset_Int64_Box_t x, ppl_const_Pointset_Powerset_Int64_Box_t y)
- int [ppl_Pointset_Powerset_Int64_Box_constrains](#) (ppl_Pointset_Powerset_Int64_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_Int64_Box_unconstrain_space_dimension](#) (ppl_Pointset_Powerset_Int64_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_Int64_Box_unconstrain_space_dimensions](#) (ppl_Pointset_Powerset_Int64_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_Int64_Box_affine_image](#) (ppl_Pointset_Powerset_Int64_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)

- int [ppl_Pointset_Powerset_Int64_Box_affine_preimage](#) (ppl_Pointset_Powerset_Int64_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Int64_Box_bounded_affine_image](#) (ppl_Pointset_Powerset_Int64_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Int64_Box_bounded_affine_preimage](#) (ppl_Pointset_Powerset_Int64_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Int64_Box_generalized_affine_image](#) (ppl_Pointset_Powerset_Int64_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Int64_Box_generalized_affine_preimage](#) (ppl_Pointset_Powerset_Int64_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Int64_Box_generalized_affine_image_lhs_rhs](#) (ppl_Pointset_Powerset_Int64_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_Int64_Box_generalized_affine_preimage_lhs_rhs](#) (ppl_Pointset_Powerset_Int64_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_Int64_Box_add_space_dimensions_and_embed](#) (ppl_Pointset_Powerset_Int64_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Int64_Box_add_space_dimensions_and_project](#) (ppl_Pointset_Powerset_Int64_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Int64_Box_remove_space_dimensions](#) (ppl_Pointset_Powerset_Int64_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_Int64_Box_remove_higher_space_dimensions](#) (ppl_Pointset_Powerset_Int64_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Int64_Box_expand_space_dimension](#) (ppl_Pointset_Powerset_Int64_Box_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Pointset_Powerset_Int64_Box_fold_space_dimensions](#) (ppl_Pointset_Powerset_Int64_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Int64_Box_map_space_dimensions](#) (ppl_Pointset_Powerset_Int64_Box_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_Pointset_Powerset_Int64_Box_drop_some_non_integer_points](#) (ppl_Pointset_Powerset_Int64_Box_t ph, int complexity)
- int [ppl_Pointset_Powerset_Int64_Box_drop_some_non_integer_points_2](#) (ppl_Pointset_Powerset_Int64_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_Pointset_Powerset_Int64_Box_external_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Int64_Box_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Int64_Box_total_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Int64_Box_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Int64_Box_size](#) (ppl_const_Pointset_Powerset_Int64_Box_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Int64_Box_add_disjunct](#) (ppl_Pointset_Powerset_Int64_Box_t ps, ppl_const_Int64_Box_t d)
- int [ppl_Pointset_Powerset_Int64_Box_drop_disjunct](#) (ppl_Pointset_Powerset_Int64_Box_t ps, ppl_const_Pointset_Powerset_Int64_Box_iterator_t cit, ppl_Pointset_Powerset_Int64_Box_iterator_t it)
- int [ppl_Pointset_Powerset_Int64_Box_drop_disjuncts](#) (ppl_Pointset_Powerset_Int64_Box_t ps, ppl_const_Pointset_Powerset_Int64_Box_iterator_t first, ppl_const_Pointset_Powerset_Int64_Box_iterator_t last)

10.101.1 Detailed Description

Types and functions for [ppl_Pointset_Powerset_Int64_Box_tag](#).

10.101.2 Friends And Related Function Documentation

10.101.2.1 `int ppl_delete_Pointset_Powerset_Int64_Box (ppl_const_Pointset_Powerset_Int64_Box_t ph)` [**related**]

10.101.2.2 `int ppl_new_Pointset_Powerset_Int64_Box_from_Congruence_System (ppl_Pointset_Powerset_Int64_Box_t * pph, ppl_const_Congruence_System_t cs)` [**related**]

10.101.2.3 `int ppl_new_Pointset_Powerset_Int64_Box_from_Constraint_System (ppl_Pointset_Powerset_Int64_Box_t * pph, ppl_const_Constraint_System_t cs)` [**related**]

10.101.2.4 `int ppl_new_Pointset_Powerset_Int64_Box_from_Int64_Box (ppl_Pointset_Powerset_Int64_Box_t * pph, ppl_const_Int64_Box_t ph)` [**related**]

10.101.2.5 `int ppl_new_Pointset_Powerset_Int64_Box_from_Int64_Box_with_complexity (ppl_Pointset_Powerset_Int64_Box_t * pph, ppl_const_Int64_Box_t ph, int complexity)` [**related**]

10.101.2.6 `int ppl_new_Pointset_Powerset_Int64_Box_from_Pointset_Powerset_Int64_Box (ppl_Pointset_Powerset_Int64_Box_t * pph, ppl_const_Pointset_Powerset_Int64_Box_t ph)` [**related**]

10.101.2.7 `int ppl_new_Pointset_Powerset_Int64_Box_from_Pointset_Powerset_Int64_Box_with_complexity (ppl_Pointset_Powerset_Int64_Box_t * pph, ppl_const_Pointset_Powerset_Int64_Box_t ph, int complexity)` [**related**]

- 10.101.2.8** `int ppl_new_Pointset_Powerset_Int64_Box_from_space_dimension`
 (`ppl_Pointset_Powerset_Int64_Box_t * pph, ppl_dimension_type d, int empty`)
 [`related`]
- 10.101.2.9** `int ppl_Pointset_Powerset_Int64_Box_add_congruence` (`ppl_-`
`Pointset_Powerset_Int64_Box_t ph, ppl_const_Congruence_t c`)
 [`related`]
- 10.101.2.10** `int ppl_Pointset_Powerset_Int64_Box_add_congruences` (`ppl_Pointset_-`
`Powerset_Int64_Box_t ph, ppl_const_Congruence_System_t cs`)
 [`related`]
- 10.101.2.11** `int ppl_Pointset_Powerset_Int64_Box_add_constraint` (`ppl_-`
`Pointset_Powerset_Int64_Box_t ph, ppl_const_Constraint_t c`)
 [`related`]
- 10.101.2.12** `int ppl_Pointset_Powerset_Int64_Box_add_constraints` (`ppl_Pointset_-`
`Powerset_Int64_Box_t ph, ppl_const_Constraint_System_t cs`)
 [`related`]
- 10.101.2.13** `int ppl_Pointset_Powerset_Int64_Box_add_disjunct` (`ppl_Pointset_Powerset_Int64_-`
`Box_t ps, ppl_const_Int64_Box_t d`) [`related`]
- 10.101.2.14** `int ppl_Pointset_Powerset_Int64_Box_add_space_dimensions_and_embed`
 (`ppl_Pointset_Powerset_Int64_Box_t ph, ppl_dimension_type d`) [`related`]
- 10.101.2.15** `int ppl_Pointset_Powerset_Int64_Box_add_space_dimensions_and_project`
 (`ppl_Pointset_Powerset_Int64_Box_t ph, ppl_dimension_type d`) [`related`]

- 10.101.2.16 `int ppl_Pointset_Powerset_Int64_Box_affine_dimension (ppl_const_Pointset_Powerset_Int64_Box_t ph, ppl_dimension_type * m)` [related]
- 10.101.2.17 `int ppl_Pointset_Powerset_Int64_Box_affine_image (ppl_Pointset_Powerset_Int64_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [related]
- 10.101.2.18 `int ppl_Pointset_Powerset_Int64_Box_affine_preimage (ppl_Pointset_Powerset_Int64_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [related]
- 10.101.2.19 `int ppl_Pointset_Powerset_Int64_Box_bounded_affine_image (ppl_Pointset_Powerset_Int64_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [related]
- 10.101.2.20 `int ppl_Pointset_Powerset_Int64_Box_bounded_affine_preimage (ppl_Pointset_Powerset_Int64_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [related]
- 10.101.2.21 `int ppl_Pointset_Powerset_Int64_Box_bounds_from_above (ppl_const_Pointset_Powerset_Int64_Box_t ph, ppl_const_Linear_Expression_t le)` [related]
- 10.101.2.22 `int ppl_Pointset_Powerset_Int64_Box_bounds_from_below (ppl_const_Pointset_Powerset_Int64_Box_t ph, ppl_const_Linear_Expression_t le)` [related]
- 10.101.2.23 `int ppl_Pointset_Powerset_Int64_Box_concatenate_assign (ppl_Pointset_Powerset_Int64_Box_t x, ppl_const_Pointset_Powerset_Int64_Box_t y)` [related]

- 10.101.2.24** `int ppl_Pointset_Powerset_Int64_Box_constrains (ppl_Pointset_Powerset_Int64_Box_t ph, ppl_dimension_type var)` [**related**]
- 10.101.2.25** `int ppl_Pointset_Powerset_Int64_Box_contains_integer_point (ppl_const_Pointset_Powerset_Int64_Box_t ph)` [**related**]
- 10.101.2.26** `int ppl_Pointset_Powerset_Int64_Box_contains_Pointset_Powerset_Int64_Box (ppl_const_Pointset_Powerset_Int64_Box_t x, ppl_const_Pointset_Powerset_Int64_Box_t y)` [**related**]
- 10.101.2.27** `int ppl_Pointset_Powerset_Int64_Box_difference_assign (ppl_Pointset_Powerset_Int64_Box_t x, ppl_const_Pointset_Powerset_Int64_Box_t y)` [**related**]
- 10.101.2.28** `int ppl_Pointset_Powerset_Int64_Box_drop_disjunct (ppl_Pointset_Powerset_Int64_Box_t ps, ppl_const_Pointset_Powerset_Int64_Box_iterator_t cit, ppl_Pointset_Powerset_Int64_Box_iterator_t it)` [**related**]
- 10.101.2.29** `int ppl_Pointset_Powerset_Int64_Box_drop_disjuncts (ppl_Pointset_Powerset_Int64_Box_t ps, ppl_const_Pointset_Powerset_Int64_Box_iterator_t first, ppl_const_Pointset_Powerset_Int64_Box_iterator_t last)` [**related**]
- 10.101.2.30** `int ppl_Pointset_Powerset_Int64_Box_drop_some_non_integer_points (ppl_Pointset_Powerset_Int64_Box_t ph, int complexity)` [**related**]
- 10.101.2.31** `int ppl_Pointset_Powerset_Int64_Box_drop_some_non_integer_points_2 (ppl_Pointset_Powerset_Int64_Box_t ph, ppl_dimension_type ds[], size_t n, int complexity)` [**related**]

- 10.101.2.32** `int ppl_Pointset_Powerset_Int64_Box_equals_Pointset_Powerset_Int64_Box (ppl_const_Pointset_Powerset_Int64_Box_t x, ppl_const_Pointset_Powerset_Int64_Box_t y)` [**related**]
- 10.101.2.33** `int ppl_Pointset_Powerset_Int64_Box_expand_space_dimension (ppl_Pointset_Powerset_Int64_Box_t ph, ppl_dimension_type d, ppl_dimension_type m)` [**related**]
- 10.101.2.34** `int ppl_Pointset_Powerset_Int64_Box_external_memory_in_bytes (ppl_const_Pointset_Powerset_Int64_Box_t ps, size_t * sz)` [**related**]
- 10.101.2.35** `int ppl_Pointset_Powerset_Int64_Box_fold_space_dimensions (ppl_Pointset_Powerset_Int64_Box_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [**related**]
- 10.101.2.36** `int ppl_Pointset_Powerset_Int64_Box_generalized_affine_image (ppl_Pointset_Powerset_Int64_Box_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.101.2.37** `int ppl_Pointset_Powerset_Int64_Box_generalized_affine_image_lhs_rhs (ppl_Pointset_Powerset_Int64_Box_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` [**related**]
- 10.101.2.38** `int ppl_Pointset_Powerset_Int64_Box_generalized_affine_preimage (ppl_Pointset_Powerset_Int64_Box_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]

- 10.101.2.39** `int ppl_Pointset_Powerset_Int64_Box_generalized_affine_preimage_lhs_rhs`
 (`ppl_Pointset_Powerset_Int64_Box_t ph`, `ppl_const_Linear_Expression_t lhs`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
 [`related`]
- 10.101.2.40** `int ppl_Pointset_Powerset_Int64_Box_geometrically_covers_Pointset_-`
`Powerset_Int64_Box` (`ppl_const_Pointset_Powerset_Int64_Box_t x`,
`ppl_const_Pointset_Powerset_Int64_Box_t y`) [`related`]
- 10.101.2.41** `int ppl_Pointset_Powerset_Int64_Box_geometrically_equals_Pointset_-`
`Powerset_Int64_Box` (`ppl_const_Pointset_Powerset_Int64_Box_t x`,
`ppl_const_Pointset_Powerset_Int64_Box_t y`) [`related`]
- 10.101.2.42** `int ppl_Pointset_Powerset_Int64_Box_intersection_assign` (`ppl_Pointset_-`
`Powerset_Int64_Box_t x`, `ppl_const_Pointset_Powerset_Int64_Box_t y`)
 [`related`]
- 10.101.2.43** `int ppl_Pointset_Powerset_Int64_Box_is_bounded` (`ppl_const_Pointset_Powerset_-`
`Int64_Box_t ph`) [`related`]
- 10.101.2.44** `int ppl_Pointset_Powerset_Int64_Box_is_discrete` (`ppl_const_Pointset_Powerset_-`
`Int64_Box_t ph`) [`related`]
- 10.101.2.45** `int ppl_Pointset_Powerset_Int64_Box_is_disjoint_from_Pointset_-`
`Powerset_Int64_Box` (`ppl_const_Pointset_Powerset_Int64_Box_t x`,
`ppl_const_Pointset_Powerset_Int64_Box_t y`) [`related`]
- 10.101.2.46** `int ppl_Pointset_Powerset_Int64_Box_is_empty` (`ppl_const_Pointset_Powerset_-`
`Int64_Box_t ph`) [`related`]

- 10.101.2.47** `int ppl_Pointset_Powerset_Int64_Box_is_topologically_closed`
`(ppl_const_Pointset_Powerset_Int64_Box_t ph)` [**related**]
- 10.101.2.48** `int ppl_Pointset_Powerset_Int64_Box_is_universe` (`ppl_const_Pointset_Powerset -`
`Int64_Box_t ph`) [**related**]
- 10.101.2.49** `int ppl_Pointset_Powerset_Int64_Box_map_space_dimensions`
`(ppl_Pointset_Powerset_Int64_Box_t ph, ppl_dimension_type maps[], size_t n)`
[related]
- 10.101.2.50** `int ppl_Pointset_Powerset_Int64_Box_maximize` (`ppl_const_Pointset_Powerset -`
`Int64_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n,`
`ppl_Coefficient_t ext_d, int *poptimum`) [**related**]
- 10.101.2.51** `int ppl_Pointset_Powerset_Int64_Box_maximize_with_point` (`ppl_const_Pointset -`
`Powerset_Int64_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t`
`ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point`) [**related**]
- 10.101.2.52** `int ppl_Pointset_Powerset_Int64_Box_minimize` (`ppl_const_Pointset_Powerset -`
`Int64_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n,`
`ppl_Coefficient_t ext_d, int *poptimum`) [**related**]
- 10.101.2.53** `int ppl_Pointset_Powerset_Int64_Box_minimize_with_point` (`ppl_const_Pointset -`
`Powerset_Int64_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t`
`ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point`) [**related**]
- 10.101.2.54** `int ppl_Pointset_Powerset_Int64_Box_OK` (`ppl_const_Pointset_Powerset_Int64 -`
`Box_t ph`) [**related**]

- 10.101.2.55 `int ppl_Pointset_Powerset_Int64_Box_omega_reduce (ppl_Pointset_Powerset_Int64_Box_t ph)` [`related`]
- 10.101.2.56 `int ppl_Pointset_Powerset_Int64_Box_pairwise_reduce (ppl_Pointset_Powerset_Int64_Box_t ph)` [`related`]
- 10.101.2.57 `int ppl_Pointset_Powerset_Int64_Box_refine_with_congruence (ppl_Pointset_Powerset_Int64_Box_t ph, ppl_const_Congruence_t c)` [`related`]
- 10.101.2.58 `int ppl_Pointset_Powerset_Int64_Box_refine_with_congruences (ppl_Pointset_Powerset_Int64_Box_t ph, ppl_const_Congruence_System_t cs)` [`related`]
- 10.101.2.59 `int ppl_Pointset_Powerset_Int64_Box_refine_with_constraint (ppl_Pointset_Powerset_Int64_Box_t ph, ppl_const_Constraint_t c)` [`related`]
- 10.101.2.60 `int ppl_Pointset_Powerset_Int64_Box_refine_with_constraints (ppl_Pointset_Powerset_Int64_Box_t ph, ppl_const_Constraint_System_t cs)` [`related`]
- 10.101.2.61 `int ppl_Pointset_Powerset_Int64_Box_relation_with_Congruence (ppl_const_Pointset_Powerset_Int64_Box_t ph, ppl_const_Congruence_t c)` [`related`]
- 10.101.2.62 `int ppl_Pointset_Powerset_Int64_Box_relation_with_Constraint (ppl_const_Pointset_Powerset_Int64_Box_t ph, ppl_const_Constraint_t c)` [`related`]

- 10.101.2.63** `int ppl_Pointset_Powerset_Int64_Box_relation_with_Generator`
(`ppl_const_Pointset_Powerset_Int64_Box_t ph`, `ppl_const_Generator_t c`)
[related]
- 10.101.2.64** `int ppl_Pointset_Powerset_Int64_Box_remove_higher_space_dimensions`
(`ppl_Pointset_Powerset_Int64_Box_t ph`, `ppl_dimension_type d`) [related]
- 10.101.2.65** `int ppl_Pointset_Powerset_Int64_Box_remove_space_dimensions`
(`ppl_Pointset_Powerset_Int64_Box_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`)
[related]
- 10.101.2.66** `int ppl_Pointset_Powerset_Int64_Box_simplify_using_context_assign`
(`ppl_Pointset_Powerset_Int64_Box_t x`, `ppl_const_Pointset_Powerset_Int64_Box_t y`)
[related]
- 10.101.2.67** `int ppl_Pointset_Powerset_Int64_Box_size` (`ppl_const_Pointset_Powerset_Int64_Box_t ps`, `size_t * sz`) [related]
- 10.101.2.68** `int ppl_Pointset_Powerset_Int64_Box_space_dimension` (`ppl_const_Pointset_Powerset_Int64_Box_t ph`, `ppl_dimension_type * m`)
[related]
- 10.101.2.69** `int ppl_Pointset_Powerset_Int64_Box_strictly_contains_Pointset_Powerset_Int64_Box` (`ppl_const_Pointset_Powerset_Int64_Box_t x`, `ppl_const_Pointset_Powerset_Int64_Box_t y`) [related]
- 10.101.2.70** `int ppl_Pointset_Powerset_Int64_Box_time_elapse_assign` (`ppl_Pointset_Powerset_Int64_Box_t x`, `ppl_const_Pointset_Powerset_Int64_Box_t y`)
[related]

- 10.101.2.71 `int ppl_Pointset_Powerset_Int64_Box_topological_closure_assign`
(`ppl_Pointset_Powerset_Int64_Box_t ph`) [`related`]

- 10.101.2.72 `int ppl_Pointset_Powerset_Int64_Box_total_memory_in_bytes`
(`ppl_const_Pointset_Powerset_Int64_Box_t ps`, `size_t * sz`) [`related`]

- 10.101.2.73 `int ppl_Pointset_Powerset_Int64_Box_unconstrain_space_dimension`
(`ppl_Pointset_Powerset_Int64_Box_t ph`, `ppl_dimension_type var`) [`related`]

- 10.101.2.74 `int ppl_Pointset_Powerset_Int64_Box_unconstrain_space_dimensions`
(`ppl_Pointset_Powerset_Int64_Box_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`)
[`related`]

- 10.101.2.75 `int ppl_Pointset_Powerset_Int64_Box_upper_bound_assign` (`ppl_Pointset_Powerset_Int64_Box_t x`, `ppl_const_Pointset_Powerset_Int64_Box_t y`)
[`related`]

- 10.101.2.76 `int ppl_Pointset_Powerset_Int64_Box_upper_bound_assign_if_exact`
(`ppl_Pointset_Powerset_Int64_Box_t x`, `ppl_const_Pointset_Powerset_Int64_Box_t y`)
[`related`]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.102 `ppl_Pointset_Powerset_Int8_Box_const_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Int8_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int` [ppl_new_Pointset_Powerset_Int8_Box_const_iterator](#) (`ppl_Pointset_Powerset_Int8_Box_const_iterator_t *pit`)

- int [ppl_new_Pointset_Powerset_Int8_Box_const_iterator_from_const_iterator](#) (ppl_Pointset_Powerset_Int8_Box_const_iterator_t *px, ppl_const_Pointset_Powerset_Int8_Box_const_iterator_t y)
- int [ppl_Pointset_Powerset_Int8_Box_const_iterator_begin](#) (ppl_const_Pointset_Powerset_Int8_Box_t ps, ppl_Pointset_Powerset_Int8_Box_const_iterator_t psit)
- int [ppl_Pointset_Powerset_Int8_Box_const_iterator_end](#) (ppl_const_Pointset_Powerset_Int8_Box_t ps, ppl_Pointset_Powerset_Int8_Box_const_iterator_t psit)
- int [ppl_Pointset_Powerset_Int8_Box_const_iterator_equal_test](#) (ppl_const_Pointset_Powerset_Int8_Box_const_iterator_t x, ppl_const_Pointset_Powerset_Int8_Box_const_iterator_t y)
- int [ppl_Pointset_Powerset_Int8_Box_const_iterator_increment](#) (ppl_Pointset_Powerset_Int8_Box_const_iterator_t psit)
- int [ppl_Pointset_Powerset_Int8_Box_const_iterator_decrement](#) (ppl_Pointset_Powerset_Int8_Box_const_iterator_t psit)
- int [ppl_Pointset_Powerset_Int8_Box_const_iterator_dereference](#) (ppl_const_Pointset_Powerset_Int8_Box_const_iterator_t ps, ppl_const_Int8_Box_t *d)
- int [ppl_delete_Pointset_Powerset_Int8_Box_const_iterator](#) (ppl_const_Pointset_Powerset_Int8_Box_const_iterator_t psit)

10.102.1 Detailed Description

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Int8_Box_tag](#).

10.102.2 Friends And Related Function Documentation

10.102.2.1 int [ppl_delete_Pointset_Powerset_Int8_Box_const_iterator](#)
(ppl_const_Pointset_Powerset_Int8_Box_const_iterator_t *psit*) [[related](#)]

10.102.2.2 int [ppl_new_Pointset_Powerset_Int8_Box_const_iterator](#)
(ppl_Pointset_Powerset_Int8_Box_const_iterator_t * *pit*) [[related](#)]

10.102.2.3 int [ppl_new_Pointset_Powerset_Int8_Box_const_iterator_from_const_iterator](#) (ppl_Pointset_Powerset_Int8_Box_const_iterator_t * *px*,
ppl_const_Pointset_Powerset_Int8_Box_const_iterator_t *y*) [[related](#)]

10.102.2.4 int [ppl_Pointset_Powerset_Int8_Box_const_iterator_begin](#) (ppl_const_Pointset_Powerset_Int8_Box_t *ps*, ppl_Pointset_Powerset_Int8_Box_const_iterator_t *psit*)
[[related](#)]

10.102.2.5 int [ppl_Pointset_Powerset_Int8_Box_const_iterator_decrement](#)
(ppl_Pointset_Powerset_Int8_Box_const_iterator_t *psit*) [[related](#)]

- 10.102.2.6** `int ppl_Pointset_Powerset_Int8_Box_const_iterator_dereference`
 (`ppl_const_Pointset_Powerset_Int8_Box_const_iterator_t ps`, `ppl_const_Int8_Box_t * d`) [**related**]
- 10.102.2.7** `int ppl_Pointset_Powerset_Int8_Box_const_iterator_end` (`ppl_const_Pointset_Powerset_Int8_Box_t ps`, `ppl_Pointset_Powerset_Int8_Box_const_iterator_t psit`) [**related**]
- 10.102.2.8** `int ppl_Pointset_Powerset_Int8_Box_const_iterator_equal_test`
 (`ppl_const_Pointset_Powerset_Int8_Box_const_iterator_t x`,
`ppl_const_Pointset_Powerset_Int8_Box_const_iterator_t y`) [**related**]
- 10.102.2.9** `int ppl_Pointset_Powerset_Int8_Box_const_iterator_increment`
 (`ppl_Pointset_Powerset_Int8_Box_const_iterator_t psit`) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.103 `ppl_Pointset_Powerset_Int8_Box_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a `ppl_Pointset_Powerset_Int8_Box_tag`.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_Int8_Box_iterator` (`ppl_Pointset_Powerset_Int8_Box_iterator_t *pit`)
- `int ppl_new_Pointset_Powerset_Int8_Box_iterator_from_iterator` (`ppl_Pointset_Powerset_Int8_Box_iterator_t *px`, `ppl_const_Pointset_Powerset_Int8_Box_iterator_t y`)
- `int ppl_Pointset_Powerset_Int8_Box_iterator_begin` (`ppl_Pointset_Powerset_Int8_Box_t ps`, `ppl_Pointset_Powerset_Int8_Box_iterator_t psit`)
- `int ppl_Pointset_Powerset_Int8_Box_iterator_end` (`ppl_Pointset_Powerset_Int8_Box_t ps`, `ppl_Pointset_Powerset_Int8_Box_iterator_t psit`)
- `int ppl_Pointset_Powerset_Int8_Box_iterator_equal_test` (`ppl_const_Pointset_Powerset_Int8_Box_iterator_t x`, `ppl_const_Pointset_Powerset_Int8_Box_iterator_t y`)
- `int ppl_Pointset_Powerset_Int8_Box_iterator_increment` (`ppl_Pointset_Powerset_Int8_Box_iterator_t psit`)
- `int ppl_Pointset_Powerset_Int8_Box_iterator_decrement` (`ppl_Pointset_Powerset_Int8_Box_iterator_t psit`)

- int [ppl_Pointset_Powerset_Int8_Box_iterator_dereference](#) (ppl_const_Pointset_Powerset_Int8_Box_iterator_t ps, ppl_const_Int8_Box_t *d)
- int [ppl_delete_Pointset_Powerset_Int8_Box_iterator](#) (ppl_const_Pointset_Powerset_Int8_Box_iterator_t psit)

10.103.1 Detailed Description

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Int8_Box_tag](#).

10.103.2 Friends And Related Function Documentation

10.103.2.1 int [ppl_delete_Pointset_Powerset_Int8_Box_iterator](#) (ppl_const_Pointset_Powerset_Int8_Box_iterator_t *psit*) [[related](#)]

10.103.2.2 int [ppl_new_Pointset_Powerset_Int8_Box_iterator](#) (ppl_Pointset_Powerset_Int8_Box_iterator_t * *pit*) [[related](#)]

10.103.2.3 int [ppl_new_Pointset_Powerset_Int8_Box_iterator_from_iterator](#) (ppl_Pointset_Powerset_Int8_Box_iterator_t * *px*, ppl_const_Pointset_Powerset_Int8_Box_iterator_t *y*) [[related](#)]

10.103.2.4 int [ppl_Pointset_Powerset_Int8_Box_iterator_begin](#) (ppl_Pointset_Powerset_Int8_Box_t *ps*, ppl_Pointset_Powerset_Int8_Box_iterator_t *psit*) [[related](#)]

10.103.2.5 int [ppl_Pointset_Powerset_Int8_Box_iterator_decrement](#) (ppl_Pointset_Powerset_Int8_Box_iterator_t *psit*) [[related](#)]

10.103.2.6 int [ppl_Pointset_Powerset_Int8_Box_iterator_dereference](#) (ppl_const_Pointset_Powerset_Int8_Box_iterator_t *ps*, ppl_const_Int8_Box_t * *d*) [[related](#)]

10.103.2.7 int [ppl_Pointset_Powerset_Int8_Box_iterator_end](#) (ppl_Pointset_Powerset_Int8_Box_t *ps*, ppl_Pointset_Powerset_Int8_Box_iterator_t *psit*) [[related](#)]

10.103.2.8 `int ppl_Pointset_Powerset_Int8_Box_iterator_equal_test (ppl_const_Pointset_Powerset_Int8_Box_iterator_t x, ppl_const_Pointset_Powerset_Int8_Box_iterator_t y)` [**related**]

10.103.2.9 `int ppl_Pointset_Powerset_Int8_Box_iterator_increment (ppl_Pointset_Powerset_Int8_Box_iterator_t psit)` [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.104 ppl_Pointset_Powerset_Int8_Box_tag Interface Reference

Types and functions for [ppl_Pointset_Powerset_Int8_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Pointset_Powerset_Int8_Box` (`ppl_const_Pointset_Powerset_Int8_Box_t ph`)
- `int ppl_new_Pointset_Powerset_Int8_Box_from_space_dimension` (`ppl_Pointset_Powerset_Int8_Box_t *pph`, `ppl_dimension_type d`, `int empty`)
- `int ppl_new_Pointset_Powerset_Int8_Box_from_Pointset_Powerset_Int8_Box` (`ppl_Pointset_Powerset_Int8_Box_t *pph`, `ppl_const_Pointset_Powerset_Int8_Box_t ph`)
- `int ppl_new_Pointset_Powerset_Int8_Box_from_Int8_Box` (`ppl_Pointset_Powerset_Int8_Box_t *pph`, `ppl_const_Int8_Box_t ph`)
- `int ppl_new_Pointset_Powerset_Int8_Box_from_Pointset_Powerset_Int8_Box_with_complexity` (`ppl_Pointset_Powerset_Int8_Box_t *pph`, `ppl_const_Pointset_Powerset_Int8_Box_t ph`, `int complexity`)
- `int ppl_new_Pointset_Powerset_Int8_Box_from_Int8_Box_with_complexity` (`ppl_Pointset_Powerset_Int8_Box_t *pph`, `ppl_const_Int8_Box_t ph`, `int complexity`)
- `int ppl_new_Pointset_Powerset_Int8_Box_from_Constraint_System` (`ppl_Pointset_Powerset_Int8_Box_t *pph`, `ppl_const_Constraint_System_t cs`)
- `int ppl_new_Pointset_Powerset_Int8_Box_from_Congruence_System` (`ppl_Pointset_Powerset_Int8_Box_t *pph`, `ppl_const_Congruence_System_t cs`)
- `int ppl_Pointset_Powerset_Int8_Box_space_dimension` (`ppl_const_Pointset_Powerset_Int8_Box_t ph`, `ppl_dimension_type *m`)
- `int ppl_Pointset_Powerset_Int8_Box_affine_dimension` (`ppl_const_Pointset_Powerset_Int8_Box_t ph`, `ppl_dimension_type *m`)
- `int ppl_Pointset_Powerset_Int8_Box_relation_with_Constraint` (`ppl_const_Pointset_Powerset_Int8_Box_t ph`, `ppl_const_Constraint_t c`)
- `int ppl_Pointset_Powerset_Int8_Box_relation_with_Generator` (`ppl_const_Pointset_Powerset_Int8_Box_t ph`, `ppl_const_Generator_t c`)
- `int ppl_Pointset_Powerset_Int8_Box_relation_with_Congruence` (`ppl_const_Pointset_Powerset_Int8_Box_t ph`, `ppl_const_Congruence_t c`)

- int [ppl_Pointset_Powerset_Int8_Box_is_empty](#) (ppl_const_Pointset_Powerset_Int8_Box_t ph)
- int [ppl_Pointset_Powerset_Int8_Box_is_universe](#) (ppl_const_Pointset_Powerset_Int8_Box_t ph)
- int [ppl_Pointset_Powerset_Int8_Box_is_bounded](#) (ppl_const_Pointset_Powerset_Int8_Box_t ph)
- int [ppl_Pointset_Powerset_Int8_Box_contains_integer_point](#) (ppl_const_Pointset_Powerset_Int8_Box_t ph)
- int [ppl_Pointset_Powerset_Int8_Box_is_topologically_closed](#) (ppl_const_Pointset_Powerset_Int8_Box_t ph)
- int [ppl_Pointset_Powerset_Int8_Box_is_discrete](#) (ppl_const_Pointset_Powerset_Int8_Box_t ph)
- int [ppl_Pointset_Powerset_Int8_Box_topological_closure_assign](#) (ppl_Pointset_Powerset_Int8_Box_t ph)
- int [ppl_Pointset_Powerset_Int8_Box_pairwise_reduce](#) (ppl_Pointset_Powerset_Int8_Box_t ph)
- int [ppl_Pointset_Powerset_Int8_Box_omega_reduce](#) (ppl_Pointset_Powerset_Int8_Box_t ph)
- int [ppl_Pointset_Powerset_Int8_Box_bounds_from_above](#) (ppl_const_Pointset_Powerset_Int8_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_Int8_Box_bounds_from_below](#) (ppl_const_Pointset_Powerset_Int8_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_Int8_Box_maximize](#) (ppl_const_Pointset_Powerset_Int8_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_Int8_Box_minimize](#) (ppl_const_Pointset_Powerset_Int8_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_Int8_Box_maximize_with_point](#) (ppl_const_Pointset_Powerset_Int8_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_Int8_Box_minimize_with_point](#) (ppl_const_Pointset_Powerset_Int8_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_Int8_Box_contains_Pointset_Powerset_Int8_Box](#) (ppl_const_Pointset_Powerset_Int8_Box_t x, ppl_const_Pointset_Powerset_Int8_Box_t y)
- int [ppl_Pointset_Powerset_Int8_Box_strictly_contains_Pointset_Powerset_Int8_Box](#) (ppl_const_Pointset_Powerset_Int8_Box_t x, ppl_const_Pointset_Powerset_Int8_Box_t y)
- int [ppl_Pointset_Powerset_Int8_Box_is_disjoint_from_Pointset_Powerset_Int8_Box](#) (ppl_const_Pointset_Powerset_Int8_Box_t x, ppl_const_Pointset_Powerset_Int8_Box_t y)
- int [ppl_Pointset_Powerset_Int8_Box_geometrically_covers_Pointset_Powerset_Int8_Box](#) (ppl_const_Pointset_Powerset_Int8_Box_t x, ppl_const_Pointset_Powerset_Int8_Box_t y)
- int [ppl_Pointset_Powerset_Int8_Box_geometrically_equals_Pointset_Powerset_Int8_Box](#) (ppl_const_Pointset_Powerset_Int8_Box_t x, ppl_const_Pointset_Powerset_Int8_Box_t y)
- int [ppl_Pointset_Powerset_Int8_Box_equals_Pointset_Powerset_Int8_Box](#) (ppl_const_Pointset_Powerset_Int8_Box_t x, ppl_const_Pointset_Powerset_Int8_Box_t y)
- int [ppl_Pointset_Powerset_Int8_Box_OK](#) (ppl_const_Pointset_Powerset_Int8_Box_t ph)
- int [ppl_Pointset_Powerset_Int8_Box_add_constraint](#) (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Int8_Box_add_congruence](#) (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Int8_Box_add_constraints](#) (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_Int8_Box_add_congruences](#) (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_Int8_Box_refine_with_constraint](#) (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Int8_Box_refine_with_congruence](#) (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_const_Congruence_t c)

- int [ppl_Pointset_Powerset_Int8_Box_refine_with_constraints](#) (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_Int8_Box_refine_with_congruences](#) (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_Int8_Box_intersection_assign](#) (ppl_Pointset_Powerset_Int8_Box_t x, ppl_const_Pointset_Powerset_Int8_Box_t y)
- int [ppl_Pointset_Powerset_Int8_Box_upper_bound_assign](#) (ppl_Pointset_Powerset_Int8_Box_t x, ppl_const_Pointset_Powerset_Int8_Box_t y)
- int [ppl_Pointset_Powerset_Int8_Box_difference_assign](#) (ppl_Pointset_Powerset_Int8_Box_t x, ppl_const_Pointset_Powerset_Int8_Box_t y)
- int [ppl_Pointset_Powerset_Int8_Box_concatenate_assign](#) (ppl_Pointset_Powerset_Int8_Box_t x, ppl_const_Pointset_Powerset_Int8_Box_t y)
- int [ppl_Pointset_Powerset_Int8_Box_time_elapse_assign](#) (ppl_Pointset_Powerset_Int8_Box_t x, ppl_const_Pointset_Powerset_Int8_Box_t y)
- int [ppl_Pointset_Powerset_Int8_Box_upper_bound_assign_if_exact](#) (ppl_Pointset_Powerset_Int8_Box_t x, ppl_const_Pointset_Powerset_Int8_Box_t y)
- int [ppl_Pointset_Powerset_Int8_Box_simplify_using_context_assign](#) (ppl_Pointset_Powerset_Int8_Box_t x, ppl_const_Pointset_Powerset_Int8_Box_t y)
- int [ppl_Pointset_Powerset_Int8_Box_constrains](#) (ppl_Pointset_Powerset_Int8_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_Int8_Box_unconstrain_space_dimension](#) (ppl_Pointset_Powerset_Int8_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_Int8_Box_unconstrain_space_dimensions](#) (ppl_Pointset_Powerset_Int8_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_Int8_Box_affine_image](#) (ppl_Pointset_Powerset_Int8_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Int8_Box_affine_preimage](#) (ppl_Pointset_Powerset_Int8_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Int8_Box_bounded_affine_image](#) (ppl_Pointset_Powerset_Int8_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Int8_Box_bounded_affine_preimage](#) (ppl_Pointset_Powerset_Int8_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Int8_Box_generalized_affine_image](#) (ppl_Pointset_Powerset_Int8_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Int8_Box_generalized_affine_preimage](#) (ppl_Pointset_Powerset_Int8_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Int8_Box_generalized_affine_image_lhs_rhs](#) (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_Int8_Box_generalized_affine_preimage_lhs_rhs](#) (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_Int8_Box_add_space_dimensions_and_embed](#) (ppl_Pointset_Powerset_Int8_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Int8_Box_add_space_dimensions_and_project](#) (ppl_Pointset_Powerset_Int8_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Int8_Box_remove_space_dimensions](#) (ppl_Pointset_Powerset_Int8_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)

- int [ppl_Pointset_Powerset_Int8_Box_remove_higher_space_dimensions](#) (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_dimension_type d)
- int [ppl_Pointset_Powerset_Int8_Box_expand_space_dimension](#) (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_dimension_type d, ppl_dimension_type m)
- int [ppl_Pointset_Powerset_Int8_Box_fold_space_dimensions](#) (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)
- int [ppl_Pointset_Powerset_Int8_Box_map_space_dimensions](#) (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_dimension_type maps[], size_t n)
- int [ppl_Pointset_Powerset_Int8_Box_drop_some_non_integer_points](#) (ppl_Pointset_Powerset_Int8_Box_t ph, int complexity)
- int [ppl_Pointset_Powerset_Int8_Box_drop_some_non_integer_points_2](#) (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_dimension_type ds[], size_t n, int complexity)
- int [ppl_Pointset_Powerset_Int8_Box_external_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Int8_Box_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Int8_Box_total_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Int8_Box_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Int8_Box_size](#) (ppl_const_Pointset_Powerset_Int8_Box_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Int8_Box_add_disjunct](#) (ppl_Pointset_Powerset_Int8_Box_t ps, ppl_const_Int8_Box_t d)
- int [ppl_Pointset_Powerset_Int8_Box_drop_disjunct](#) (ppl_Pointset_Powerset_Int8_Box_t ps, ppl_const_Pointset_Powerset_Int8_Box_iterator_t cit, ppl_Pointset_Powerset_Int8_Box_iterator_t it)
- int [ppl_Pointset_Powerset_Int8_Box_drop_disjuncts](#) (ppl_Pointset_Powerset_Int8_Box_t ps, ppl_const_Pointset_Powerset_Int8_Box_iterator_t first, ppl_const_Pointset_Powerset_Int8_Box_iterator_t last)

10.104.1 Detailed Description

Types and functions for [ppl_Pointset_Powerset_Int8_Box_tag](#).

10.104.2 Friends And Related Function Documentation

10.104.2.1 int [ppl_delete_Pointset_Powerset_Int8_Box](#) (ppl_const_Pointset_Powerset_Int8_Box_t *ph*) [[related](#)]

10.104.2.2 int [ppl_new_Pointset_Powerset_Int8_Box_from_Congruence_System](#) (ppl_Pointset_Powerset_Int8_Box_t * *pph*, ppl_const_Congruence_System_t *cs*) [[related](#)]

10.104.2.3 int [ppl_new_Pointset_Powerset_Int8_Box_from_Constraint_System](#) (ppl_Pointset_Powerset_Int8_Box_t * *pph*, ppl_const_Constraint_System_t *cs*) [[related](#)]

- 10.104.2.4** `int ppl_new_Pointset_Powerset_Int8_Box_from_Int8_Box (ppl_Pointset_Powerset_Int8_Box_t * pph, ppl_const_Int8_Box_t ph)` **[related]**
- 10.104.2.5** `int ppl_new_Pointset_Powerset_Int8_Box_from_Int8_Box_with_complexity (ppl_Pointset_Powerset_Int8_Box_t * pph, ppl_const_Int8_Box_t ph, int complexity)` **[related]**
- 10.104.2.6** `int ppl_new_Pointset_Powerset_Int8_Box_from_Pointset_Powerset_Int8_Box (ppl_Pointset_Powerset_Int8_Box_t * pph, ppl_const_Pointset_Powerset_Int8_Box_t ph)` **[related]**
- 10.104.2.7** `int ppl_new_Pointset_Powerset_Int8_Box_from_Pointset_Powerset_Int8_Box_with_complexity (ppl_Pointset_Powerset_Int8_Box_t * pph, ppl_const_Pointset_Powerset_Int8_Box_t ph, int complexity)` **[related]**
- 10.104.2.8** `int ppl_new_Pointset_Powerset_Int8_Box_from_space_dimension (ppl_Pointset_Powerset_Int8_Box_t * pph, ppl_dimension_type d, int empty)` **[related]**
- 10.104.2.9** `int ppl_Pointset_Powerset_Int8_Box_add_congruence (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_const_Congruence_t c)` **[related]**
- 10.104.2.10** `int ppl_Pointset_Powerset_Int8_Box_add_congruences (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_const_Congruence_System_t cs)` **[related]**
- 10.104.2.11** `int ppl_Pointset_Powerset_Int8_Box_add_constraint (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_const_Constraint_t c)` **[related]**

- 10.104.2.12 `int ppl_Pointset_Powerset_Int8_Box_add_constraints (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_const_Constraint_System_t cs)` `[related]`
- 10.104.2.13 `int ppl_Pointset_Powerset_Int8_Box_add_disjunct (ppl_Pointset_Powerset_Int8_Box_t ps, ppl_const_Int8_Box_t d)` `[related]`
- 10.104.2.14 `int ppl_Pointset_Powerset_Int8_Box_add_space_dimensions_and_embed (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_dimension_type d)` `[related]`
- 10.104.2.15 `int ppl_Pointset_Powerset_Int8_Box_add_space_dimensions_and_project (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_dimension_type d)` `[related]`
- 10.104.2.16 `int ppl_Pointset_Powerset_Int8_Box_affine_dimension (ppl_const_Pointset_Powerset_Int8_Box_t ph, ppl_dimension_type * m)` `[related]`
- 10.104.2.17 `int ppl_Pointset_Powerset_Int8_Box_affine_image (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` `[related]`
- 10.104.2.18 `int ppl_Pointset_Powerset_Int8_Box_affine_preimage (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` `[related]`
- 10.104.2.19 `int ppl_Pointset_Powerset_Int8_Box_bounded_affine_image (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` `[related]`

- 10.104.2.20 `int ppl_Pointset_Powerset_Int8_Box_bounded_affine_preimage (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [**related**]
- 10.104.2.21 `int ppl_Pointset_Powerset_Int8_Box_bounds_from_above (ppl_const_Pointset_Powerset_Int8_Box_t ph, ppl_const_Linear_Expression_t le)` [**related**]
- 10.104.2.22 `int ppl_Pointset_Powerset_Int8_Box_bounds_from_below (ppl_const_Pointset_Powerset_Int8_Box_t ph, ppl_const_Linear_Expression_t le)` [**related**]
- 10.104.2.23 `int ppl_Pointset_Powerset_Int8_Box_concatenate_assign (ppl_Pointset_Powerset_Int8_Box_t x, ppl_const_Pointset_Powerset_Int8_Box_t y)` [**related**]
- 10.104.2.24 `int ppl_Pointset_Powerset_Int8_Box_constrains (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_dimension_type var)` [**related**]
- 10.104.2.25 `int ppl_Pointset_Powerset_Int8_Box_contains_integer_point (ppl_const_Pointset_Powerset_Int8_Box_t ph)` [**related**]
- 10.104.2.26 `int ppl_Pointset_Powerset_Int8_Box_contains_Pointset_Powerset_Int8_Box (ppl_const_Pointset_Powerset_Int8_Box_t x, ppl_const_Pointset_Powerset_Int8_Box_t y)` [**related**]
- 10.104.2.27 `int ppl_Pointset_Powerset_Int8_Box_difference_assign (ppl_Pointset_Powerset_Int8_Box_t x, ppl_const_Pointset_Powerset_Int8_Box_t y)` [**related**]

- 10.104.2.28** `int ppl_Pointset_Powerset_Int8_Box_drop_disjunct (ppl_Pointset_Powerset_Int8_Box_t ps, ppl_const_Pointset_Powerset_Int8_Box_iterator_t cit, ppl_Pointset_Powerset_Int8_Box_iterator_t it)` [**related**]
- 10.104.2.29** `int ppl_Pointset_Powerset_Int8_Box_drop_disjuncts (ppl_Pointset_Powerset_Int8_Box_t ps, ppl_const_Pointset_Powerset_Int8_Box_iterator_t first, ppl_const_Pointset_Powerset_Int8_Box_iterator_t last)` [**related**]
- 10.104.2.30** `int ppl_Pointset_Powerset_Int8_Box_drop_some_non_integer_points (ppl_Pointset_Powerset_Int8_Box_t ph, int complexity)` [**related**]
- 10.104.2.31** `int ppl_Pointset_Powerset_Int8_Box_drop_some_non_integer_points_2 (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_dimension_type ds[], size_t n, int complexity)` [**related**]
- 10.104.2.32** `int ppl_Pointset_Powerset_Int8_Box_equals_Pointset_Powerset_Int8_Box (ppl_const_Pointset_Powerset_Int8_Box_t x, ppl_const_Pointset_Powerset_Int8_Box_t y)` [**related**]
- 10.104.2.33** `int ppl_Pointset_Powerset_Int8_Box_expand_space_dimension (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_dimension_type d, ppl_dimension_type m)` [**related**]
- 10.104.2.34** `int ppl_Pointset_Powerset_Int8_Box_external_memory_in_bytes (ppl_const_Pointset_Powerset_Int8_Box_t ps, size_t * sz)` [**related**]
- 10.104.2.35** `int ppl_Pointset_Powerset_Int8_Box_fold_space_dimensions (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [**related**]

- 10.104.2.36 `int ppl_Pointset_Powerset_Int8_Box_generalized_affine_image`
 (`ppl_Pointset_Powerset_Int8_Box_t ph`, `ppl_dimension_type var`, `enum`
`ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.104.2.37 `int ppl_Pointset_Powerset_Int8_Box_generalized_affine_image_lhs_rhs`
 (`ppl_Pointset_Powerset_Int8_Box_t ph`, `ppl_const_Linear_Expression_t lhs`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
 [`related`]
- 10.104.2.38 `int ppl_Pointset_Powerset_Int8_Box_generalized_affine_preimage`
 (`ppl_Pointset_Powerset_Int8_Box_t ph`, `ppl_dimension_type var`, `enum`
`ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.104.2.39 `int ppl_Pointset_Powerset_Int8_Box_generalized_affine_preimage_lhs_rhs`
 (`ppl_Pointset_Powerset_Int8_Box_t ph`, `ppl_const_Linear_Expression_t lhs`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
 [`related`]
- 10.104.2.40 `int ppl_Pointset_Powerset_Int8_Box_geometrically_covers_Pointset_-`
`Powerset_Int8_Box` (`ppl_const_Pointset_Powerset_Int8_Box_t x`,
`ppl_const_Pointset_Powerset_Int8_Box_t y`) [`related`]
- 10.104.2.41 `int ppl_Pointset_Powerset_Int8_Box_geometrically_equals_Pointset_-`
`Powerset_Int8_Box` (`ppl_const_Pointset_Powerset_Int8_Box_t x`,
`ppl_const_Pointset_Powerset_Int8_Box_t y`) [`related`]
- 10.104.2.42 `int ppl_Pointset_Powerset_Int8_Box_intersection_assign` (`ppl_Pointset_-`
`Powerset_Int8_Box_t x`, `ppl_const_Pointset_Powerset_Int8_Box_t y`)
 [`related`]

- 10.104.2.43 `int ppl_Pointset_Powerset_Int8_Box_is_bounded (ppl_const_Pointset_Powerset_Int8_Box_t ph)` [related]
- 10.104.2.44 `int ppl_Pointset_Powerset_Int8_Box_is_discrete (ppl_const_Pointset_Powerset_Int8_Box_t ph)` [related]
- 10.104.2.45 `int ppl_Pointset_Powerset_Int8_Box_is_disjoint_from_Pointset_Powerset_Int8_Box (ppl_const_Pointset_Powerset_Int8_Box_t x, ppl_const_Pointset_Powerset_Int8_Box_t y)` [related]
- 10.104.2.46 `int ppl_Pointset_Powerset_Int8_Box_is_empty (ppl_const_Pointset_Powerset_Int8_Box_t ph)` [related]
- 10.104.2.47 `int ppl_Pointset_Powerset_Int8_Box_is_topologically_closed (ppl_const_Pointset_Powerset_Int8_Box_t ph)` [related]
- 10.104.2.48 `int ppl_Pointset_Powerset_Int8_Box_is_universe (ppl_const_Pointset_Powerset_Int8_Box_t ph)` [related]
- 10.104.2.49 `int ppl_Pointset_Powerset_Int8_Box_map_space_dimensions (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_dimension_type maps[], size_t n)` [related]
- 10.104.2.50 `int ppl_Pointset_Powerset_Int8_Box_maximize (ppl_const_Pointset_Powerset_Int8_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [related]
- 10.104.2.51 `int ppl_Pointset_Powerset_Int8_Box_maximize_with_point (ppl_const_Pointset_Powerset_Int8_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` [related]

- 10.104.2.52 `int ppl_Pointset_Powerset_Int8_Box_minimize (ppl_const_Pointset_Powerset_Int8_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)` `[related]`
- 10.104.2.53 `int ppl_Pointset_Powerset_Int8_Box_minimize_with_point (ppl_const_Pointset_Powerset_Int8_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` `[related]`
- 10.104.2.54 `int ppl_Pointset_Powerset_Int8_Box_OK (ppl_const_Pointset_Powerset_Int8_Box_t ph)` `[related]`
- 10.104.2.55 `int ppl_Pointset_Powerset_Int8_Box_omega_reduce (ppl_Pointset_Powerset_Int8_Box_t ph)` `[related]`
- 10.104.2.56 `int ppl_Pointset_Powerset_Int8_Box_pairwise_reduce (ppl_Pointset_Powerset_Int8_Box_t ph)` `[related]`
- 10.104.2.57 `int ppl_Pointset_Powerset_Int8_Box_refine_with_congruence (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_const_Congruence_t c)` `[related]`
- 10.104.2.58 `int ppl_Pointset_Powerset_Int8_Box_refine_with_congruences (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_const_Congruence_System_t cs)` `[related]`
- 10.104.2.59 `int ppl_Pointset_Powerset_Int8_Box_refine_with_constraint (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_const_Constraint_t c)` `[related]`
- 10.104.2.60 `int ppl_Pointset_Powerset_Int8_Box_refine_with_constraints (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_const_Constraint_System_t cs)` `[related]`

- 10.104.2.61** `int ppl_Pointset_Powerset_Int8_Box_relation_with_Congruence`
(`ppl_const_Pointset_Powerset_Int8_Box_t ph`, `ppl_const_Congruence_t c`)
[related]
- 10.104.2.62** `int ppl_Pointset_Powerset_Int8_Box_relation_with_Constraint`
(`ppl_const_Pointset_Powerset_Int8_Box_t ph`, `ppl_const_Constraint_t c`)
[related]
- 10.104.2.63** `int ppl_Pointset_Powerset_Int8_Box_relation_with_Generator`
(`ppl_const_Pointset_Powerset_Int8_Box_t ph`, `ppl_const_Generator_t c`)
[related]
- 10.104.2.64** `int ppl_Pointset_Powerset_Int8_Box_remove_higher_space_dimensions`
(`ppl_Pointset_Powerset_Int8_Box_t ph`, `ppl_dimension_type d`) [related]
- 10.104.2.65** `int ppl_Pointset_Powerset_Int8_Box_remove_space_dimensions`
(`ppl_Pointset_Powerset_Int8_Box_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`)
[related]
- 10.104.2.66** `int ppl_Pointset_Powerset_Int8_Box_simplify_using_context_assign`
(`ppl_Pointset_Powerset_Int8_Box_t x`, `ppl_const_Pointset_Powerset_Int8_Box_t y`)
[related]
- 10.104.2.67** `int ppl_Pointset_Powerset_Int8_Box_size` (`ppl_const_Pointset_Powerset_Int8_Box_t ps`, `size_t * sz`) [related]
- 10.104.2.68** `int ppl_Pointset_Powerset_Int8_Box_space_dimension` (`ppl_const_Pointset_Powerset_Int8_Box_t ph`, `ppl_dimension_type * m`)
[related]

- 10.104.2.69** `int ppl_Pointset_Powerset_Int8_Box_strictly_contains_Pointset_Powerset_Int8_Box (ppl_const_Pointset_Powerset_Int8_Box_t x, ppl_const_Pointset_Powerset_Int8_Box_t y)` [**related**]
- 10.104.2.70** `int ppl_Pointset_Powerset_Int8_Box_time_elapse_assign (ppl_Pointset_Powerset_Int8_Box_t x, ppl_const_Pointset_Powerset_Int8_Box_t y)` [**related**]
- 10.104.2.71** `int ppl_Pointset_Powerset_Int8_Box_topological_closure_assign (ppl_Pointset_Powerset_Int8_Box_t ph)` [**related**]
- 10.104.2.72** `int ppl_Pointset_Powerset_Int8_Box_total_memory_in_bytes (ppl_const_Pointset_Powerset_Int8_Box_t ps, size_t * sz)` [**related**]
- 10.104.2.73** `int ppl_Pointset_Powerset_Int8_Box_unconstrain_space_dimension (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_dimension_type var)` [**related**]
- 10.104.2.74** `int ppl_Pointset_Powerset_Int8_Box_unconstrain_space_dimensions (ppl_Pointset_Powerset_Int8_Box_t ph, ppl_dimension_type ds[], size_t n)` [**related**]
- 10.104.2.75** `int ppl_Pointset_Powerset_Int8_Box_upper_bound_assign (ppl_Pointset_Powerset_Int8_Box_t x, ppl_const_Pointset_Powerset_Int8_Box_t y)` [**related**]
- 10.104.2.76** `int ppl_Pointset_Powerset_Int8_Box_upper_bound_assign_if_exact (ppl_Pointset_Powerset_Int8_Box_t x, ppl_const_Pointset_Powerset_Int8_Box_t y)` [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.105 `ppl_Pointset_Powerset_Long_Double_Box_const_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a const `ppl_Pointset_Powerset_Long_Double_Box_tag`.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_Long_Double_Box_const_iterator` (`ppl_Pointset_Powerset_Long_Double_Box_const_iterator_t *pit`)
- `int ppl_new_Pointset_Powerset_Long_Double_Box_const_iterator_from_const_iterator` (`ppl_Pointset_Powerset_Long_Double_Box_const_iterator_t *px`, `ppl_const_Pointset_Powerset_Long_Double_Box_const_iterator_t y`)
- `int ppl_Pointset_Powerset_Long_Double_Box_const_iterator_begin` (`ppl_const_Pointset_Powerset_Long_Double_Box_t ps`, `ppl_Pointset_Powerset_Long_Double_Box_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Long_Double_Box_const_iterator_end` (`ppl_const_Pointset_Powerset_Long_Double_Box_t ps`, `ppl_Pointset_Powerset_Long_Double_Box_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Long_Double_Box_const_iterator_equal_test` (`ppl_const_Pointset_Powerset_Long_Double_Box_const_iterator_t x`, `ppl_const_Pointset_Powerset_Long_Double_Box_const_iterator_t y`)
- `int ppl_Pointset_Powerset_Long_Double_Box_const_iterator_increment` (`ppl_Pointset_Powerset_Long_Double_Box_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Long_Double_Box_const_iterator_decrement` (`ppl_Pointset_Powerset_Long_Double_Box_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Long_Double_Box_const_iterator_dereference` (`ppl_const_Pointset_Powerset_Long_Double_Box_const_iterator_t ps`, `ppl_const_Long_Double_Box_t *d`)
- `int ppl_delete_Pointset_Powerset_Long_Double_Box_const_iterator` (`ppl_const_Pointset_Powerset_Long_Double_Box_const_iterator_t psit`)

10.105.1 Detailed Description

Types and functions for iterating on the disjuncts of a const `ppl_Pointset_Powerset_Long_Double_Box_tag`.

10.105.2 Friends And Related Function Documentation

10.105.2.1 `int ppl_delete_Pointset_Powerset_Long_Double_Box_const_iterator`
(`ppl_const_Pointset_Powerset_Long_Double_Box_const_iterator_t psit`) [**related**]

10.105.2.2 `int ppl_new_Pointset_Powerset_Long_Double_Box_const_iterator`
(`ppl_Pointset_Powerset_Long_Double_Box_const_iterator_t *pit`) [**related**]

- 10.105.2.3** `int ppl_new_Pointset_Powerset_Long_Double_Box_const_iterator_from_const_iterator (ppl_Pointset_Powerset_Long_Double_Box_const_iterator_t * px, ppl_const_Pointset_Powerset_Long_Double_Box_const_iterator_t y)` [**related**]
- 10.105.2.4** `int ppl_Pointset_Powerset_Long_Double_Box_const_iterator_begin (ppl_const_Pointset_Powerset_Long_Double_Box_t ps, ppl_Pointset_Powerset_Long_Double_Box_const_iterator_t psit)` [**related**]
- 10.105.2.5** `int ppl_Pointset_Powerset_Long_Double_Box_const_iterator_decrement (ppl_Pointset_Powerset_Long_Double_Box_const_iterator_t psit)` [**related**]
- 10.105.2.6** `int ppl_Pointset_Powerset_Long_Double_Box_const_iterator_dereference (ppl_const_Pointset_Powerset_Long_Double_Box_const_iterator_t ps, ppl_const_Long_Double_Box_t * d)` [**related**]
- 10.105.2.7** `int ppl_Pointset_Powerset_Long_Double_Box_const_iterator_end (ppl_const_Pointset_Powerset_Long_Double_Box_t ps, ppl_Pointset_Powerset_Long_Double_Box_const_iterator_t psit)` [**related**]
- 10.105.2.8** `int ppl_Pointset_Powerset_Long_Double_Box_const_iterator_equal_test (ppl_const_Pointset_Powerset_Long_Double_Box_const_iterator_t x, ppl_const_Pointset_Powerset_Long_Double_Box_const_iterator_t y)` [**related**]
- 10.105.2.9** `int ppl_Pointset_Powerset_Long_Double_Box_const_iterator_increment (ppl_Pointset_Powerset_Long_Double_Box_const_iterator_t psit)` [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.106 ppl_Pointset_Powerset_Long_Double_Box_iterator_tag Interface Reference

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Long_Double_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- int [ppl_new_Pointset_Powerset_Long_Double_Box_iterator](#) (ppl_Pointset_Powerset_Long_Double_Box_iterator_t *pit)
- int [ppl_new_Pointset_Powerset_Long_Double_Box_iterator_from_iterator](#) (ppl_Pointset_Powerset_Long_Double_Box_iterator_t *px, ppl_const_Pointset_Powerset_Long_Double_Box_iterator_t y)
- int [ppl_Pointset_Powerset_Long_Double_Box_iterator_begin](#) (ppl_Pointset_Powerset_Long_Double_Box_t ps, ppl_Pointset_Powerset_Long_Double_Box_iterator_t psit)
- int [ppl_Pointset_Powerset_Long_Double_Box_iterator_end](#) (ppl_Pointset_Powerset_Long_Double_Box_t ps, ppl_Pointset_Powerset_Long_Double_Box_iterator_t psit)
- int [ppl_Pointset_Powerset_Long_Double_Box_iterator_equal_test](#) (ppl_const_Pointset_Powerset_Long_Double_Box_iterator_t x, ppl_const_Pointset_Powerset_Long_Double_Box_iterator_t y)
- int [ppl_Pointset_Powerset_Long_Double_Box_iterator_increment](#) (ppl_Pointset_Powerset_Long_Double_Box_iterator_t psit)
- int [ppl_Pointset_Powerset_Long_Double_Box_iterator_decrement](#) (ppl_Pointset_Powerset_Long_Double_Box_iterator_t psit)
- int [ppl_Pointset_Powerset_Long_Double_Box_iterator_dereference](#) (ppl_const_Pointset_Powerset_Long_Double_Box_iterator_t ps, ppl_const_Long_Double_Box_t *d)
- int [ppl_delete_Pointset_Powerset_Long_Double_Box_iterator](#) (ppl_const_Pointset_Powerset_Long_Double_Box_iterator_t psit)

10.106.1 Detailed Description

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Long_Double_Box_tag](#).

10.106.2 Friends And Related Function Documentation

10.106.2.1 int [ppl_delete_Pointset_Powerset_Long_Double_Box_iterator](#) (ppl_const_Pointset_Powerset_Long_Double_Box_iterator_t *psit*) [**related**]

10.106.2.2 int [ppl_new_Pointset_Powerset_Long_Double_Box_iterator](#) (ppl_Pointset_Powerset_Long_Double_Box_iterator_t * *pit*) [**related**]

10.106.2.3 int [ppl_new_Pointset_Powerset_Long_Double_Box_iterator_from_iterator](#) (ppl_Pointset_Powerset_Long_Double_Box_iterator_t * *px*, ppl_const_Pointset_Powerset_Long_Double_Box_iterator_t *y*) [**related**]

- 10.106.2.4** `int ppl_Pointset_Powerset_Long_Double_Box_iterator_begin (ppl_Pointset_Powerset_Long_Double_Box_t ps, ppl_Pointset_Powerset_Long_Double_Box_iterator_t psit)` **[related]**
- 10.106.2.5** `int ppl_Pointset_Powerset_Long_Double_Box_iterator_decrement (ppl_Pointset_Powerset_Long_Double_Box_iterator_t psit)` **[related]**
- 10.106.2.6** `int ppl_Pointset_Powerset_Long_Double_Box_iterator_dereference (ppl_const_Pointset_Powerset_Long_Double_Box_iterator_t ps, ppl_const_Long_Double_Box_t * d)` **[related]**
- 10.106.2.7** `int ppl_Pointset_Powerset_Long_Double_Box_iterator_end (ppl_Pointset_Powerset_Long_Double_Box_t ps, ppl_Pointset_Powerset_Long_Double_Box_iterator_t psit)` **[related]**
- 10.106.2.8** `int ppl_Pointset_Powerset_Long_Double_Box_iterator_equal_test (ppl_const_Pointset_Powerset_Long_Double_Box_iterator_t x, ppl_const_Pointset_Powerset_Long_Double_Box_iterator_t y)` **[related]**
- 10.106.2.9** `int ppl_Pointset_Powerset_Long_Double_Box_iterator_increment (ppl_Pointset_Powerset_Long_Double_Box_iterator_t psit)` **[related]**

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.107 `ppl_Pointset_Powerset_Long_Double_Box_tag` Interface Reference

Types and functions for [ppl_Pointset_Powerset_Long_Double_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int` [ppl_delete_Pointset_Powerset_Long_Double_Box](#) (`ppl_const_Pointset_Powerset_Long_Double_Box_t ph`)

- int [ppl_new_Pointset_Powerset_Long_Double_Box_from_space_dimension](#) (ppl_Pointset_Powerset_Long_Double_Box_t *pph, [ppl_dimension_type](#) d, int empty)
- int [ppl_new_Pointset_Powerset_Long_Double_Box_from_Pointset_Powerset_Long_Double_Box](#) (ppl_Pointset_Powerset_Long_Double_Box_t *pph, ppl_const_Pointset_Powerset_Long_Double_Box_t ph)
- int [ppl_new_Pointset_Powerset_Long_Double_Box_from_Long_Double_Box](#) (ppl_Pointset_Powerset_Long_Double_Box_t *pph, ppl_const_Long_Double_Box_t ph)
- int [ppl_new_Pointset_Powerset_Long_Double_Box_from_Pointset_Powerset_Long_Double_Box_with_complexity](#) (ppl_Pointset_Powerset_Long_Double_Box_t *pph, ppl_const_Pointset_Powerset_Long_Double_Box_t ph, int complexity)
- int [ppl_new_Pointset_Powerset_Long_Double_Box_from_Long_Double_Box_with_complexity](#) (ppl_Pointset_Powerset_Long_Double_Box_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- int [ppl_new_Pointset_Powerset_Long_Double_Box_from_Constraint_System](#) (ppl_Pointset_Powerset_Long_Double_Box_t *pph, ppl_const_Constraint_System_t cs)
- int [ppl_new_Pointset_Powerset_Long_Double_Box_from_Congruence_System](#) (ppl_Pointset_Powerset_Long_Double_Box_t *pph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_Long_Double_Box_space_dimension](#) (ppl_const_Pointset_Powerset_Long_Double_Box_t ph, [ppl_dimension_type](#) *m)
- int [ppl_Pointset_Powerset_Long_Double_Box_affine_dimension](#) (ppl_const_Pointset_Powerset_Long_Double_Box_t ph, [ppl_dimension_type](#) *m)
- int [ppl_Pointset_Powerset_Long_Double_Box_relation_with_Constraint](#) (ppl_const_Pointset_Powerset_Long_Double_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Long_Double_Box_relation_with_Generator](#) (ppl_const_Pointset_Powerset_Long_Double_Box_t ph, ppl_const_Generator_t c)
- int [ppl_Pointset_Powerset_Long_Double_Box_relation_with_Congruence](#) (ppl_const_Pointset_Powerset_Long_Double_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Long_Double_Box_is_empty](#) (ppl_const_Pointset_Powerset_Long_Double_Box_t ph)
- int [ppl_Pointset_Powerset_Long_Double_Box_is_universe](#) (ppl_const_Pointset_Powerset_Long_Double_Box_t ph)
- int [ppl_Pointset_Powerset_Long_Double_Box_is_bounded](#) (ppl_const_Pointset_Powerset_Long_Double_Box_t ph)
- int [ppl_Pointset_Powerset_Long_Double_Box_contains_integer_point](#) (ppl_const_Pointset_Powerset_Long_Double_Box_t ph)
- int [ppl_Pointset_Powerset_Long_Double_Box_is_topologically_closed](#) (ppl_const_Pointset_Powerset_Long_Double_Box_t ph)
- int [ppl_Pointset_Powerset_Long_Double_Box_is_discrete](#) (ppl_const_Pointset_Powerset_Long_Double_Box_t ph)
- int [ppl_Pointset_Powerset_Long_Double_Box_topological_closure_assign](#) (ppl_Pointset_Powerset_Long_Double_Box_t ph)
- int [ppl_Pointset_Powerset_Long_Double_Box_pairwise_reduce](#) (ppl_Pointset_Powerset_Long_Double_Box_t ph)
- int [ppl_Pointset_Powerset_Long_Double_Box_omega_reduce](#) (ppl_Pointset_Powerset_Long_Double_Box_t ph)
- int [ppl_Pointset_Powerset_Long_Double_Box_bounds_from_above](#) (ppl_const_Pointset_Powerset_Long_Double_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_Long_Double_Box_bounds_from_below](#) (ppl_const_Pointset_Powerset_Long_Double_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_Long_Double_Box_maximize](#) (ppl_const_Pointset_Powerset_Long_Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)

- [int ppl_Pointset_Powerset_Long_Double_Box_minimize](#) (ppl_const_Pointset_Powerset_Long_Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- [int ppl_Pointset_Powerset_Long_Double_Box_maximize_with_point](#) (ppl_const_Pointset_Powerset_Long_Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- [int ppl_Pointset_Powerset_Long_Double_Box_minimize_with_point](#) (ppl_const_Pointset_Powerset_Long_Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- [int ppl_Pointset_Powerset_Long_Double_Box_contains_Pointset_Powerset_Long_Double_Box](#) (ppl_const_Pointset_Powerset_Long_Double_Box_t x, ppl_const_Pointset_Powerset_Long_Double_Box_t y)
- [int ppl_Pointset_Powerset_Long_Double_Box_strictly_contains_Pointset_Powerset_Long_Double_Box](#) (ppl_const_Pointset_Powerset_Long_Double_Box_t x, ppl_const_Pointset_Powerset_Long_Double_Box_t y)
- [int ppl_Pointset_Powerset_Long_Double_Box_is_disjoint_from_Pointset_Powerset_Long_Double_Box](#) (ppl_const_Pointset_Powerset_Long_Double_Box_t x, ppl_const_Pointset_Powerset_Long_Double_Box_t y)
- [int ppl_Pointset_Powerset_Long_Double_Box_geometrically_covers_Pointset_Powerset_Long_Double_Box](#) (ppl_const_Pointset_Powerset_Long_Double_Box_t x, ppl_const_Pointset_Powerset_Long_Double_Box_t y)
- [int ppl_Pointset_Powerset_Long_Double_Box_geometrically_equals_Pointset_Powerset_Long_Double_Box](#) (ppl_const_Pointset_Powerset_Long_Double_Box_t x, ppl_const_Pointset_Powerset_Long_Double_Box_t y)
- [int ppl_Pointset_Powerset_Long_Double_Box_equals_Pointset_Powerset_Long_Double_Box](#) (ppl_const_Pointset_Powerset_Long_Double_Box_t x, ppl_const_Pointset_Powerset_Long_Double_Box_t y)
- [int ppl_Pointset_Powerset_Long_Double_Box_OK](#) (ppl_const_Pointset_Powerset_Long_Double_Box_t ph)
- [int ppl_Pointset_Powerset_Long_Double_Box_add_constraint](#) (ppl_Pointset_Powerset_Long_Double_Box_t ph, ppl_const_Constraint_t c)
- [int ppl_Pointset_Powerset_Long_Double_Box_add_congruence](#) (ppl_Pointset_Powerset_Long_Double_Box_t ph, ppl_const_Congruence_t c)
- [int ppl_Pointset_Powerset_Long_Double_Box_add_constraints](#) (ppl_Pointset_Powerset_Long_Double_Box_t ph, ppl_const_Constraint_System_t cs)
- [int ppl_Pointset_Powerset_Long_Double_Box_add_congruences](#) (ppl_Pointset_Powerset_Long_Double_Box_t ph, ppl_const_Congruence_System_t cs)
- [int ppl_Pointset_Powerset_Long_Double_Box_refine_with_constraint](#) (ppl_Pointset_Powerset_Long_Double_Box_t ph, ppl_const_Constraint_t c)
- [int ppl_Pointset_Powerset_Long_Double_Box_refine_with_congruence](#) (ppl_Pointset_Powerset_Long_Double_Box_t ph, ppl_const_Congruence_t c)
- [int ppl_Pointset_Powerset_Long_Double_Box_refine_with_constraints](#) (ppl_Pointset_Powerset_Long_Double_Box_t ph, ppl_const_Constraint_System_t cs)
- [int ppl_Pointset_Powerset_Long_Double_Box_refine_with_congruences](#) (ppl_Pointset_Powerset_Long_Double_Box_t ph, ppl_const_Congruence_System_t cs)
- [int ppl_Pointset_Powerset_Long_Double_Box_intersection_assign](#) (ppl_Pointset_Powerset_Long_Double_Box_t x, ppl_const_Pointset_Powerset_Long_Double_Box_t y)
- [int ppl_Pointset_Powerset_Long_Double_Box_upper_bound_assign](#) (ppl_Pointset_Powerset_Long_Double_Box_t x, ppl_const_Pointset_Powerset_Long_Double_Box_t y)
- [int ppl_Pointset_Powerset_Long_Double_Box_difference_assign](#) (ppl_Pointset_Powerset_Long_Double_Box_t x, ppl_const_Pointset_Powerset_Long_Double_Box_t y)

- int [ppl_Pointset_Powerset_Long_Double_Box_concatenate_assign](#) (ppl_Pointset_Powerset_Long_Double_Box_t x, ppl_const_Pointset_Powerset_Long_Double_Box_t y)
- int [ppl_Pointset_Powerset_Long_Double_Box_time_elapse_assign](#) (ppl_Pointset_Powerset_Long_Double_Box_t x, ppl_const_Pointset_Powerset_Long_Double_Box_t y)
- int [ppl_Pointset_Powerset_Long_Double_Box_upper_bound_assign_if_exact](#) (ppl_Pointset_Powerset_Long_Double_Box_t x, ppl_const_Pointset_Powerset_Long_Double_Box_t y)
- int [ppl_Pointset_Powerset_Long_Double_Box_simplify_using_context_assign](#) (ppl_Pointset_Powerset_Long_Double_Box_t x, ppl_const_Pointset_Powerset_Long_Double_Box_t y)
- int [ppl_Pointset_Powerset_Long_Double_Box_constrains](#) (ppl_Pointset_Powerset_Long_Double_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_Long_Double_Box_unconstrain_space_dimension](#) (ppl_Pointset_Powerset_Long_Double_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_Long_Double_Box_unconstrain_space_dimensions](#) (ppl_Pointset_Powerset_Long_Double_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_Long_Double_Box_affine_image](#) (ppl_Pointset_Powerset_Long_Double_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Long_Double_Box_affine_preimage](#) (ppl_Pointset_Powerset_Long_Double_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Long_Double_Box_bounded_affine_image](#) (ppl_Pointset_Powerset_Long_Double_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Long_Double_Box_bounded_affine_preimage](#) (ppl_Pointset_Powerset_Long_Double_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Long_Double_Box_generalized_affine_image](#) (ppl_Pointset_Powerset_Long_Double_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Long_Double_Box_generalized_affine_preimage](#) (ppl_Pointset_Powerset_Long_Double_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Long_Double_Box_generalized_affine_image_lhs_rhs](#) (ppl_Pointset_Powerset_Long_Double_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_Long_Double_Box_generalized_affine_preimage_lhs_rhs](#) (ppl_Pointset_Powerset_Long_Double_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_Long_Double_Box_add_space_dimensions_and_embed](#) (ppl_Pointset_Powerset_Long_Double_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Long_Double_Box_add_space_dimensions_and_project](#) (ppl_Pointset_Powerset_Long_Double_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Long_Double_Box_remove_space_dimensions](#) (ppl_Pointset_Powerset_Long_Double_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_Long_Double_Box_remove_higher_space_dimensions](#) (ppl_Pointset_Powerset_Long_Double_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Long_Double_Box_expand_space_dimension](#) (ppl_Pointset_Powerset_Long_Double_Box_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Pointset_Powerset_Long_Double_Box_fold_space_dimensions](#) (ppl_Pointset_Powerset_Long_Double_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Long_Double_Box_map_space_dimensions](#) (ppl_Pointset_Powerset_Long_Double_Box_t ph, [ppl_dimension_type](#) maps[], size_t n)

- `int ppl_Pointset_Powerset_Long_Double_Box_drop_some_non_integer_points` (`ppl_Pointset_Powerset_Long_Double_Box_t ph`, `int complexity`)
- `int ppl_Pointset_Powerset_Long_Double_Box_drop_some_non_integer_points_2` (`ppl_Pointset_Powerset_Long_Double_Box_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`, `int complexity`)
- `int ppl_Pointset_Powerset_Long_Double_Box_external_memory_in_bytes` (`ppl_const_Pointset_Powerset_Long_Double_Box_t ps`, `size_t *sz`)
- `int ppl_Pointset_Powerset_Long_Double_Box_total_memory_in_bytes` (`ppl_const_Pointset_Powerset_Long_Double_Box_t ps`, `size_t *sz`)
- `int ppl_Pointset_Powerset_Long_Double_Box_size` (`ppl_const_Pointset_Powerset_Long_Double_Box_t ps`, `size_t *sz`)
- `int ppl_Pointset_Powerset_Long_Double_Box_add_disjunct` (`ppl_Pointset_Powerset_Long_Double_Box_t ps`, `ppl_const_Long_Double_Box_t d`)
- `int ppl_Pointset_Powerset_Long_Double_Box_drop_disjunct` (`ppl_Pointset_Powerset_Long_Double_Box_t ps`, `ppl_const_Pointset_Powerset_Long_Double_Box_iterator_t cit`, `ppl_Pointset_Powerset_Long_Double_Box_iterator_t it`)
- `int ppl_Pointset_Powerset_Long_Double_Box_drop_disjuncts` (`ppl_Pointset_Powerset_Long_Double_Box_t ps`, `ppl_const_Pointset_Powerset_Long_Double_Box_iterator_t first`, `ppl_const_Pointset_Powerset_Long_Double_Box_iterator_t last`)

10.107.1 Detailed Description

Types and functions for `ppl_Pointset_Powerset_Long_Double_Box_tag`.

10.107.2 Friends And Related Function Documentation

- 10.107.2.1** `int ppl_delete_Pointset_Powerset_Long_Double_Box` (`ppl_const_Pointset_Powerset_Long_Double_Box_t ph`) [**related**]
- 10.107.2.2** `int ppl_new_Pointset_Powerset_Long_Double_Box_from_Congruence_System` (`ppl_Pointset_Powerset_Long_Double_Box_t *pph`, `ppl_const_Congruence_System_t cs`) [**related**]
- 10.107.2.3** `int ppl_new_Pointset_Powerset_Long_Double_Box_from_Constraint_System` (`ppl_Pointset_Powerset_Long_Double_Box_t *pph`, `ppl_const_Constraint_System_t cs`) [**related**]
- 10.107.2.4** `int ppl_new_Pointset_Powerset_Long_Double_Box_from_Long_Double_Box` (`ppl_Pointset_Powerset_Long_Double_Box_t *pph`, `ppl_const_Long_Double_Box_t ph`) [**related**]

- 10.107.2.5 `int ppl_new_Pointset_Powerset_Long_Double_Box_from_Long_Double_Box_with_complexity (ppl_Pointset_Powerset_Long_Double_Box_t * pph, ppl_const_Long_Double_Box_t ph, int complexity)` [`related`]
- 10.107.2.6 `int ppl_new_Pointset_Powerset_Long_Double_Box_from_Pointset_Powerset_Long_Double_Box (ppl_Pointset_Powerset_Long_Double_Box_t * pph, ppl_const_Pointset_Powerset_Long_Double_Box_t ph)` [`related`]
- 10.107.2.7 `int ppl_new_Pointset_Powerset_Long_Double_Box_from_Pointset_Powerset_Long_Double_Box_with_complexity (ppl_Pointset_Powerset_Long_Double_Box_t * pph, ppl_const_Pointset_Powerset_Long_Double_Box_t ph, int complexity)` [`related`]
- 10.107.2.8 `int ppl_new_Pointset_Powerset_Long_Double_Box_from_space_dimension (ppl_Pointset_Powerset_Long_Double_Box_t * pph, ppl_dimension_type d, int empty)` [`related`]
- 10.107.2.9 `int ppl_Pointset_Powerset_Long_Double_Box_add_congruence (ppl_Pointset_Powerset_Long_Double_Box_t ph, ppl_const_Congruence_t c)` [`related`]
- 10.107.2.10 `int ppl_Pointset_Powerset_Long_Double_Box_add_congruences (ppl_Pointset_Powerset_Long_Double_Box_t ph, ppl_const_Congruence_System_t cs)` [`related`]
- 10.107.2.11 `int ppl_Pointset_Powerset_Long_Double_Box_add_constraint (ppl_Pointset_Powerset_Long_Double_Box_t ph, ppl_const_Constraint_t c)` [`related`]
- 10.107.2.12 `int ppl_Pointset_Powerset_Long_Double_Box_add_constraints (ppl_Pointset_Powerset_Long_Double_Box_t ph, ppl_const_Constraint_System_t cs)` [`related`]

- 10.107.2.13** `int ppl_Pointset_Powerset_Long_Double_Box_add_disjunct (ppl_Pointset_Powerset_Long_Double_Box_t ps, ppl_const_Long_Double_Box_t d)`
[related]
- 10.107.2.14** `int ppl_Pointset_Powerset_Long_Double_Box_add_space_dimensions_and_embed (ppl_Pointset_Powerset_Long_Double_Box_t ph, ppl_dimension_type d)`
[related]
- 10.107.2.15** `int ppl_Pointset_Powerset_Long_Double_Box_add_space_dimensions_and_project (ppl_Pointset_Powerset_Long_Double_Box_t ph, ppl_dimension_type d)`
[related]
- 10.107.2.16** `int ppl_Pointset_Powerset_Long_Double_Box_affine_dimension (ppl_const_Pointset_Powerset_Long_Double_Box_t ph, ppl_dimension_type * m)`
[related]
- 10.107.2.17** `int ppl_Pointset_Powerset_Long_Double_Box_affine_image (ppl_Pointset_Powerset_Long_Double_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [related]
- 10.107.2.18** `int ppl_Pointset_Powerset_Long_Double_Box_affine_preimage (ppl_Pointset_Powerset_Long_Double_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [related]
- 10.107.2.19** `int ppl_Pointset_Powerset_Long_Double_Box_bounded_affine_image (ppl_Pointset_Powerset_Long_Double_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [related]
- 10.107.2.20** `int ppl_Pointset_Powerset_Long_Double_Box_bounded_affine_preimage (ppl_Pointset_Powerset_Long_Double_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [related]

- 10.107.2.21 `int ppl_Pointset_Powerset_Long_Double_Box_bounds_from_above (ppl_const_Pointset_Powerset_Long_Double_Box_t ph, ppl_const_Linear_Expression_t le)` `[related]`
- 10.107.2.22 `int ppl_Pointset_Powerset_Long_Double_Box_bounds_from_below (ppl_const_Pointset_Powerset_Long_Double_Box_t ph, ppl_const_Linear_Expression_t le)` `[related]`
- 10.107.2.23 `int ppl_Pointset_Powerset_Long_Double_Box_concatenate_assign (ppl_Pointset_Powerset_Long_Double_Box_t x, ppl_const_Pointset_Powerset_Long_Double_Box_t y)` `[related]`
- 10.107.2.24 `int ppl_Pointset_Powerset_Long_Double_Box_constrains (ppl_Pointset_Powerset_Long_Double_Box_t ph, ppl_dimension_type var)` `[related]`
- 10.107.2.25 `int ppl_Pointset_Powerset_Long_Double_Box_contains_integer_point (ppl_const_Pointset_Powerset_Long_Double_Box_t ph)` `[related]`
- 10.107.2.26 `int ppl_Pointset_Powerset_Long_Double_Box_contains_Pointset_Powerset_Long_Double_Box (ppl_const_Pointset_Powerset_Long_Double_Box_t x, ppl_const_Pointset_Powerset_Long_Double_Box_t y)` `[related]`
- 10.107.2.27 `int ppl_Pointset_Powerset_Long_Double_Box_difference_assign (ppl_Pointset_Powerset_Long_Double_Box_t x, ppl_const_Pointset_Powerset_Long_Double_Box_t y)` `[related]`
- 10.107.2.28 `int ppl_Pointset_Powerset_Long_Double_Box_drop_disjunct (ppl_Pointset_Powerset_Long_Double_Box_t ps, ppl_const_Pointset_Powerset_Long_Double_Box_iterator_t cit, ppl_Pointset_Powerset_Long_Double_Box_iterator_t it)` `[related]`

- 10.107.2.29** `int ppl_Pointset_Powerset_Long_Double_Box_drop_disjuncts`
 (`ppl_Pointset_Powerset_Long_Double_Box_t ps`, `ppl_const_Pointset_Powerset_Long_Double_Box_iterator_t first`,
`ppl_const_Pointset_Powerset_Long_Double_Box_iterator_t last`) [**related**]
- 10.107.2.30** `int ppl_Pointset_Powerset_Long_Double_Box_drop_some_non_integer_points`
 (`ppl_Pointset_Powerset_Long_Double_Box_t ph`, `int complexity`) [**related**]
- 10.107.2.31** `int ppl_Pointset_Powerset_Long_Double_Box_drop_some_non_integer_points_2`
 (`ppl_Pointset_Powerset_Long_Double_Box_t ph`, `ppl_dimension_type ds[]`, `size_t n`,
`int complexity`) [**related**]
- 10.107.2.32** `int ppl_Pointset_Powerset_Long_Double_Box_equals_Pointset_Powerset_Long_Double_Box`
 (`ppl_const_Pointset_Powerset_Long_Double_Box_t x`, `ppl_const_Pointset_Powerset_Long_Double_Box_t y`) [**related**]
- 10.107.2.33** `int ppl_Pointset_Powerset_Long_Double_Box_expand_space_dimension`
 (`ppl_Pointset_Powerset_Long_Double_Box_t ph`, `ppl_dimension_type d`, `ppl_dimension_type m`) [**related**]
- 10.107.2.34** `int ppl_Pointset_Powerset_Long_Double_Box_external_memory_in_bytes`
 (`ppl_const_Pointset_Powerset_Long_Double_Box_t ps`, `size_t * sz`) [**related**]
- 10.107.2.35** `int ppl_Pointset_Powerset_Long_Double_Box_fold_space_dimensions`
 (`ppl_Pointset_Powerset_Long_Double_Box_t ph`, `ppl_dimension_type ds[]`, `size_t n`,
`ppl_dimension_type d`) [**related**]
- 10.107.2.36** `int ppl_Pointset_Powerset_Long_Double_Box_generalized_affine_image`
 (`ppl_Pointset_Powerset_Long_Double_Box_t ph`, `ppl_dimension_type var`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [**related**]

- 10.107.2.37 `int ppl_Pointset_Powerset_Long_Double_Box_generalized_affine_image_lhs_rhs`
(`ppl_Pointset_Powerset_Long_Double_Box_t ph`, `ppl_const_Linear_Expression_t lhs`, `enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
[related]
- 10.107.2.38 `int ppl_Pointset_Powerset_Long_Double_Box_generalized_affine_preimage`
(`ppl_Pointset_Powerset_Long_Double_Box_t ph`, `ppl_dimension_type var`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [related]
- 10.107.2.39 `int ppl_Pointset_Powerset_Long_Double_Box_generalized_affine_preimage_lhs_rhs`
(`ppl_Pointset_Powerset_Long_Double_Box_t ph`, `ppl_const_Linear_Expression_t lhs`, `enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
[related]
- 10.107.2.40 `int ppl_Pointset_Powerset_Long_Double_Box_geometrically_covers_Pointset_-`
`Powerset_Long_Double_Box` (`ppl_const_Pointset_Powerset_Long_Double_Box_t x`,
`ppl_const_Pointset_Powerset_Long_Double_Box_t y`) [related]
- 10.107.2.41 `int ppl_Pointset_Powerset_Long_Double_Box_geometrically_equals_Pointset_-`
`Powerset_Long_Double_Box` (`ppl_const_Pointset_Powerset_Long_Double_Box_t x`,
`ppl_const_Pointset_Powerset_Long_Double_Box_t y`) [related]
- 10.107.2.42 `int ppl_Pointset_Powerset_Long_Double_Box_intersection_assign` (`ppl_Pointset_-`
`Powerset_Long_Double_Box_t x`, `ppl_const_Pointset_Powerset_Long_Double_Box_t`
`y`) [related]
- 10.107.2.43 `int ppl_Pointset_Powerset_Long_Double_Box_is_bounded`
(`ppl_const_Pointset_Powerset_Long_Double_Box_t ph`) [related]
- 10.107.2.44 `int ppl_Pointset_Powerset_Long_Double_Box_is_discrete`
(`ppl_const_Pointset_Powerset_Long_Double_Box_t ph`) [related]

- 10.107.2.45** `int ppl_Pointset_Powerset_Long_Double_Box_is_disjoint_from_Pointset_Powerset_Long_Double_Box (ppl_const_Pointset_Powerset_Long_Double_Box_t x, ppl_const_Pointset_Powerset_Long_Double_Box_t y)` [**related**]
- 10.107.2.46** `int ppl_Pointset_Powerset_Long_Double_Box_is_empty (ppl_const_Pointset_Powerset_Long_Double_Box_t ph)` [**related**]
- 10.107.2.47** `int ppl_Pointset_Powerset_Long_Double_Box_is_topologically_closed (ppl_const_Pointset_Powerset_Long_Double_Box_t ph)` [**related**]
- 10.107.2.48** `int ppl_Pointset_Powerset_Long_Double_Box_is_universe (ppl_const_Pointset_Powerset_Long_Double_Box_t ph)` [**related**]
- 10.107.2.49** `int ppl_Pointset_Powerset_Long_Double_Box_map_space_dimensions (ppl_Pointset_Powerset_Long_Double_Box_t ph, ppl_dimension_type maps[], size_t n)` [**related**]
- 10.107.2.50** `int ppl_Pointset_Powerset_Long_Double_Box_maximize (ppl_const_Pointset_Powerset_Long_Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)` [**related**]
- 10.107.2.51** `int ppl_Pointset_Powerset_Long_Double_Box_maximize_with_point (ppl_const_Pointset_Powerset_Long_Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` [**related**]
- 10.107.2.52** `int ppl_Pointset_Powerset_Long_Double_Box_minimize (ppl_const_Pointset_Powerset_Long_Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)` [**related**]

- 10.107.2.53** `int ppl_Pointset_Powerset_Long_Double_Box_minimize_with_point (ppl_const_Pointset_Powerset_Long_Double_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` [**related**]
- 10.107.2.54** `int ppl_Pointset_Powerset_Long_Double_Box_OK (ppl_const_Pointset_Powerset_Long_Double_Box_t ph)` [**related**]
- 10.107.2.55** `int ppl_Pointset_Powerset_Long_Double_Box_omega_reduce (ppl_Pointset_Powerset_Long_Double_Box_t ph)` [**related**]
- 10.107.2.56** `int ppl_Pointset_Powerset_Long_Double_Box_pairwise_reduce (ppl_Pointset_Powerset_Long_Double_Box_t ph)` [**related**]
- 10.107.2.57** `int ppl_Pointset_Powerset_Long_Double_Box_refine_with_congruence (ppl_Pointset_Powerset_Long_Double_Box_t ph, ppl_const_Congruence_t c)` [**related**]
- 10.107.2.58** `int ppl_Pointset_Powerset_Long_Double_Box_refine_with_congruences (ppl_Pointset_Powerset_Long_Double_Box_t ph, ppl_const_Congruence_System_t cs)` [**related**]
- 10.107.2.59** `int ppl_Pointset_Powerset_Long_Double_Box_refine_with_constraint (ppl_Pointset_Powerset_Long_Double_Box_t ph, ppl_const_Constraint_t c)` [**related**]
- 10.107.2.60** `int ppl_Pointset_Powerset_Long_Double_Box_refine_with_constraints (ppl_Pointset_Powerset_Long_Double_Box_t ph, ppl_const_Constraint_System_t cs)` [**related**]

- 10.107.2.61** `int ppl_Pointset_Powerset_Long_Double_Box_relation_with_Congruence`
 (`ppl_const_Pointset_Powerset_Long_Double_Box_t ph`, `ppl_const_Congruence_t c`)
 [`related`]
- 10.107.2.62** `int ppl_Pointset_Powerset_Long_Double_Box_relation_with_Constraint`
 (`ppl_const_Pointset_Powerset_Long_Double_Box_t ph`, `ppl_const_Constraint_t c`)
 [`related`]
- 10.107.2.63** `int ppl_Pointset_Powerset_Long_Double_Box_relation_with_Generator`
 (`ppl_const_Pointset_Powerset_Long_Double_Box_t ph`, `ppl_const_Generator_t c`)
 [`related`]
- 10.107.2.64** `int ppl_Pointset_Powerset_Long_Double_Box_remove_higher_space_dimensions`
 (`ppl_Pointset_Powerset_Long_Double_Box_t ph`, `ppl_dimension_type d`)
 [`related`]
- 10.107.2.65** `int ppl_Pointset_Powerset_Long_Double_Box_remove_space_dimensions`
 (`ppl_Pointset_Powerset_Long_Double_Box_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`)
 [`related`]
- 10.107.2.66** `int ppl_Pointset_Powerset_Long_Double_Box_simplify_using -`
`context_assign` (`ppl_Pointset_Powerset_Long_Double_Box_t x`,
`ppl_const_Pointset_Powerset_Long_Double_Box_t y`) [`related`]
- 10.107.2.67** `int ppl_Pointset_Powerset_Long_Double_Box_size` (`ppl_const_Pointset_Powerset -`
`Long_Double_Box_t ps`, `size_t * sz`) [`related`]
- 10.107.2.68** `int ppl_Pointset_Powerset_Long_Double_Box_space_dimension`
 (`ppl_const_Pointset_Powerset_Long_Double_Box_t ph`, `ppl_dimension_type * m`)
 [`related`]

- 10.107.2.69** `int ppl_Pointset_Powerset_Long_Double_Box_strictly_contains_Pointset - Powerset_Long_Double_Box (ppl_const_Pointset_Powerset_Long_Double_Box_t x, ppl_const_Pointset_Powerset_Long_Double_Box_t y) [related]`
- 10.107.2.70** `int ppl_Pointset_Powerset_Long_Double_Box_time_elapse_assign (ppl_Pointset - Powerset_Long_Double_Box_t x, ppl_const_Pointset_Powerset_Long_Double_Box_t y) [related]`
- 10.107.2.71** `int ppl_Pointset_Powerset_Long_Double_Box_topological_closure_assign (ppl_Pointset_Powerset_Long_Double_Box_t ph) [related]`
- 10.107.2.72** `int ppl_Pointset_Powerset_Long_Double_Box_total_memory_in_bytes (ppl_const_Pointset_Powerset_Long_Double_Box_t ps, size_t * sz) [related]`
- 10.107.2.73** `int ppl_Pointset_Powerset_Long_Double_Box_unconstrain_space_dimension (ppl_Pointset_Powerset_Long_Double_Box_t ph, ppl_dimension_type var) [related]`
- 10.107.2.74** `int ppl_Pointset_Powerset_Long_Double_Box_unconstrain_space_dimensions (ppl_Pointset_Powerset_Long_Double_Box_t ph, ppl_dimension_type ds[], size_t n) [related]`
- 10.107.2.75** `int ppl_Pointset_Powerset_Long_Double_Box_upper_bound_assign (ppl_Pointset - Powerset_Long_Double_Box_t x, ppl_const_Pointset_Powerset_Long_Double_Box_t y) [related]`
- 10.107.2.76** `int ppl_Pointset_Powerset_Long_Double_Box_upper_bound - assign_if_exact (ppl_Pointset_Powerset_Long_Double_Box_t x, ppl_const_Pointset_Powerset_Long_Double_Box_t y) [related]`

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.108 `ppl_Pointset_Powerset_NNC_Polyhedron_const_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a const `ppl_Pointset_Powerset_NNC_Polyhedron_tag`.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_NNC_Polyhedron_const_iterator` (`ppl_Pointset_Powerset_NNC_Polyhedron_const_iterator_t *pit`)
- `int ppl_new_Pointset_Powerset_NNC_Polyhedron_const_iterator_from_const_iterator` (`ppl_Pointset_Powerset_NNC_Polyhedron_const_iterator_t *px`, `ppl_const_Pointset_Powerset_NNC_Polyhedron_const_iterator_t y`)
- `int ppl_Pointset_Powerset_NNC_Polyhedron_const_iterator_begin` (`ppl_const_Pointset_Powerset_NNC_Polyhedron_t ps`, `ppl_Pointset_Powerset_NNC_Polyhedron_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_NNC_Polyhedron_const_iterator_end` (`ppl_const_Pointset_Powerset_NNC_Polyhedron_t ps`, `ppl_Pointset_Powerset_NNC_Polyhedron_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_NNC_Polyhedron_const_iterator_equal_test` (`ppl_const_Pointset_Powerset_NNC_Polyhedron_const_iterator_t x`, `ppl_const_Pointset_Powerset_NNC_Polyhedron_const_iterator_t y`)
- `int ppl_Pointset_Powerset_NNC_Polyhedron_const_iterator_increment` (`ppl_Pointset_Powerset_NNC_Polyhedron_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_NNC_Polyhedron_const_iterator_decrement` (`ppl_Pointset_Powerset_NNC_Polyhedron_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_NNC_Polyhedron_const_iterator_dereference` (`ppl_const_Pointset_Powerset_NNC_Polyhedron_const_iterator_t ps`, `ppl_const_Polyhedron_t *d`)
- `int ppl_delete_Pointset_Powerset_NNC_Polyhedron_const_iterator` (`ppl_const_Pointset_Powerset_NNC_Polyhedron_const_iterator_t psit`)

10.108.1 Detailed Description

Types and functions for iterating on the disjuncts of a const `ppl_Pointset_Powerset_NNC_Polyhedron_tag`.

10.108.2 Friends And Related Function Documentation

10.108.2.1 `int ppl_delete_Pointset_Powerset_NNC_Polyhedron_const_iterator`
(`ppl_const_Pointset_Powerset_NNC_Polyhedron_const_iterator_t psit`) [**related**]

10.108.2.2 `int ppl_new_Pointset_Powerset_NNC_Polyhedron_const_iterator`
(`ppl_Pointset_Powerset_NNC_Polyhedron_const_iterator_t *pit`) [**related**]

- 10.108.2.3** `int ppl_new_Pointset_Powerset_NNC_Polyhedron_const_iterator_from_const_iterator`
 (`ppl_Pointset_Powerset_NNC_Polyhedron_const_iterator_t * px`,
`ppl_const_Pointset_Powerset_NNC_Polyhedron_const_iterator_t y`) [**related**]
- 10.108.2.4** `int ppl_Pointset_Powerset_NNC_Polyhedron_const_iterator_begin`
 (`ppl_const_Pointset_Powerset_NNC_Polyhedron_t ps`, `ppl_Pointset_Powerset_NNC_Polyhedron_const_iterator_t psit`) [**related**]
- 10.108.2.5** `int ppl_Pointset_Powerset_NNC_Polyhedron_const_iterator_decrement`
 (`ppl_Pointset_Powerset_NNC_Polyhedron_const_iterator_t psit`) [**related**]
- 10.108.2.6** `int ppl_Pointset_Powerset_NNC_Polyhedron_const_iterator_dereference`
 (`ppl_const_Pointset_Powerset_NNC_Polyhedron_const_iterator_t ps`,
`ppl_const_Polyhedron_t * d`) [**related**]
- 10.108.2.7** `int ppl_Pointset_Powerset_NNC_Polyhedron_const_iterator_end`
 (`ppl_const_Pointset_Powerset_NNC_Polyhedron_t ps`, `ppl_Pointset_Powerset_NNC_Polyhedron_const_iterator_t psit`) [**related**]
- 10.108.2.8** `int ppl_Pointset_Powerset_NNC_Polyhedron_const_iterator_equal_test`
 (`ppl_const_Pointset_Powerset_NNC_Polyhedron_const_iterator_t x`,
`ppl_const_Pointset_Powerset_NNC_Polyhedron_const_iterator_t y`) [**related**]
- 10.108.2.9** `int ppl_Pointset_Powerset_NNC_Polyhedron_const_iterator_increment`
 (`ppl_Pointset_Powerset_NNC_Polyhedron_const_iterator_t psit`) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.109 ppl_Pointset_Powerset_NNC_Polyhedron_iterator_tag Interface Reference

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_NNC_Polyhedron_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_NNC_Polyhedron_iterator` (`ppl_Pointset_Powerset_NNC_Polyhedron_iterator_t *pit`)
- `int ppl_new_Pointset_Powerset_NNC_Polyhedron_iterator_from_iterator` (`ppl_Pointset_Powerset_NNC_Polyhedron_iterator_t *px`, `ppl_const_Pointset_Powerset_NNC_Polyhedron_iterator_t y`)
- `int ppl_Pointset_Powerset_NNC_Polyhedron_iterator_begin` (`ppl_Pointset_Powerset_NNC_Polyhedron_t ps`, `ppl_Pointset_Powerset_NNC_Polyhedron_iterator_t psit`)
- `int ppl_Pointset_Powerset_NNC_Polyhedron_iterator_end` (`ppl_Pointset_Powerset_NNC_Polyhedron_t ps`, `ppl_Pointset_Powerset_NNC_Polyhedron_iterator_t psit`)
- `int ppl_Pointset_Powerset_NNC_Polyhedron_iterator_equal_test` (`ppl_const_Pointset_Powerset_NNC_Polyhedron_iterator_t x`, `ppl_const_Pointset_Powerset_NNC_Polyhedron_iterator_t y`)
- `int ppl_Pointset_Powerset_NNC_Polyhedron_iterator_increment` (`ppl_Pointset_Powerset_NNC_Polyhedron_iterator_t psit`)
- `int ppl_Pointset_Powerset_NNC_Polyhedron_iterator_decrement` (`ppl_Pointset_Powerset_NNC_Polyhedron_iterator_t psit`)
- `int ppl_Pointset_Powerset_NNC_Polyhedron_iterator_dereference` (`ppl_const_Pointset_Powerset_NNC_Polyhedron_iterator_t ps`, `ppl_const_Polyhedron_t *d`)
- `int ppl_delete_Pointset_Powerset_NNC_Polyhedron_iterator` (`ppl_const_Pointset_Powerset_NNC_Polyhedron_iterator_t psit`)

10.109.1 Detailed Description

Types and functions for iterating on the disjuncts of a `ppl_Pointset_Powerset_NNC_Polyhedron_tag`.

10.109.2 Friends And Related Function Documentation

10.109.2.1 `int ppl_delete_Pointset_Powerset_NNC_Polyhedron_iterator`
(`ppl_const_Pointset_Powerset_NNC_Polyhedron_iterator_t psit`) [**related**]

10.109.2.2 `int ppl_new_Pointset_Powerset_NNC_Polyhedron_iterator`
(`ppl_Pointset_Powerset_NNC_Polyhedron_iterator_t *pit`) [**related**]

10.109.2.3 `int ppl_new_Pointset_Powerset_NNC_Polyhedron_iterator_from_iterator`
(`ppl_Pointset_Powerset_NNC_Polyhedron_iterator_t *px`,
`ppl_const_Pointset_Powerset_NNC_Polyhedron_iterator_t y`) [**related**]

10.109.2.4 `int ppl_Pointset_Powerset_NNC_Polyhedron_iterator_begin (ppl_Pointset_Powerset_NNC_Polyhedron_t ps, ppl_Pointset_Powerset_NNC_Polyhedron_iterator_t psit)` [**related**]

10.109.2.5 `int ppl_Pointset_Powerset_NNC_Polyhedron_iterator_decrement (ppl_Pointset_Powerset_NNC_Polyhedron_iterator_t psit)` [**related**]

10.109.2.6 `int ppl_Pointset_Powerset_NNC_Polyhedron_iterator_dereference (ppl_const_Pointset_Powerset_NNC_Polyhedron_iterator_t ps, ppl_const_Polyhedron_t * d)` [**related**]

10.109.2.7 `int ppl_Pointset_Powerset_NNC_Polyhedron_iterator_end (ppl_Pointset_Powerset_NNC_Polyhedron_t ps, ppl_Pointset_Powerset_NNC_Polyhedron_iterator_t psit)` [**related**]

10.109.2.8 `int ppl_Pointset_Powerset_NNC_Polyhedron_iterator_equal_test (ppl_const_Pointset_Powerset_NNC_Polyhedron_iterator_t x, ppl_const_Pointset_Powerset_NNC_Polyhedron_iterator_t y)` [**related**]

10.109.2.9 `int ppl_Pointset_Powerset_NNC_Polyhedron_iterator_increment (ppl_Pointset_Powerset_NNC_Polyhedron_iterator_t psit)` [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.110 `ppl_Pointset_Powerset_NNC_Polyhedron_tag` Interface Reference

Types and functions for [ppl_Pointset_Powerset_NNC_Polyhedron_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int` [ppl_delete_Pointset_Powerset_NNC_Polyhedron](#) (`ppl_const_Pointset_Powerset_NNC_Polyhedron_t` *ph*)

- int [ppl_new_Pointset_Powerset_NNC_Polyhedron_from_space_dimension](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t *pph, [ppl_dimension_type](#) d, int empty)
- int [ppl_new_Pointset_Powerset_NNC_Polyhedron_from_Pointset_Powerset_NNC_Polyhedron](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t *pph, ppl_const_Pointset_Powerset_NNC_Polyhedron_t ph)
- int [ppl_new_Pointset_Powerset_NNC_Polyhedron_from_NNC_Polyhedron](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t *pph, ppl_const_Polyhedron_t ph)
- int [ppl_new_Pointset_Powerset_NNC_Polyhedron_from_Pointset_Powerset_NNC_Polyhedron_with_complexity](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t *pph, ppl_const_Pointset_Powerset_NNC_Polyhedron_t ph, int complexity)
- int [ppl_new_Pointset_Powerset_NNC_Polyhedron_from_NNC_Polyhedron_with_complexity](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_Pointset_Powerset_NNC_Polyhedron_from_Constraint_System](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t *pph, ppl_const_Constraint_System_t cs)
- int [ppl_new_Pointset_Powerset_NNC_Polyhedron_from_Congruence_System](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t *pph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_space_dimension](#) (ppl_const_Pointset_Powerset_NNC_Polyhedron_t ph, [ppl_dimension_type](#) *m)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_affine_dimension](#) (ppl_const_Pointset_Powerset_NNC_Polyhedron_t ph, [ppl_dimension_type](#) *m)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_relation_with_Constraint](#) (ppl_const_Pointset_Powerset_NNC_Polyhedron_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_relation_with_Generator](#) (ppl_const_Pointset_Powerset_NNC_Polyhedron_t ph, ppl_const_Generator_t c)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_relation_with_Congruence](#) (ppl_const_Pointset_Powerset_NNC_Polyhedron_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_is_empty](#) (ppl_const_Pointset_Powerset_NNC_Polyhedron_t ph)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_is_universe](#) (ppl_const_Pointset_Powerset_NNC_Polyhedron_t ph)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_is_bounded](#) (ppl_const_Pointset_Powerset_NNC_Polyhedron_t ph)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_contains_integer_point](#) (ppl_const_Pointset_Powerset_NNC_Polyhedron_t ph)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_is_topologically_closed](#) (ppl_const_Pointset_Powerset_NNC_Polyhedron_t ph)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_is_discrete](#) (ppl_const_Pointset_Powerset_NNC_Polyhedron_t ph)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_topological_closure_assign](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t ph)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_pairwise_reduce](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t ph)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_omega_reduce](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t ph)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_bounds_from_above](#) (ppl_const_Pointset_Powerset_NNC_Polyhedron_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_bounds_from_below](#) (ppl_const_Pointset_Powerset_NNC_Polyhedron_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_maximize](#) (ppl_const_Pointset_Powerset_NNC_Polyhedron_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)

- `int ppl_Pointset_Powerset_NNC_Polyhedron_minimize` (`ppl_const_Pointset_Powerset_NNC_Polyhedron_t` ph, `ppl_const_Linear_Expression_t` le, `ppl_Coefficient_t` ext_n, `ppl_Coefficient_t` ext_d, `int` *poptimum)
- `int ppl_Pointset_Powerset_NNC_Polyhedron_maximize_with_point` (`ppl_const_Pointset_Powerset_NNC_Polyhedron_t` ph, `ppl_const_Linear_Expression_t` le, `ppl_Coefficient_t` ext_n, `ppl_Coefficient_t` ext_d, `int` *poptimum, `ppl_Generator_t` point)
- `int ppl_Pointset_Powerset_NNC_Polyhedron_minimize_with_point` (`ppl_const_Pointset_Powerset_NNC_Polyhedron_t` ph, `ppl_const_Linear_Expression_t` le, `ppl_Coefficient_t` ext_n, `ppl_Coefficient_t` ext_d, `int` *poptimum, `ppl_Generator_t` point)
- `int ppl_Pointset_Powerset_NNC_Polyhedron_contains_Pointset_Powerset_NNC_Polyhedron` (`ppl_const_Pointset_Powerset_NNC_Polyhedron_t` x, `ppl_const_Pointset_Powerset_NNC_Polyhedron_t` y)
- `int ppl_Pointset_Powerset_NNC_Polyhedron_strictly_contains_Pointset_Powerset_NNC_Polyhedron` (`ppl_const_Pointset_Powerset_NNC_Polyhedron_t` x, `ppl_const_Pointset_Powerset_NNC_Polyhedron_t` y)
- `int ppl_Pointset_Powerset_NNC_Polyhedron_is_disjoint_from_Pointset_Powerset_NNC_Polyhedron` (`ppl_const_Pointset_Powerset_NNC_Polyhedron_t` x, `ppl_const_Pointset_Powerset_NNC_Polyhedron_t` y)
- `int ppl_Pointset_Powerset_NNC_Polyhedron_geometrically_covers_Pointset_Powerset_NNC_Polyhedron` (`ppl_const_Pointset_Powerset_NNC_Polyhedron_t` x, `ppl_const_Pointset_Powerset_NNC_Polyhedron_t` y)
- `int ppl_Pointset_Powerset_NNC_Polyhedron_geometrically_equals_Pointset_Powerset_NNC_Polyhedron` (`ppl_const_Pointset_Powerset_NNC_Polyhedron_t` x, `ppl_const_Pointset_Powerset_NNC_Polyhedron_t` y)
- `int ppl_Pointset_Powerset_NNC_Polyhedron_equals_Pointset_Powerset_NNC_Polyhedron` (`ppl_const_Pointset_Powerset_NNC_Polyhedron_t` x, `ppl_const_Pointset_Powerset_NNC_Polyhedron_t` y)
- `int ppl_Pointset_Powerset_NNC_Polyhedron_OK` (`ppl_const_Pointset_Powerset_NNC_Polyhedron_t` ph)
- `int ppl_Pointset_Powerset_NNC_Polyhedron_add_constraint` (`ppl_Pointset_Powerset_NNC_Polyhedron_t` ph, `ppl_const_Constraint_t` c)
- `int ppl_Pointset_Powerset_NNC_Polyhedron_add_congruence` (`ppl_Pointset_Powerset_NNC_Polyhedron_t` ph, `ppl_const_Congruence_t` c)
- `int ppl_Pointset_Powerset_NNC_Polyhedron_add_constraints` (`ppl_Pointset_Powerset_NNC_Polyhedron_t` ph, `ppl_const_Constraint_System_t` cs)
- `int ppl_Pointset_Powerset_NNC_Polyhedron_add_congruences` (`ppl_Pointset_Powerset_NNC_Polyhedron_t` ph, `ppl_const_Congruence_System_t` cs)
- `int ppl_Pointset_Powerset_NNC_Polyhedron_refine_with_constraint` (`ppl_Pointset_Powerset_NNC_Polyhedron_t` ph, `ppl_const_Constraint_t` c)
- `int ppl_Pointset_Powerset_NNC_Polyhedron_refine_with_congruence` (`ppl_Pointset_Powerset_NNC_Polyhedron_t` ph, `ppl_const_Congruence_t` c)
- `int ppl_Pointset_Powerset_NNC_Polyhedron_refine_with_constraints` (`ppl_Pointset_Powerset_NNC_Polyhedron_t` ph, `ppl_const_Constraint_System_t` cs)
- `int ppl_Pointset_Powerset_NNC_Polyhedron_refine_with_congruences` (`ppl_Pointset_Powerset_NNC_Polyhedron_t` ph, `ppl_const_Congruence_System_t` cs)
- `int ppl_Pointset_Powerset_NNC_Polyhedron_intersection_assign` (`ppl_Pointset_Powerset_NNC_Polyhedron_t` x, `ppl_const_Pointset_Powerset_NNC_Polyhedron_t` y)
- `int ppl_Pointset_Powerset_NNC_Polyhedron_upper_bound_assign` (`ppl_Pointset_Powerset_NNC_Polyhedron_t` x, `ppl_const_Pointset_Powerset_NNC_Polyhedron_t` y)
- `int ppl_Pointset_Powerset_NNC_Polyhedron_difference_assign` (`ppl_Pointset_Powerset_NNC_Polyhedron_t` x, `ppl_const_Pointset_Powerset_NNC_Polyhedron_t` y)

- int [ppl_Pointset_Powerset_NNC_Polyhedron_concatenate_assign](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t x, ppl_const_Pointset_Powerset_NNC_Polyhedron_t y)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_time_elapse_assign](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t x, ppl_const_Pointset_Powerset_NNC_Polyhedron_t y)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_upper_bound_assign_if_exact](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t x, ppl_const_Pointset_Powerset_NNC_Polyhedron_t y)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_simplify_using_context_assign](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t x, ppl_const_Pointset_Powerset_NNC_Polyhedron_t y)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_constrains](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_unconstrain_space_dimension](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_unconstrain_space_dimensions](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_affine_image](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_affine_preimage](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_bounded_affine_image](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_bounded_affine_preimage](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_generalized_affine_image](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_generalized_affine_preimage](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_generalized_affine_image_lhs_rhs](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_generalized_affine_preimage_lhs_rhs](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_add_space_dimensions_and_embed](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_add_space_dimensions_and_project](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_remove_space_dimensions](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_remove_higher_space_dimensions](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_expand_space_dimension](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_fold_space_dimensions](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_map_space_dimensions](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t ph, [ppl_dimension_type](#) maps[], size_t n)

- int [ppl_Pointset_Powerset_NNC_Polyhedron_drop_some_non_integer_points](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t ph, int complexity)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_drop_some_non_integer_points_2](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t ph, ppl_dimension_type ds[], size_t n, int complexity)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_external_memory_in_bytes](#) (ppl_const_Pointset_Powerset_NNC_Polyhedron_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_total_memory_in_bytes](#) (ppl_const_Pointset_Powerset_NNC_Polyhedron_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_size](#) (ppl_const_Pointset_Powerset_NNC_Polyhedron_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_add_disjunct](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t ps, ppl_const_Polyhedron_t d)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_drop_disjunct](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t ps, ppl_const_Pointset_Powerset_NNC_Polyhedron_iterator_t cit, ppl_Pointset_Powerset_NNC_Polyhedron_iterator_t it)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_drop_disjuncts](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t ps, ppl_const_Pointset_Powerset_NNC_Polyhedron_iterator_t first, ppl_const_Pointset_Powerset_NNC_Polyhedron_iterator_t last)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_BHZ03_BHRZ03_BHRZ03_widening_assign](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t x, ppl_const_Pointset_Powerset_NNC_Polyhedron_t y)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_BHZ03_H79_H79_widening_assign](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t x, ppl_const_Pointset_Powerset_NNC_Polyhedron_t y)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_BGP99_BHRZ03_extrapolation_assign](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t x, ppl_const_Pointset_Powerset_NNC_Polyhedron_t y, int disjuncts)
- int [ppl_Pointset_Powerset_NNC_Polyhedron_BGP99_H79_extrapolation_assign](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t x, ppl_const_Pointset_Powerset_NNC_Polyhedron_t y, int disjuncts)

10.110.1 Detailed Description

Types and functions for [ppl_Pointset_Powerset_NNC_Polyhedron_tag](#).

10.110.2 Friends And Related Function Documentation

10.110.2.1 int [ppl_delete_Pointset_Powerset_NNC_Polyhedron](#) (ppl_const_Pointset_Powerset_NNC_Polyhedron_t *ph*) [[related](#)]

10.110.2.2 int [ppl_new_Pointset_Powerset_NNC_Polyhedron_from_Congruence_System](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t * *pph*, ppl_const_Congruence_System_t *cs*) [[related](#)]

10.110.2.3 int [ppl_new_Pointset_Powerset_NNC_Polyhedron_from_Constraint_System](#) (ppl_Pointset_Powerset_NNC_Polyhedron_t * *pph*, ppl_const_Constraint_System_t *cs*) [[related](#)]

- 10.110.2.4 `int ppl_new_Pointset_Powerset_NNC_Polyhedron_from_NNC_Polyhedron`
 (`ppl_Pointset_Powerset_NNC_Polyhedron_t * pph`, `ppl_const_Polyhedron_t ph`)
 [`related`]
- 10.110.2.5 `int ppl_new_Pointset_Powerset_NNC_Polyhedron_from_NNC_Polyhedron_-`
`with_complexity` (`ppl_Pointset_Powerset_NNC_Polyhedron_t * pph`,
`ppl_const_Polyhedron_t ph`, `int complexity`) [`related`]
- 10.110.2.6 `int ppl_new_Pointset_Powerset_NNC_Polyhedron_from_Pointset_Powerset_-`
`NNC_Polyhedron` (`ppl_Pointset_Powerset_NNC_Polyhedron_t * pph`,
`ppl_const_Pointset_Powerset_NNC_Polyhedron_t ph`) [`related`]
- 10.110.2.7 `int ppl_new_Pointset_Powerset_NNC_Polyhedron_from_Pointset_Powerset_NNC_-`
`Polyhedron_with_complexity` (`ppl_Pointset_Powerset_NNC_Polyhedron_t * pph`,
`ppl_const_Pointset_Powerset_NNC_Polyhedron_t ph`, `int complexity`) [`related`]
- 10.110.2.8 `int ppl_new_Pointset_Powerset_NNC_Polyhedron_from_space_dimension`
 (`ppl_Pointset_Powerset_NNC_Polyhedron_t * pph`, `ppl_dimension_type d`, `int empty`)
 [`related`]
- 10.110.2.9 `int ppl_Pointset_Powerset_NNC_Polyhedron_add_congruence`
 (`ppl_Pointset_Powerset_NNC_Polyhedron_t ph`, `ppl_const_Congruence_t c`)
 [`related`]
- 10.110.2.10 `int ppl_Pointset_Powerset_NNC_Polyhedron_add_congruences`
 (`ppl_Pointset_Powerset_NNC_Polyhedron_t ph`, `ppl_const_Congruence_System_t cs`)
 [`related`]
- 10.110.2.11 `int ppl_Pointset_Powerset_NNC_Polyhedron_add_constraint`
 (`ppl_Pointset_Powerset_NNC_Polyhedron_t ph`, `ppl_const_Constraint_t c`)
 [`related`]

- 10.110.2.12** `int ppl_Pointset_Powerset_NNC_Polyhedron_add_constraints`
(`ppl_Pointset_Powerset_NNC_Polyhedron_t ph`, `ppl_const_Constraint_System_t cs`)
[related]
- 10.110.2.13** `int ppl_Pointset_Powerset_NNC_Polyhedron_add_disjunct` (`ppl_-`
`Pointset_Powerset_NNC_Polyhedron_t ps`, `ppl_const_Polyhedron_t d`)
[related]
- 10.110.2.14** `int ppl_Pointset_Powerset_NNC_Polyhedron_add_space_dimensions_and_embed`
(`ppl_Pointset_Powerset_NNC_Polyhedron_t ph`, `ppl_dimension_type d`)
[related]
- 10.110.2.15** `int ppl_Pointset_Powerset_NNC_Polyhedron_add_space_dimensions_and_project`
(`ppl_Pointset_Powerset_NNC_Polyhedron_t ph`, `ppl_dimension_type d`)
[related]
- 10.110.2.16** `int ppl_Pointset_Powerset_NNC_Polyhedron_affine_dimension`
(`ppl_const_Pointset_Powerset_NNC_Polyhedron_t ph`, `ppl_dimension_type * m`)
[related]
- 10.110.2.17** `int ppl_Pointset_Powerset_NNC_Polyhedron_affine_image` (`ppl_Pointset_Powerset_-`
`NNC_Polyhedron_t ph`, `ppl_dimension_type var`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [related]
- 10.110.2.18** `int ppl_Pointset_Powerset_NNC_Polyhedron_affine_preimage`
(`ppl_Pointset_Powerset_NNC_Polyhedron_t ph`, `ppl_dimension_type var`,
`ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`) [related]
- 10.110.2.19** `int ppl_Pointset_Powerset_NNC_Polyhedron_BGP99_BHRZ03_-`
`extrapolation_assign` (`ppl_Pointset_Powerset_NNC_Polyhedron_t x`,
`ppl_const_Pointset_Powerset_NNC_Polyhedron_t y`, `int disjuncts`) [related]

- 10.110.2.20 `int ppl_Pointset_Powerset_NNC_Polyhedron_BGP99_H79_-
extrapolation_assign (ppl_Pointset_Powerset_NNC_Polyhedron_t x,
ppl_const_Pointset_Powerset_NNC_Polyhedron_t y, int disjuncts)` [**related**]
- 10.110.2.21 `int ppl_Pointset_Powerset_NNC_Polyhedron_BHZ03_BHRZ03_-
BHRZ03_widening_assign (ppl_Pointset_Powerset_NNC_Polyhedron_t x,
ppl_const_Pointset_Powerset_NNC_Polyhedron_t y)` [**related**]
- 10.110.2.22 `int ppl_Pointset_Powerset_NNC_Polyhedron_BHZ03_H79_H79_-
widening_assign (ppl_Pointset_Powerset_NNC_Polyhedron_t x,
ppl_const_Pointset_Powerset_NNC_Polyhedron_t y)` [**related**]
- 10.110.2.23 `int ppl_Pointset_Powerset_NNC_Polyhedron_bounded_affine_image
(ppl_Pointset_Powerset_NNC_Polyhedron_t ph, ppl_dimension_type var,
ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub,
ppl_const_Coefficient_t d)` [**related**]
- 10.110.2.24 `int ppl_Pointset_Powerset_NNC_Polyhedron_bounded_affine_preimage
(ppl_Pointset_Powerset_NNC_Polyhedron_t ph, ppl_dimension_type var,
ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub,
ppl_const_Coefficient_t d)` [**related**]
- 10.110.2.25 `int ppl_Pointset_Powerset_NNC_Polyhedron_bounds_from_above (ppl_const_-
Pointset_Powerset_NNC_Polyhedron_t ph, ppl_const_Linear_Expression_t le)`
[**related**]
- 10.110.2.26 `int ppl_Pointset_Powerset_NNC_Polyhedron_bounds_from_below (ppl_const_-
Pointset_Powerset_NNC_Polyhedron_t ph, ppl_const_Linear_Expression_t le)`
[**related**]
- 10.110.2.27 `int ppl_Pointset_Powerset_NNC_Polyhedron_concatenate_assign (ppl_Pointset_-
Powerset_NNC_Polyhedron_t x, ppl_const_Pointset_Powerset_NNC_Polyhedron_t y)`
[**related**]

- 10.110.2.28** `int ppl_Pointset_Powerset_NNC_Polyhedron_constrains (ppl_Pointset_Powerset_NNC_Polyhedron_t ph, ppl_dimension_type var)` **[related]**
- 10.110.2.29** `int ppl_Pointset_Powerset_NNC_Polyhedron_contains_integer_point (ppl_const_Pointset_Powerset_NNC_Polyhedron_t ph)` **[related]**
- 10.110.2.30** `int ppl_Pointset_Powerset_NNC_Polyhedron_contains_Pointset_Powerset_NNC_Polyhedron (ppl_const_Pointset_Powerset_NNC_Polyhedron_t x, ppl_const_Pointset_Powerset_NNC_Polyhedron_t y)` **[related]**
- 10.110.2.31** `int ppl_Pointset_Powerset_NNC_Polyhedron_difference_assign (ppl_Pointset_Powerset_NNC_Polyhedron_t x, ppl_const_Pointset_Powerset_NNC_Polyhedron_t y)` **[related]**
- 10.110.2.32** `int ppl_Pointset_Powerset_NNC_Polyhedron_drop_disjunct (ppl_Pointset_Powerset_NNC_Polyhedron_t ps, ppl_const_Pointset_Powerset_NNC_Polyhedron_iterator_t cit, ppl_Pointset_Powerset_NNC_Polyhedron_iterator_t it)` **[related]**
- 10.110.2.33** `int ppl_Pointset_Powerset_NNC_Polyhedron_drop_disjuncts (ppl_Pointset_Powerset_NNC_Polyhedron_t ps, ppl_const_Pointset_Powerset_NNC_Polyhedron_iterator_t first, ppl_const_Pointset_Powerset_NNC_Polyhedron_iterator_t last)` **[related]**
- 10.110.2.34** `int ppl_Pointset_Powerset_NNC_Polyhedron_drop_some_non_integer_points (ppl_Pointset_Powerset_NNC_Polyhedron_t ph, int complexity)` **[related]**
- 10.110.2.35** `int ppl_Pointset_Powerset_NNC_Polyhedron_drop_some_non_integer_points_2 (ppl_Pointset_Powerset_NNC_Polyhedron_t ph, ppl_dimension_type ds[], size_t n, int complexity)` **[related]**

- 10.110.2.36** `int ppl_Pointset_Powerset_NNC_Polyhedron_equals_Pointset_Powerset_NNC_Polyhedron (ppl_const_Pointset_Powerset_NNC_Polyhedron_t x, ppl_const_Pointset_Powerset_NNC_Polyhedron_t y)` [**related**]
- 10.110.2.37** `int ppl_Pointset_Powerset_NNC_Polyhedron_expand_space_dimension (ppl_Pointset_Powerset_NNC_Polyhedron_t ph, ppl_dimension_type d, ppl_dimension_type m)` [**related**]
- 10.110.2.38** `int ppl_Pointset_Powerset_NNC_Polyhedron_external_memory_in_bytes (ppl_const_Pointset_Powerset_NNC_Polyhedron_t ps, size_t * sz)` [**related**]
- 10.110.2.39** `int ppl_Pointset_Powerset_NNC_Polyhedron_fold_space_dimensions (ppl_Pointset_Powerset_NNC_Polyhedron_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [**related**]
- 10.110.2.40** `int ppl_Pointset_Powerset_NNC_Polyhedron_generalized_affine_image (ppl_Pointset_Powerset_NNC_Polyhedron_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.110.2.41** `int ppl_Pointset_Powerset_NNC_Polyhedron_generalized_affine_image_lhs_rhs (ppl_Pointset_Powerset_NNC_Polyhedron_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` [**related**]
- 10.110.2.42** `int ppl_Pointset_Powerset_NNC_Polyhedron_generalized_affine_preimage (ppl_Pointset_Powerset_NNC_Polyhedron_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]

- 10.110.2.43 `int ppl_Pointset_Powerset_NNC_Polyhedron_generalized_affine_preimage_lhs_rhs (ppl_Pointset_Powerset_NNC_Polyhedron_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` [**related**]
- 10.110.2.44 `int ppl_Pointset_Powerset_NNC_Polyhedron_geometrically_covers_Pointset_Powerset_NNC_Polyhedron (ppl_const_Pointset_Powerset_NNC_Polyhedron_t x, ppl_const_Pointset_Powerset_NNC_Polyhedron_t y)` [**related**]
- 10.110.2.45 `int ppl_Pointset_Powerset_NNC_Polyhedron_geometrically_equals_Pointset_Powerset_NNC_Polyhedron (ppl_const_Pointset_Powerset_NNC_Polyhedron_t x, ppl_const_Pointset_Powerset_NNC_Polyhedron_t y)` [**related**]
- 10.110.2.46 `int ppl_Pointset_Powerset_NNC_Polyhedron_intersection_assign (ppl_Pointset_Powerset_NNC_Polyhedron_t x, ppl_const_Pointset_Powerset_NNC_Polyhedron_t y)` [**related**]
- 10.110.2.47 `int ppl_Pointset_Powerset_NNC_Polyhedron_is_bounded (ppl_const_Pointset_Powerset_NNC_Polyhedron_t ph)` [**related**]
- 10.110.2.48 `int ppl_Pointset_Powerset_NNC_Polyhedron_is_discrete (ppl_const_Pointset_Powerset_NNC_Polyhedron_t ph)` [**related**]
- 10.110.2.49 `int ppl_Pointset_Powerset_NNC_Polyhedron_is_disjoint_from_Pointset_Powerset_NNC_Polyhedron (ppl_const_Pointset_Powerset_NNC_Polyhedron_t x, ppl_const_Pointset_Powerset_NNC_Polyhedron_t y)` [**related**]
- 10.110.2.50 `int ppl_Pointset_Powerset_NNC_Polyhedron_is_empty (ppl_const_Pointset_Powerset_NNC_Polyhedron_t ph)` [**related**]

- 10.110.2.51** `int ppl_Pointset_Powerset_NNC_Polyhedron_is_topologically_closed`
`(ppl_const_Pointset_Powerset_NNC_Polyhedron_t ph)` [**related**]
- 10.110.2.52** `int ppl_Pointset_Powerset_NNC_Polyhedron_is_universe`
`(ppl_const_Pointset_Powerset_NNC_Polyhedron_t ph)` [**related**]
- 10.110.2.53** `int ppl_Pointset_Powerset_NNC_Polyhedron_map_space_dimensions`
`(ppl_Pointset_Powerset_NNC_Polyhedron_t ph, ppl_dimension_type maps[], size_t`
`n)` [**related**]
- 10.110.2.54** `int ppl_Pointset_Powerset_NNC_Polyhedron_maximize` `(ppl_const_Pointset_`
`Powerset_NNC_Polyhedron_t ph, ppl_const_Linear_Expression_t le,`
`ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)` [**related**]
- 10.110.2.55** `int ppl_Pointset_Powerset_NNC_Polyhedron_maximize_with_point` `(ppl_const_`
`Pointset_Powerset_NNC_Polyhedron_t ph, ppl_const_Linear_Expression_t le,`
`ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t`
`point)` [**related**]
- 10.110.2.56** `int ppl_Pointset_Powerset_NNC_Polyhedron_minimize` `(ppl_const_Pointset_`
`Powerset_NNC_Polyhedron_t ph, ppl_const_Linear_Expression_t le,`
`ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)` [**related**]
- 10.110.2.57** `int ppl_Pointset_Powerset_NNC_Polyhedron_minimize_with_point` `(ppl_const_`
`Pointset_Powerset_NNC_Polyhedron_t ph, ppl_const_Linear_Expression_t le,`
`ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t`
`point)` [**related**]
- 10.110.2.58** `int ppl_Pointset_Powerset_NNC_Polyhedron_OK` `(ppl_const_Pointset_Powerset_`
`NNC_Polyhedron_t ph)` [**related**]

- 10.110.2.59** int ppl_Pointset_Powerset_NNC_Polyhedron_omega_reduce
(ppl_Pointset_Powerset_NNC_Polyhedron_t *ph*) [**related**]
- 10.110.2.60** int ppl_Pointset_Powerset_NNC_Polyhedron_pairwise_reduce
(ppl_Pointset_Powerset_NNC_Polyhedron_t *ph*) [**related**]
- 10.110.2.61** int ppl_Pointset_Powerset_NNC_Polyhedron_refine_with_congruence
(ppl_Pointset_Powerset_NNC_Polyhedron_t *ph*, ppl_const_Congruence_t *c*)
[**related**]
- 10.110.2.62** int ppl_Pointset_Powerset_NNC_Polyhedron_refine_with_congruences
(ppl_Pointset_Powerset_NNC_Polyhedron_t *ph*, ppl_const_Congruence_System_t *cs*)
[**related**]
- 10.110.2.63** int ppl_Pointset_Powerset_NNC_Polyhedron_refine_with_constraint
(ppl_Pointset_Powerset_NNC_Polyhedron_t *ph*, ppl_const_Constraint_t *c*)
[**related**]
- 10.110.2.64** int ppl_Pointset_Powerset_NNC_Polyhedron_refine_with_constraints
(ppl_Pointset_Powerset_NNC_Polyhedron_t *ph*, ppl_const_Constraint_System_t *cs*)
[**related**]
- 10.110.2.65** int ppl_Pointset_Powerset_NNC_Polyhedron_relation_with_Congruence
(ppl_const_Pointset_Powerset_NNC_Polyhedron_t *ph*, ppl_const_Congruence_t *c*)
[**related**]
- 10.110.2.66** int ppl_Pointset_Powerset_NNC_Polyhedron_relation_with_Constraint
(ppl_const_Pointset_Powerset_NNC_Polyhedron_t *ph*, ppl_const_Constraint_t *c*)
[**related**]

- 10.110.2.67** `int ppl_Pointset_Powerset_NNC_Polyhedron_relation_with_Generator`
 (`ppl_const_Pointset_Powerset_NNC_Polyhedron_t ph`, `ppl_const_Generator_t c`)
 [`related`]
- 10.110.2.68** `int ppl_Pointset_Powerset_NNC_Polyhedron_remove_higher_space_dimensions`
 (`ppl_Pointset_Powerset_NNC_Polyhedron_t ph`, `ppl_dimension_type d`)
 [`related`]
- 10.110.2.69** `int ppl_Pointset_Powerset_NNC_Polyhedron_remove_space_dimensions`
 (`ppl_Pointset_Powerset_NNC_Polyhedron_t ph`, `ppl_dimension_type ds[]`, `size_t n`)
 [`related`]
- 10.110.2.70** `int ppl_Pointset_Powerset_NNC_Polyhedron_simplify_using_-`
`context_assign` (`ppl_Pointset_Powerset_NNC_Polyhedron_t x`,
`ppl_const_Pointset_Powerset_NNC_Polyhedron_t y`) [`related`]
- 10.110.2.71** `int ppl_Pointset_Powerset_NNC_Polyhedron_size` (`ppl_const_Pointset_Powerset_-`
`NNC_Polyhedron_t ps`, `size_t * sz`) [`related`]
- 10.110.2.72** `int ppl_Pointset_Powerset_NNC_Polyhedron_space_dimension`
 (`ppl_const_Pointset_Powerset_NNC_Polyhedron_t ph`, `ppl_dimension_type * m`)
 [`related`]
- 10.110.2.73** `int ppl_Pointset_Powerset_NNC_Polyhedron_strictly_contains_Pointset_-`
`Powerset_NNC_Polyhedron` (`ppl_const_Pointset_Powerset_NNC_Polyhedron_t x`,
`ppl_const_Pointset_Powerset_NNC_Polyhedron_t y`) [`related`]
- 10.110.2.74** `int ppl_Pointset_Powerset_NNC_Polyhedron_time_elapse_assign` (`ppl_Pointset_-`
`Powerset_NNC_Polyhedron_t x`, `ppl_const_Pointset_Powerset_NNC_Polyhedron_t y`)
 [`related`]

10.111 `ppl_Pointset_Powerset_Octagonal_Shape_double_const_iterator_tag` Interface Reference 1253

- 10.110.2.75** `int ppl_Pointset_Powerset_NNC_Polyhedron_topological_closure_assign`
(`ppl_Pointset_Powerset_NNC_Polyhedron_t ph`) [`related`]
- 10.110.2.76** `int ppl_Pointset_Powerset_NNC_Polyhedron_total_memory_in_bytes`
(`ppl_const_Pointset_Powerset_NNC_Polyhedron_t ps`, `size_t * sz`) [`related`]
- 10.110.2.77** `int ppl_Pointset_Powerset_NNC_Polyhedron_unconstrain_space_dimension`
(`ppl_Pointset_Powerset_NNC_Polyhedron_t ph`, `ppl_dimension_type var`)
[`related`]
- 10.110.2.78** `int ppl_Pointset_Powerset_NNC_Polyhedron_unconstrain_space_dimensions`
(`ppl_Pointset_Powerset_NNC_Polyhedron_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`)
[`related`]
- 10.110.2.79** `int ppl_Pointset_Powerset_NNC_Polyhedron_upper_bound_assign` (`ppl_Pointset_Powerset_NNC_Polyhedron_t x`, `ppl_const_Pointset_Powerset_NNC_Polyhedron_t y`)
[`related`]
- 10.110.2.80** `int ppl_Pointset_Powerset_NNC_Polyhedron_upper_bound_assign_if_exact` (`ppl_Pointset_Powerset_NNC_Polyhedron_t x`,
`ppl_const_Pointset_Powerset_NNC_Polyhedron_t y`) [`related`]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.111 `ppl_Pointset_Powerset_Octagonal_Shape_double_const_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Octagonal_Shape_double_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- int [ppl_new_Pointset_Powerset_Octagonal_Shape_double_const_iterator](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_const_iterator_t *pit)
- int [ppl_new_Pointset_Powerset_Octagonal_Shape_double_const_iterator_from_const_iterator](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_const_iterator_t *px, ppl_const_Pointset_Powerset_Octagonal_Shape_double_const_iterator_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_const_iterator_begin](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ps, ppl_Pointset_Powerset_Octagonal_Shape_double_const_iterator_t psit)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_const_iterator_end](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ps, ppl_Pointset_Powerset_Octagonal_Shape_double_const_iterator_t psit)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_const_iterator_equal_test](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_const_iterator_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_double_const_iterator_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_const_iterator_increment](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_const_iterator_t psit)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_const_iterator_decrement](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_const_iterator_t psit)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_const_iterator_dereference](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_const_iterator_t ps, ppl_const_Octagonal_Shape_double_t *d)
- int [ppl_delete_Pointset_Powerset_Octagonal_Shape_double_const_iterator](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_const_iterator_t psit)

10.111.1 Detailed Description

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Octagonal_Shape_double_tag](#).

10.111.2 Friends And Related Function Documentation

10.111.2.1 int [ppl_delete_Pointset_Powerset_Octagonal_Shape_double_const_iterator](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_const_iterator_t *psit*)
[related]

10.111.2.2 int [ppl_new_Pointset_Powerset_Octagonal_Shape_double_const_iterator](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_const_iterator_t * *pit*)
[related]

10.111.2.3 int [ppl_new_Pointset_Powerset_Octagonal_Shape_double_const_iterator_from_const_iterator](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_const_iterator_t * *px*, ppl_const_Pointset_Powerset_Octagonal_Shape_double_const_iterator_t *y*)
[related]

10.111.2.4 `int ppl_Pointset_Powerset_Octagonal_Shape_double_const_iterator_begin`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ps`,
`ppl_Pointset_Powerset_Octagonal_Shape_double_const_iterator_t psit`) [`related`]

10.111.2.5 `int ppl_Pointset_Powerset_Octagonal_Shape_double_const_iterator_decrement`
 (`ppl_Pointset_Powerset_Octagonal_Shape_double_const_iterator_t psit`) [`related`]

10.111.2.6 `int ppl_Pointset_Powerset_Octagonal_Shape_double_const_iterator_dereference`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_double_const_iterator_t ps`,
`ppl_const_Octagonal_Shape_double_t * d`) [`related`]

10.111.2.7 `int ppl_Pointset_Powerset_Octagonal_Shape_double_const_iterator_end`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ps`,
`ppl_Pointset_Powerset_Octagonal_Shape_double_const_iterator_t psit`) [`related`]

10.111.2.8 `int ppl_Pointset_Powerset_Octagonal_Shape_double_const_iterator_equal_test`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_double_const_iterator_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_double_const_iterator_t y`)
 [`related`]

10.111.2.9 `int ppl_Pointset_Powerset_Octagonal_Shape_double_const_iterator_increment`
 (`ppl_Pointset_Powerset_Octagonal_Shape_double_const_iterator_t psit`) [`related`]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.112 `ppl_Pointset_Powerset_Octagonal_Shape_double_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Octagonal_Shape_double_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_Octagonal_Shape_double_iterator` (`ppl_Pointset_Powerset_Octagonal_Shape_double_iterator_t *pit`)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_double_iterator_from_iterator` (`ppl_Pointset_Powerset_Octagonal_Shape_double_iterator_t *px`, `ppl_const_Pointset_Powerset_Octagonal_Shape_double_iterator_t y`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_double_iterator_begin` (`ppl_Pointset_Powerset_Octagonal_Shape_double_t ps`, `ppl_Pointset_Powerset_Octagonal_Shape_double_iterator_t psit`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_double_iterator_end` (`ppl_Pointset_Powerset_Octagonal_Shape_double_t ps`, `ppl_Pointset_Powerset_Octagonal_Shape_double_iterator_t psit`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_double_iterator_equal_test` (`ppl_const_Pointset_Powerset_Octagonal_Shape_double_iterator_t x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_double_iterator_t y`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_double_iterator_increment` (`ppl_Pointset_Powerset_Octagonal_Shape_double_iterator_t psit`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_double_iterator_decrement` (`ppl_Pointset_Powerset_Octagonal_Shape_double_iterator_t psit`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_double_iterator_dereference` (`ppl_const_Pointset_Powerset_Octagonal_Shape_double_iterator_t ps`, `ppl_const_Octagonal_Shape_double_t *d`)
- `int ppl_delete_Pointset_Powerset_Octagonal_Shape_double_iterator` (`ppl_const_Pointset_Powerset_Octagonal_Shape_double_iterator_t psit`)

10.112.1 Detailed Description

Types and functions for iterating on the disjuncts of a `ppl_Pointset_Powerset_Octagonal_Shape_double_tag`.

10.112.2 Friends And Related Function Documentation

10.112.2.1 `int ppl_delete_Pointset_Powerset_Octagonal_Shape_double_iterator`
(`ppl_const_Pointset_Powerset_Octagonal_Shape_double_iterator_t psit`) [**related**]

10.112.2.2 `int ppl_new_Pointset_Powerset_Octagonal_Shape_double_iterator`
(`ppl_Pointset_Powerset_Octagonal_Shape_double_iterator_t *pit`) [**related**]

10.112.2.3 `int ppl_new_Pointset_Powerset_Octagonal_Shape_double_iterator_from_iterator`
(`ppl_Pointset_Powerset_Octagonal_Shape_double_iterator_t *px`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_double_iterator_t y`) [**related**]

10.112.2.4 `int ppl_Pointset_Powerset_Octagonal_Shape_double_iterator_begin`
(`ppl_Pointset_Powerset_Octagonal_Shape_double_t ps`,
`ppl_Pointset_Powerset_Octagonal_Shape_double_iterator_t psit`) [**related**]

- 10.112.2.5 `int ppl_Pointset_Powerset_Octagonal_Shape_double_iterator_decrement`
`(ppl_Pointset_Powerset_Octagonal_Shape_double_iterator_t psit)` [`related`]
- 10.112.2.6 `int ppl_Pointset_Powerset_Octagonal_Shape_double_iterator_dereference`
`(ppl_const_Pointset_Powerset_Octagonal_Shape_double_iterator_t ps,
ppl_const_Octagonal_Shape_double_t * d) [related]`
- 10.112.2.7 `int ppl_Pointset_Powerset_Octagonal_Shape_double_iterator_-`
`end (ppl_Pointset_Powerset_Octagonal_Shape_double_t ps,
ppl_Pointset_Powerset_Octagonal_Shape_double_iterator_t psit) [related]`
- 10.112.2.8 `int ppl_Pointset_Powerset_Octagonal_Shape_double_iterator_equal_test`
`(ppl_const_Pointset_Powerset_Octagonal_Shape_double_iterator_t x,
ppl_const_Pointset_Powerset_Octagonal_Shape_double_iterator_t y) [related]`
- 10.112.2.9 `int ppl_Pointset_Powerset_Octagonal_Shape_double_iterator_increment`
`(ppl_Pointset_Powerset_Octagonal_Shape_double_iterator_t psit)` [`related`]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.113 `ppl_Pointset_Powerset_Octagonal_Shape_double_tag` Interface Reference

Types and functions for [ppl_Pointset_Powerset_Octagonal_Shape_double_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int` [ppl_delete_Pointset_Powerset_Octagonal_Shape_double](#) (`ppl_const_Pointset_Powerset_Octagonal_Shape_double_t` *ph*)
- `int` [ppl_new_Pointset_Powerset_Octagonal_Shape_double_from_space_dimension](#) (`ppl_Pointset_Powerset_Octagonal_Shape_double_t` **pph*, `ppl_dimension_type` *d*, `int` *empty*)
- `int` [ppl_new_Pointset_Powerset_Octagonal_Shape_double_from_Pointset_Powerset_Octagonal_Shape_double](#) (`ppl_Pointset_Powerset_Octagonal_Shape_double_t` **pph*, `ppl_const_Pointset_Powerset_Octagonal_Shape_double_t` *ph*)

- [int ppl_new_Pointset_Powerset_Octagonal_Shape_double_from_Octagonal_Shape_double](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_t *pph, ppl_const_Octagonal_Shape_double_t ph)
- [int ppl_new_Pointset_Powerset_Octagonal_Shape_double_from_Pointset_Powerset_Octagonal_Shape_double_with_complexity](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_t *pph, ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph, int complexity)
- [int ppl_new_Pointset_Powerset_Octagonal_Shape_double_from_Octagonal_Shape_double_with_complexity](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)
- [int ppl_new_Pointset_Powerset_Octagonal_Shape_double_from_Constraint_System](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_t *pph, ppl_const_Constraint_System_t cs)
- [int ppl_new_Pointset_Powerset_Octagonal_Shape_double_from_Congruence_System](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_t *pph, ppl_const_Congruence_System_t cs)
- [int ppl_Pointset_Powerset_Octagonal_Shape_double_space_dimension](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_dimension_type *m)
- [int ppl_Pointset_Powerset_Octagonal_Shape_double_affine_dimension](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_dimension_type *m)
- [int ppl_Pointset_Powerset_Octagonal_Shape_double_relation_with_Constraint](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_const_Constraint_t c)
- [int ppl_Pointset_Powerset_Octagonal_Shape_double_relation_with_Generator](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_const_Generator_t c)
- [int ppl_Pointset_Powerset_Octagonal_Shape_double_relation_with_Congruence](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_const_Congruence_t c)
- [int ppl_Pointset_Powerset_Octagonal_Shape_double_is_empty](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph)
- [int ppl_Pointset_Powerset_Octagonal_Shape_double_is_universe](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph)
- [int ppl_Pointset_Powerset_Octagonal_Shape_double_is_bounded](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph)
- [int ppl_Pointset_Powerset_Octagonal_Shape_double_contains_integer_point](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph)
- [int ppl_Pointset_Powerset_Octagonal_Shape_double_is_topologically_closed](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph)
- [int ppl_Pointset_Powerset_Octagonal_Shape_double_is_discrete](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph)
- [int ppl_Pointset_Powerset_Octagonal_Shape_double_topological_closure_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_t ph)
- [int ppl_Pointset_Powerset_Octagonal_Shape_double_pairwise_reduce](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_t ph)
- [int ppl_Pointset_Powerset_Octagonal_Shape_double_omega_reduce](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_t ph)
- [int ppl_Pointset_Powerset_Octagonal_Shape_double_bounds_from_above](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_const_Linear_Expression_t le)
- [int ppl_Pointset_Powerset_Octagonal_Shape_double_bounds_from_below](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_const_Linear_Expression_t le)
- [int ppl_Pointset_Powerset_Octagonal_Shape_double_maximize](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- [int ppl_Pointset_Powerset_Octagonal_Shape_double_minimize](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- [int ppl_Pointset_Powerset_Octagonal_Shape_double_maximize_with_point](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)

- int [ppl_Pointset_Powerset_Octagonal_Shape_double_minimize_with_point](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_contains_Pointset_Powerset_Octagonal_Shape_double](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_double_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_strictly_contains_Pointset_Powerset_Octagonal_Shape_double](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_double_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_is_disjoint_from_Pointset_Powerset_Octagonal_Shape_double](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_double_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_geometrically_covers_Pointset_Powerset_Octagonal_Shape_double](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_double_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_geometrically_equals_Pointset_Powerset_Octagonal_Shape_double](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_double_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_equals_Pointset_Powerset_Octagonal_Shape_double](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_double_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_OK](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_add_constraint](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_add_congruence](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_add_constraints](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_add_congruences](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_refine_with_constraint](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_refine_with_congruence](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_refine_with_constraints](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_refine_with_congruences](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_intersection_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_double_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_upper_bound_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_double_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_difference_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_double_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_concatenate_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_double_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_time_elapse_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_double_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_upper_bound_assign_if_exact](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_double_t y)

- `int ppl_Pointset_Powerset_Octagonal_Shape_double_simplify_using_context_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_double_t` x, `ppl_const_Pointset_Powerset_Octagonal_Shape_double_t` y)
- `int ppl_Pointset_Powerset_Octagonal_Shape_double_constrains` (`ppl_Pointset_Powerset_Octagonal_Shape_double_t` ph, `ppl_dimension_type` var)
- `int ppl_Pointset_Powerset_Octagonal_Shape_double_unconstrain_space_dimension` (`ppl_Pointset_Powerset_Octagonal_Shape_double_t` ph, `ppl_dimension_type` var)
- `int ppl_Pointset_Powerset_Octagonal_Shape_double_unconstrain_space_dimensions` (`ppl_Pointset_Powerset_Octagonal_Shape_double_t` ph, `ppl_dimension_type` ds[], `size_t` n)
- `int ppl_Pointset_Powerset_Octagonal_Shape_double_affine_image` (`ppl_Pointset_Powerset_Octagonal_Shape_double_t` ph, `ppl_dimension_type` var, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- `int ppl_Pointset_Powerset_Octagonal_Shape_double_affine_preimage` (`ppl_Pointset_Powerset_Octagonal_Shape_double_t` ph, `ppl_dimension_type` var, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- `int ppl_Pointset_Powerset_Octagonal_Shape_double_bounded_affine_image` (`ppl_Pointset_Powerset_Octagonal_Shape_double_t` ph, `ppl_dimension_type` var, `ppl_const_Linear_Expression_t` lb, `ppl_const_Linear_Expression_t` ub, `ppl_const_Coefficient_t` d)
- `int ppl_Pointset_Powerset_Octagonal_Shape_double_bounded_affine_preimage` (`ppl_Pointset_Powerset_Octagonal_Shape_double_t` ph, `ppl_dimension_type` var, `ppl_const_Linear_Expression_t` lb, `ppl_const_Linear_Expression_t` ub, `ppl_const_Coefficient_t` d)
- `int ppl_Pointset_Powerset_Octagonal_Shape_double_generalized_affine_image` (`ppl_Pointset_Powerset_Octagonal_Shape_double_t` ph, `ppl_dimension_type` var, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- `int ppl_Pointset_Powerset_Octagonal_Shape_double_generalized_affine_preimage` (`ppl_Pointset_Powerset_Octagonal_Shape_double_t` ph, `ppl_dimension_type` var, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- `int ppl_Pointset_Powerset_Octagonal_Shape_double_generalized_affine_image_lhs_rhs` (`ppl_Pointset_Powerset_Octagonal_Shape_double_t` ph, `ppl_const_Linear_Expression_t` lhs, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` rhs)
- `int ppl_Pointset_Powerset_Octagonal_Shape_double_generalized_affine_preimage_lhs_rhs` (`ppl_Pointset_Powerset_Octagonal_Shape_double_t` ph, `ppl_const_Linear_Expression_t` lhs, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` rhs)
- `int ppl_Pointset_Powerset_Octagonal_Shape_double_add_space_dimensions_and_embed` (`ppl_Pointset_Powerset_Octagonal_Shape_double_t` ph, `ppl_dimension_type` d)
- `int ppl_Pointset_Powerset_Octagonal_Shape_double_add_space_dimensions_and_project` (`ppl_Pointset_Powerset_Octagonal_Shape_double_t` ph, `ppl_dimension_type` d)
- `int ppl_Pointset_Powerset_Octagonal_Shape_double_remove_space_dimensions` (`ppl_Pointset_Powerset_Octagonal_Shape_double_t` ph, `ppl_dimension_type` ds[], `size_t` n)
- `int ppl_Pointset_Powerset_Octagonal_Shape_double_remove_higher_space_dimensions` (`ppl_Pointset_Powerset_Octagonal_Shape_double_t` ph, `ppl_dimension_type` d)
- `int ppl_Pointset_Powerset_Octagonal_Shape_double_expand_space_dimension` (`ppl_Pointset_Powerset_Octagonal_Shape_double_t` ph, `ppl_dimension_type` d, `ppl_dimension_type` m)
- `int ppl_Pointset_Powerset_Octagonal_Shape_double_fold_space_dimensions` (`ppl_Pointset_Powerset_Octagonal_Shape_double_t` ph, `ppl_dimension_type` ds[], `size_t` n, `ppl_dimension_type` d)
- `int ppl_Pointset_Powerset_Octagonal_Shape_double_map_space_dimensions` (`ppl_Pointset_Powerset_Octagonal_Shape_double_t` ph, `ppl_dimension_type` maps[], `size_t` n)
- `int ppl_Pointset_Powerset_Octagonal_Shape_double_drop_some_non_integer_points` (`ppl_Pointset_Powerset_Octagonal_Shape_double_t` ph, `int` complexity)
- `int ppl_Pointset_Powerset_Octagonal_Shape_double_drop_some_non_integer_points_2` (`ppl_Pointset_Powerset_Octagonal_Shape_double_t` ph, `ppl_dimension_type` ds[], `size_t` n, `int` complexity)

- int [ppl_Pointset_Powerset_Octagonal_Shape_double_external_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_total_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_size](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_add_disjunct](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_t ps, ppl_const_Octagonal_Shape_double_t d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_drop_disjunct](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_t ps, ppl_const_Pointset_Powerset_Octagonal_Shape_double_iterator_t cit, ppl_Pointset_Powerset_Octagonal_Shape_double_iterator_t it)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_drop_disjuncts](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_t ps, ppl_const_Pointset_Powerset_Octagonal_Shape_double_iterator_t first, ppl_const_Pointset_Powerset_Octagonal_Shape_double_iterator_t last)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_BHZ03_H79_BHMZ05_widening_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_double_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_double_BGP99_BHMZ05_extrapolation_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_double_t y, int disjuncts)

10.113.1 Detailed Description

Types and functions for [ppl_Pointset_Powerset_Octagonal_Shape_double_tag](#).

10.113.2 Friends And Related Function Documentation

- 10.113.2.1** int [ppl_delete_Pointset_Powerset_Octagonal_Shape_double](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t *ph*) [[related](#)]
- 10.113.2.2** int [ppl_new_Pointset_Powerset_Octagonal_Shape_double_from_Congruence_System](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_t * *pph*, ppl_const_Congruence_System_t *cs*) [[related](#)]
- 10.113.2.3** int [ppl_new_Pointset_Powerset_Octagonal_Shape_double_from_Constraint_System](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_t * *pph*, ppl_const_Constraint_System_t *cs*) [[related](#)]
- 10.113.2.4** int [ppl_new_Pointset_Powerset_Octagonal_Shape_double_from_Octagonal_Shape_double](#) (ppl_Pointset_Powerset_Octagonal_Shape_double_t * *pph*, ppl_const_Octagonal_Shape_double_t *ph*) [[related](#)]

- 10.113.2.5 `int ppl_new_Pointset_Powerset_Octagonal_Shape_double_from_Octagonal_Shape_double_with_complexity (ppl_Pointset_Powerset_Octagonal_Shape_double_t * pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)` [`related`]
- 10.113.2.6 `int ppl_new_Pointset_Powerset_Octagonal_Shape_double_from_Pointset_Powerset_Octagonal_Shape_double (ppl_Pointset_Powerset_Octagonal_Shape_double_t * pph, ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph)` [`related`]
- 10.113.2.7 `int ppl_new_Pointset_Powerset_Octagonal_Shape_double_from_Pointset_Powerset_Octagonal_Shape_double_with_complexity (ppl_Pointset_Powerset_Octagonal_Shape_double_t * pph, ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph, int complexity)` [`related`]
- 10.113.2.8 `int ppl_new_Pointset_Powerset_Octagonal_Shape_double_from_space_dimension (ppl_Pointset_Powerset_Octagonal_Shape_double_t * pph, ppl_dimension_type d, int empty)` [`related`]
- 10.113.2.9 `int ppl_Pointset_Powerset_Octagonal_Shape_double_add_congruence (ppl_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_const_Congruence_t c)` [`related`]
- 10.113.2.10 `int ppl_Pointset_Powerset_Octagonal_Shape_double_add_congruences (ppl_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_const_Congruence_System_t cs)` [`related`]
- 10.113.2.11 `int ppl_Pointset_Powerset_Octagonal_Shape_double_add_constraint (ppl_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_const_Constraint_t c)` [`related`]
- 10.113.2.12 `int ppl_Pointset_Powerset_Octagonal_Shape_double_add_constraints (ppl_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_const_Constraint_System_t cs)` [`related`]

- 10.113.2.13 `int ppl_Pointset_Powerset_Octagonal_Shape_double_add_disjunct (ppl_Pointset_Powerset_Octagonal_Shape_double_t ps, ppl_const_Octagonal_Shape_double_t d)` `[related]`
- 10.113.2.14 `int ppl_Pointset_Powerset_Octagonal_Shape_double_add_space_dimensions_and_embed (ppl_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_dimension_type d)` `[related]`
- 10.113.2.15 `int ppl_Pointset_Powerset_Octagonal_Shape_double_add_space_dimensions_and_project (ppl_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_dimension_type d)` `[related]`
- 10.113.2.16 `int ppl_Pointset_Powerset_Octagonal_Shape_double_affine_dimension (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_dimension_type var, m)` `[related]`
- 10.113.2.17 `int ppl_Pointset_Powerset_Octagonal_Shape_double_affine_image (ppl_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` `[related]`
- 10.113.2.18 `int ppl_Pointset_Powerset_Octagonal_Shape_double_affine_preimage (ppl_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` `[related]`
- 10.113.2.19 `int ppl_Pointset_Powerset_Octagonal_Shape_double_BGP99_BHMZ05_extrapolation_assign (ppl_Pointset_Powerset_Octagonal_Shape_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_double_t y, int disjuncts)` `[related]`
- 10.113.2.20 `int ppl_Pointset_Powerset_Octagonal_Shape_double_BHZ03_H79_BHMZ05_widening_assign (ppl_Pointset_Powerset_Octagonal_Shape_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_double_t y)` `[related]`

- 10.113.2.21 `int ppl_Pointset_Powerset_Octagonal_Shape_double_bounded_affine_image`
 (`ppl_Pointset_Powerset_Octagonal_Shape_double_t ph`, `ppl_dimension_type var`,
`ppl_const_Linear_Expression_t lb`, `ppl_const_Linear_Expression_t ub`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.113.2.22 `int ppl_Pointset_Powerset_Octagonal_Shape_double_bounded_affine_preimage`
 (`ppl_Pointset_Powerset_Octagonal_Shape_double_t ph`, `ppl_dimension_type var`,
`ppl_const_Linear_Expression_t lb`, `ppl_const_Linear_Expression_t ub`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.113.2.23 `int ppl_Pointset_Powerset_Octagonal_Shape_double_bounds_from_above`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph`,
`ppl_const_Linear_Expression_t le`) [`related`]
- 10.113.2.24 `int ppl_Pointset_Powerset_Octagonal_Shape_double_bounds_from_below`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph`,
`ppl_const_Linear_Expression_t le`) [`related`]
- 10.113.2.25 `int ppl_Pointset_Powerset_Octagonal_Shape_double_concatenate_-`
`assign` (`ppl_Pointset_Powerset_Octagonal_Shape_double_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_double_t y`) [`related`]
- 10.113.2.26 `int ppl_Pointset_Powerset_Octagonal_Shape_double_constrains`
 (`ppl_Pointset_Powerset_Octagonal_Shape_double_t ph`, `ppl_dimension_type var`)
 [`related`]
- 10.113.2.27 `int ppl_Pointset_Powerset_Octagonal_Shape_double_contains_integer_point`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph`) [`related`]
- 10.113.2.28 `int ppl_Pointset_Powerset_Octagonal_Shape_double_contains_Pointset_Powerset_-`
`Octagonal_Shape_double` (`ppl_const_Pointset_Powerset_Octagonal_Shape_double_t`
`x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_double_t y`) [`related`]

- 10.113.2.29 `int ppl_Pointset_Powerset_Octagonal_Shape_double_difference_`
`assign (ppl_Pointset_Powerset_Octagonal_Shape_double_t x,`
`ppl_const_Pointset_Powerset_Octagonal_Shape_double_t y) [related]`
- 10.113.2.30 `int ppl_Pointset_Powerset_Octagonal_Shape_double_drop_disjunct`
`(ppl_Pointset_Powerset_Octagonal_Shape_double_t ps, ppl_`
`const_Pointset_Powerset_Octagonal_Shape_double_iterator_t cit,`
`ppl_Pointset_Powerset_Octagonal_Shape_double_iterator_t it) [related]`
- 10.113.2.31 `int ppl_Pointset_Powerset_Octagonal_Shape_double_drop_disjuncts`
`(ppl_Pointset_Powerset_Octagonal_Shape_double_t ps, ppl_`
`const_Pointset_Powerset_Octagonal_Shape_double_iterator_t first,`
`ppl_const_Pointset_Powerset_Octagonal_Shape_double_iterator_t last) [related]`
- 10.113.2.32 `int ppl_Pointset_Powerset_Octagonal_Shape_double_drop_some_non_integer_points`
`(ppl_Pointset_Powerset_Octagonal_Shape_double_t ph, int complexity) [related]`
- 10.113.2.33 `int ppl_Pointset_Powerset_Octagonal_Shape_double_drop_some_non_integer_`
`points_2 (ppl_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_dimension_type`
`ds[], size_t n, int complexity) [related]`
- 10.113.2.34 `int ppl_Pointset_Powerset_Octagonal_Shape_double_equals_Pointset_Powerset_`
`Octagonal_Shape_double (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t`
`x, ppl_const_Pointset_Powerset_Octagonal_Shape_double_t y) [related]`
- 10.113.2.35 `int ppl_Pointset_Powerset_Octagonal_Shape_double_expand_space_dimension`
`(ppl_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_dimension_type d,`
`ppl_dimension_type m) [related]`
- 10.113.2.36 `int ppl_Pointset_Powerset_Octagonal_Shape_double_external_memory_in_bytes`
`(ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ps, size_t * sz)`
`[related]`

- 10.113.2.37 `int ppl_Pointset_Powerset_Octagonal_Shape_double_fold_space_dimensions`
(`ppl_Pointset_Powerset_Octagonal_Shape_double_t ph`, `ppl_dimension_type ds[]`,
`size_t n`, `ppl_dimension_type d`) [`related`]
- 10.113.2.38 `int ppl_Pointset_Powerset_Octagonal_Shape_double_generalized_affine_image`
(`ppl_Pointset_Powerset_Octagonal_Shape_double_t ph`, `ppl_dimension_type var`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.113.2.39 `int ppl_Pointset_Powerset_Octagonal_Shape_double_generalized_affine_-`
`image_lhs_rhs` (`ppl_Pointset_Powerset_Octagonal_Shape_double_t ph`,
`ppl_const_Linear_Expression_t lhs`, `enum ppl_enum_Constraint_Type relsym`,
`ppl_const_Linear_Expression_t rhs`) [`related`]
- 10.113.2.40 `int ppl_Pointset_Powerset_Octagonal_Shape_double_generalized_affine_preimage`
(`ppl_Pointset_Powerset_Octagonal_Shape_double_t ph`, `ppl_dimension_type var`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.113.2.41 `int ppl_Pointset_Powerset_Octagonal_Shape_double_generalized_affine_-`
`preimage_lhs_rhs` (`ppl_Pointset_Powerset_Octagonal_Shape_double_t ph`,
`ppl_const_Linear_Expression_t lhs`, `enum ppl_enum_Constraint_Type relsym`,
`ppl_const_Linear_Expression_t rhs`) [`related`]
- 10.113.2.42 `int ppl_Pointset_Powerset_Octagonal_Shape_double_-`
`geometrically_covers_Pointset_Powerset_Octagonal_Shape_double`
(`ppl_const_Pointset_Powerset_Octagonal_Shape_double_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_double_t y`) [`related`]
- 10.113.2.43 `int ppl_Pointset_Powerset_Octagonal_Shape_double_-`
`geometrically_equals_Pointset_Powerset_Octagonal_Shape_double`
(`ppl_const_Pointset_Powerset_Octagonal_Shape_double_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_double_t y`) [`related`]

- 10.113.2.44 **int** ppl_Pointset_Powerset_Octagonal_Shape_double_intersection_-
assign (ppl_Pointset_Powerset_Octagonal_Shape_double_t *x*,
ppl_const_Pointset_Powerset_Octagonal_Shape_double_t *y*) [**related**]
- 10.113.2.45 **int** ppl_Pointset_Powerset_Octagonal_Shape_double_is_bounded
(ppl_const_Pointset_Powerset_Octagonal_Shape_double_t *ph*) [**related**]
- 10.113.2.46 **int** ppl_Pointset_Powerset_Octagonal_Shape_double_is_discrete
(ppl_const_Pointset_Powerset_Octagonal_Shape_double_t *ph*) [**related**]
- 10.113.2.47 **int** ppl_Pointset_Powerset_Octagonal_Shape_double_is_-
disjoint_from_Pointset_Powerset_Octagonal_Shape_double
(ppl_const_Pointset_Powerset_Octagonal_Shape_double_t *x*,
ppl_const_Pointset_Powerset_Octagonal_Shape_double_t *y*) [**related**]
- 10.113.2.48 **int** ppl_Pointset_Powerset_Octagonal_Shape_double_is_empty
(ppl_const_Pointset_Powerset_Octagonal_Shape_double_t *ph*) [**related**]
- 10.113.2.49 **int** ppl_Pointset_Powerset_Octagonal_Shape_double_is_topologically_closed
(ppl_const_Pointset_Powerset_Octagonal_Shape_double_t *ph*) [**related**]
- 10.113.2.50 **int** ppl_Pointset_Powerset_Octagonal_Shape_double_is_universe
(ppl_const_Pointset_Powerset_Octagonal_Shape_double_t *ph*) [**related**]
- 10.113.2.51 **int** ppl_Pointset_Powerset_Octagonal_Shape_double_map_space_dimensions
(ppl_Pointset_Powerset_Octagonal_Shape_double_t *ph*, ppl_dimension_type *maps*[],
size_t *n*) [**related**]

- 10.113.2.52** `int ppl_Pointset_Powerset_Octagonal_Shape_double_maximize (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)` [**related**]
- 10.113.2.53** `int ppl_Pointset_Powerset_Octagonal_Shape_double_maximize_with_point (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` [**related**]
- 10.113.2.54** `int ppl_Pointset_Powerset_Octagonal_Shape_double_minimize (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)` [**related**]
- 10.113.2.55** `int ppl_Pointset_Powerset_Octagonal_Shape_double_minimize_with_point (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` [**related**]
- 10.113.2.56** `int ppl_Pointset_Powerset_Octagonal_Shape_double_OK (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph)` [**related**]
- 10.113.2.57** `int ppl_Pointset_Powerset_Octagonal_Shape_double_omega_reduce (ppl_Pointset_Powerset_Octagonal_Shape_double_t ph)` [**related**]
- 10.113.2.58** `int ppl_Pointset_Powerset_Octagonal_Shape_double_pairwise_reduce (ppl_Pointset_Powerset_Octagonal_Shape_double_t ph)` [**related**]
- 10.113.2.59** `int ppl_Pointset_Powerset_Octagonal_Shape_double_refine_with_congruence (ppl_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_const_Congruence_t c)` [**related**]

- 10.113.2.60 `int ppl_Pointset_Powerset_Octagonal_Shape_double_refine_with_congruences (ppl_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_const_Congruence_System_t cs)` [**related**]
- 10.113.2.61 `int ppl_Pointset_Powerset_Octagonal_Shape_double_refine_with_constraint (ppl_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_const_Constraint_t c)` [**related**]
- 10.113.2.62 `int ppl_Pointset_Powerset_Octagonal_Shape_double_refine_with_constraints (ppl_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_const_Constraint_System_t cs)` [**related**]
- 10.113.2.63 `int ppl_Pointset_Powerset_Octagonal_Shape_double_relation_with_Congruence (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_const_Congruence_t c)` [**related**]
- 10.113.2.64 `int ppl_Pointset_Powerset_Octagonal_Shape_double_relation_with_Constraint (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_const_Constraint_t c)` [**related**]
- 10.113.2.65 `int ppl_Pointset_Powerset_Octagonal_Shape_double_relation_with_Generator (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_const_Generator_t c)` [**related**]
- 10.113.2.66 `int ppl_Pointset_Powerset_Octagonal_Shape_double_remove_higher_space_dimensions (ppl_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_dimension_type d)` [**related**]
- 10.113.2.67 `int ppl_Pointset_Powerset_Octagonal_Shape_double_remove_space_dimensions (ppl_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_dimension_type ds[], size_t n)` [**related**]

- 10.113.2.68 `int ppl_Pointset_Powerset_Octagonal_Shape_double_simplify_using_-context_assign (ppl_Pointset_Powerset_Octagonal_Shape_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_double_t y)` [**related**]
- 10.113.2.69 `int ppl_Pointset_Powerset_Octagonal_Shape_double_size (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ps, size_t * sz)` [**related**]
- 10.113.2.70 `int ppl_Pointset_Powerset_Octagonal_Shape_double_space_dimension (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_dimension_type * m)` [**related**]
- 10.113.2.71 `int ppl_Pointset_Powerset_Octagonal_Shape_double_strictly_contains_Pointset_Powerset_Octagonal_Shape_double (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_double_t y)` [**related**]
- 10.113.2.72 `int ppl_Pointset_Powerset_Octagonal_Shape_double_time_elapse_assign (ppl_Pointset_Powerset_Octagonal_Shape_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_double_t y)` [**related**]
- 10.113.2.73 `int ppl_Pointset_Powerset_Octagonal_Shape_double_topological_closure_assign (ppl_Pointset_Powerset_Octagonal_Shape_double_t ph)` [**related**]
- 10.113.2.74 `int ppl_Pointset_Powerset_Octagonal_Shape_double_total_memory_in_bytes (ppl_const_Pointset_Powerset_Octagonal_Shape_double_t ps, size_t * sz)` [**related**]
- 10.113.2.75 `int ppl_Pointset_Powerset_Octagonal_Shape_double_unconstrain_space_dimension (ppl_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_dimension_type var)` [**related**]

10.114 `ppl_Pointset_Powerset_Octagonal_Shape_float_const_iterator_tag` Interface Reference 271

10.113.2.76 `int ppl_Pointset_Powerset_Octagonal_Shape_double_unconstrain_space_dimensions (ppl_Pointset_Powerset_Octagonal_Shape_double_t ph, ppl_dimension_type ds[], size_t n)` [**related**]

10.113.2.77 `int ppl_Pointset_Powerset_Octagonal_Shape_double_upper_bound_assign (ppl_Pointset_Powerset_Octagonal_Shape_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_double_t y)` [**related**]

10.113.2.78 `int ppl_Pointset_Powerset_Octagonal_Shape_double_upper_bound_assign_if_exact (ppl_Pointset_Powerset_Octagonal_Shape_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_double_t y)` [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.114 `ppl_Pointset_Powerset_Octagonal_Shape_float_const_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Octagonal_Shape_float_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_Octagonal_Shape_float_const_iterator (ppl_Pointset_Powerset_Octagonal_Shape_float_const_iterator_t *pit)`
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_float_const_iterator_from_const_iterator (ppl_Pointset_Powerset_Octagonal_Shape_float_const_iterator_t *px, ppl_const_Pointset_Powerset_Octagonal_Shape_float_const_iterator_t y)`
- `int ppl_Pointset_Powerset_Octagonal_Shape_float_const_iterator_begin (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ps, ppl_Pointset_Powerset_Octagonal_Shape_float_const_iterator_t psit)`
- `int ppl_Pointset_Powerset_Octagonal_Shape_float_const_iterator_end (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ps, ppl_Pointset_Powerset_Octagonal_Shape_float_const_iterator_t psit)`
- `int ppl_Pointset_Powerset_Octagonal_Shape_float_const_iterator_equal_test (ppl_const_Pointset_Powerset_Octagonal_Shape_float_const_iterator_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_float_const_iterator_t y)`
- `int ppl_Pointset_Powerset_Octagonal_Shape_float_const_iterator_increment (ppl_Pointset_Powerset_Octagonal_Shape_float_const_iterator_t psit)`

- int [ppl_Pointset_Powerset_Octagonal_Shape_float_const_iterator_decrement](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_const_iterator_t psit)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_const_iterator_dereference](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_float_const_iterator_t ps, ppl_const_Octagonal_Shape_float_t *d)
- int [ppl_delete_Pointset_Powerset_Octagonal_Shape_float_const_iterator](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_float_const_iterator_t psit)

10.114.1 Detailed Description

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Octagonal_Shape_float_tag](#).

10.114.2 Friends And Related Function Documentation

- 10.114.2.1** int [ppl_delete_Pointset_Powerset_Octagonal_Shape_float_const_iterator](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_float_const_iterator_t *psit*)
[related]
- 10.114.2.2** int [ppl_new_Pointset_Powerset_Octagonal_Shape_float_const_iterator](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_const_iterator_t * *pit*) [related]
- 10.114.2.3** int [ppl_new_Pointset_Powerset_Octagonal_Shape_float_const_iterator_from_const_iterator](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_const_iterator_t * *px*, ppl_const_Pointset_Powerset_Octagonal_Shape_float_const_iterator_t *y*)
[related]
- 10.114.2.4** int [ppl_Pointset_Powerset_Octagonal_Shape_float_const_iterator_begin](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t *ps*, ppl_Pointset_Powerset_Octagonal_Shape_float_const_iterator_t *psit*) [related]
- 10.114.2.5** int [ppl_Pointset_Powerset_Octagonal_Shape_float_const_iterator_decrement](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_const_iterator_t *psit*) [related]
- 10.114.2.6** int [ppl_Pointset_Powerset_Octagonal_Shape_float_const_iterator_dereference](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_float_const_iterator_t *ps*, ppl_const_Octagonal_Shape_float_t * *d*) [related]

10.114.2.7 `int ppl_Pointset_Powerset_Octagonal_Shape_float_const_iterator_end`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ps`,
`ppl_Pointset_Powerset_Octagonal_Shape_float_const_iterator_t psit`) [**related**]

10.114.2.8 `int ppl_Pointset_Powerset_Octagonal_Shape_float_const_iterator_equal_test`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_float_const_iterator_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_float_const_iterator_t y`)
 [**related**]

10.114.2.9 `int ppl_Pointset_Powerset_Octagonal_Shape_float_const_iterator_increment`
 (`ppl_Pointset_Powerset_Octagonal_Shape_float_const_iterator_t psit`) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.115 `ppl_Pointset_Powerset_Octagonal_Shape_float_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a `ppl_Pointset_Powerset_Octagonal_Shape_float_tag`.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_Octagonal_Shape_float_iterator` (`ppl_Pointset_Powerset_Octagonal_Shape_float_iterator_t *pit`)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_float_iterator_from_iterator` (`ppl_Pointset_Powerset_Octagonal_Shape_float_iterator_t *px`, `ppl_const_Pointset_Powerset_Octagonal_Shape_float_iterator_t y`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_float_iterator_begin` (`ppl_Pointset_Powerset_Octagonal_Shape_float_t ps`, `ppl_Pointset_Powerset_Octagonal_Shape_float_iterator_t psit`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_float_iterator_end` (`ppl_Pointset_Powerset_Octagonal_Shape_float_t ps`, `ppl_Pointset_Powerset_Octagonal_Shape_float_iterator_t psit`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_float_iterator_equal_test` (`ppl_const_Pointset_Powerset_Octagonal_Shape_float_iterator_t x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_float_iterator_t y`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_float_iterator_increment` (`ppl_Pointset_Powerset_Octagonal_Shape_float_iterator_t psit`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_float_iterator_decrement` (`ppl_Pointset_Powerset_Octagonal_Shape_float_iterator_t psit`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_float_iterator_dereference` (`ppl_const_Pointset_Powerset_Octagonal_Shape_float_iterator_t ps`, `ppl_const_Octagonal_Shape_float_t *d`)

- `int ppl_delete_Pointset_Powerset_Octagonal_Shape_float_iterator` (`ppl_const_Pointset_Powerset_Octagonal_Shape_float_iterator_t psit`)

10.115.1 Detailed Description

Types and functions for iterating on the disjuncts of a `ppl_Pointset_Powerset_Octagonal_Shape_float_tag`.

10.115.2 Friends And Related Function Documentation

10.115.2.1 `int ppl_delete_Pointset_Powerset_Octagonal_Shape_float_iterator`
(`ppl_const_Pointset_Powerset_Octagonal_Shape_float_iterator_t psit`) [**related**]

10.115.2.2 `int ppl_new_Pointset_Powerset_Octagonal_Shape_float_iterator`
(`ppl_Pointset_Powerset_Octagonal_Shape_float_iterator_t * pit`) [**related**]

10.115.2.3 `int ppl_new_Pointset_Powerset_Octagonal_Shape_float_iterator_from_iterator`
(`ppl_Pointset_Powerset_Octagonal_Shape_float_iterator_t * px`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_float_iterator_t y`) [**related**]

10.115.2.4 `int ppl_Pointset_Powerset_Octagonal_Shape_float_iterator_begin`
(`ppl_Pointset_Powerset_Octagonal_Shape_float_t ps`, `ppl_Pointset_Powerset_Octagonal_Shape_float_iterator_t psit`) [**related**]

10.115.2.5 `int ppl_Pointset_Powerset_Octagonal_Shape_float_iterator_decrement`
(`ppl_Pointset_Powerset_Octagonal_Shape_float_iterator_t psit`) [**related**]

10.115.2.6 `int ppl_Pointset_Powerset_Octagonal_Shape_float_iterator_dereference`
(`ppl_const_Pointset_Powerset_Octagonal_Shape_float_iterator_t ps`,
`ppl_const_Octagonal_Shape_float_t * d`) [**related**]

10.115.2.7 `int ppl_Pointset_Powerset_Octagonal_Shape_float_iterator_end`
(`ppl_Pointset_Powerset_Octagonal_Shape_float_t ps`, `ppl_Pointset_Powerset_Octagonal_Shape_float_iterator_t psit`) [**related**]

10.115.2.8 `int ppl_Pointset_Powerset_Octagonal_Shape_float_iterator_equal_test`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_float_iterator_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_float_iterator_t y`) [**related**]

10.115.2.9 `int ppl_Pointset_Powerset_Octagonal_Shape_float_iterator_increment`
 (`ppl_Pointset_Powerset_Octagonal_Shape_float_iterator_t psit`) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.116 `ppl_Pointset_Powerset_Octagonal_Shape_float_tag` Interface Reference

Types and functions for [ppl_Pointset_Powerset_Octagonal_Shape_float_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Pointset_Powerset_Octagonal_Shape_float` (`ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph`)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_float_from_space_dimension` (`ppl_Pointset_Powerset_Octagonal_Shape_float_t *pph`, `ppl_dimension_type d`, `int empty`)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_float_from_Pointset_Powerset_Octagonal_Shape_float` (`ppl_Pointset_Powerset_Octagonal_Shape_float_t *pph`, `ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph`)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_float_from_Octagonal_Shape_float` (`ppl_Pointset_Powerset_Octagonal_Shape_float_t *pph`, `ppl_const_Octagonal_Shape_float_t ph`)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_float_from_Pointset_Powerset_Octagonal_Shape_float_with_complexity` (`ppl_Pointset_Powerset_Octagonal_Shape_float_t *pph`, `ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph`, `int complexity`)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_float_from_Octagonal_Shape_float_with_complexity` (`ppl_Pointset_Powerset_Octagonal_Shape_float_t *pph`, `ppl_const_Octagonal_Shape_float_t ph`, `int complexity`)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_float_from_Constraint_System` (`ppl_Pointset_Powerset_Octagonal_Shape_float_t *pph`, `ppl_const_Constraint_System_t cs`)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_float_from_Congruence_System` (`ppl_Pointset_Powerset_Octagonal_Shape_float_t *pph`, `ppl_const_Congruence_System_t cs`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_float_space_dimension` (`ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph`, `ppl_dimension_type *m`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_float_affine_dimension` (`ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph`, `ppl_dimension_type *m`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_float_relation_with_Constraint` (`ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph`, `ppl_const_Constraint_t c`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_float_relation_with_Generator` (`ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph`, `ppl_const_Generator_t c`)

- int [ppl_Pointset_Powerset_Octagonal_Shape_float_relation_with_Congruence](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_is_empty](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_is_universe](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_is_bounded](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_contains_integer_point](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_is_topologically_closed](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_is_discrete](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_topological_closure_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_pairwise_reduce](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_omega_reduce](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_bounds_from_above](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_bounds_from_below](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_maximize](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_minimize](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_maximize_with_point](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_minimize_with_point](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_contains_Pointset_Powerset_Octagonal_Shape_float](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_float_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_strictly_contains_Pointset_Powerset_Octagonal_Shape_float](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_float_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_is_disjoint_from_Pointset_Powerset_Octagonal_Shape_float](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_float_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_geometrically_covers_Pointset_Powerset_Octagonal_Shape_float](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_float_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_geometrically_equals_Pointset_Powerset_Octagonal_Shape_float](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_float_t y)

- int [ppl_Pointset_Powerset_Octagonal_Shape_float_equals_Pointset_Powerset_Octagonal_Shape_float](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_float_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_OK](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_add_constraint](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_add_congruence](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_add_constraints](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_add_congruences](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_refine_with_constraint](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_refine_with_congruence](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_refine_with_constraints](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_refine_with_congruences](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_intersection_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_float_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_upper_bound_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_float_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_difference_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_float_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_concatenate_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_float_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_time_elapse_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_float_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_upper_bound_assign_if_exact](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_float_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_simplify_using_context_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_float_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_constrains](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_unconstrain_space_dimension](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_unconstrain_space_dimensions](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_affine_image](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_affine_preimage](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_bounded_affine_image](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_bounded_affine_preimage](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)

- int [ppl_Pointset_Powerset_Octagonal_Shape_float_generalized_affine_image](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_generalized_affine_preimage](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_generalized_affine_image_lhs_rhs](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_generalized_affine_preimage_lhs_rhs](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_add_space_dimensions_and_embed](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_add_space_dimensions_and_project](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_remove_space_dimensions](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_remove_higher_space_dimensions](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_expand_space_dimension](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_fold_space_dimensions](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_map_space_dimensions](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_drop_some_non_integer_points](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, int complexity)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_drop_some_non_integer_points_2](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_external_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_total_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_size](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_add_disjunct](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ps, ppl_const_Octagonal_Shape_float_t d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_drop_disjunct](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ps, ppl_const_Pointset_Powerset_Octagonal_Shape_float_iterator_t cit, ppl_Pointset_Powerset_Octagonal_Shape_float_iterator_t it)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_drop_disjuncts](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t ps, ppl_const_Pointset_Powerset_Octagonal_Shape_float_iterator_t first, ppl_const_Pointset_Powerset_Octagonal_Shape_float_iterator_t last)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_BHZ03_H79_BHMZ05_widening_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_float_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_float_BGP99_BHMZ05_extrapolation_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_float_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_float_t y, int disjuncts)

10.116.1 Detailed Description

Types and functions for [ppl_Pointset_Powerset_Octagonal_Shape_float_tag](#).

10.116.2 Friends And Related Function Documentation

- 10.116.2.1** `int ppl_delete_Pointset_Powerset_Octagonal_Shape_float
(ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph)` [**related**]
- 10.116.2.2** `int ppl_new_Pointset_Powerset_Octagonal_Shape_float_from_Congruence_-
System (ppl_Pointset_Powerset_Octagonal_Shape_float_t * pph,
ppl_const_Congruence_System_t cs)` [**related**]
- 10.116.2.3** `int ppl_new_Pointset_Powerset_Octagonal_Shape_float_from_Constraint_-
System (ppl_Pointset_Powerset_Octagonal_Shape_float_t * pph,
ppl_const_Constraint_System_t cs)` [**related**]
- 10.116.2.4** `int ppl_new_Pointset_Powerset_Octagonal_Shape_float_from_Octagonal_-
Shape_float (ppl_Pointset_Powerset_Octagonal_Shape_float_t * pph,
ppl_const_Octagonal_Shape_float_t ph)` [**related**]
- 10.116.2.5** `int ppl_new_Pointset_Powerset_Octagonal_Shape_float_from_Octagonal_Shape_-
float_with_complexity (ppl_Pointset_Powerset_Octagonal_Shape_float_t * pph,
ppl_const_Octagonal_Shape_float_t ph, int complexity)` [**related**]
- 10.116.2.6** `int ppl_new_Pointset_Powerset_Octagonal_Shape_float_from_Pointset_Powerset_-
Octagonal_Shape_float (ppl_Pointset_Powerset_Octagonal_Shape_float_t * pph,
ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph)` [**related**]
- 10.116.2.7** `int ppl_new_Pointset_Powerset_Octagonal_Shape_float_from_-
Pointset_Powerset_Octagonal_Shape_float_with_complexity
(ppl_Pointset_Powerset_Octagonal_Shape_float_t * pph, ppl_const_-
Pointset_Powerset_Octagonal_Shape_float_t ph, int complexity)`
[**related**]

- 10.116.2.8** `int ppl_new_Pointset_Powerset_Octagonal_Shape_float_from_space_dimension`
(`ppl_Pointset_Powerset_Octagonal_Shape_float_t * pph`, `ppl_dimension_type d`, `int empty`) [**related**]
- 10.116.2.9** `int ppl_Pointset_Powerset_Octagonal_Shape_float_add_congruence`
(`ppl_Pointset_Powerset_Octagonal_Shape_float_t ph`, `ppl_const_Congruence_t c`)
[**related**]
- 10.116.2.10** `int ppl_Pointset_Powerset_Octagonal_Shape_float_add_congruences` (`ppl_Pointset_Powerset_Octagonal_Shape_float_t ph`, `ppl_const_Congruence_System_t cs`)
[**related**]
- 10.116.2.11** `int ppl_Pointset_Powerset_Octagonal_Shape_float_add_constraint`
(`ppl_Pointset_Powerset_Octagonal_Shape_float_t ph`, `ppl_const_Constraint_t c`)
[**related**]
- 10.116.2.12** `int ppl_Pointset_Powerset_Octagonal_Shape_float_add_constraints` (`ppl_Pointset_Powerset_Octagonal_Shape_float_t ph`, `ppl_const_Constraint_System_t cs`)
[**related**]
- 10.116.2.13** `int ppl_Pointset_Powerset_Octagonal_Shape_float_add_disjunct` (`ppl_Pointset_Powerset_Octagonal_Shape_float_t ps`, `ppl_const_Octagonal_Shape_float_t d`)
[**related**]
- 10.116.2.14** `int ppl_Pointset_Powerset_Octagonal_Shape_float_add_space_dimensions_and_embed` (`ppl_Pointset_Powerset_Octagonal_Shape_float_t ph`, `ppl_dimension_type d`)
[**related**]
- 10.116.2.15** `int ppl_Pointset_Powerset_Octagonal_Shape_float_add_space_dimensions_and_project` (`ppl_Pointset_Powerset_Octagonal_Shape_float_t ph`, `ppl_dimension_type d`)
[**related**]

- 10.116.2.16** `int ppl_Pointset_Powerset_Octagonal_Shape_float_affine_dimension`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph`, `ppl_dimension_type * m`)
 [`related`]
- 10.116.2.17** `int ppl_Pointset_Powerset_Octagonal_Shape_float_affine_image`
 (`ppl_Pointset_Powerset_Octagonal_Shape_float_t ph`, `ppl_dimension_type var`,
`ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`) [`related`]
- 10.116.2.18** `int ppl_Pointset_Powerset_Octagonal_Shape_float_affine_preimage`
 (`ppl_Pointset_Powerset_Octagonal_Shape_float_t ph`, `ppl_dimension_type var`,
`ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`) [`related`]
- 10.116.2.19** `int ppl_Pointset_Powerset_Octagonal_Shape_float_BGP99_BHMZ05_-`
`extrapolation_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_float_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_float_t y`, `int disjuncts`) [`related`]
- 10.116.2.20** `int ppl_Pointset_Powerset_Octagonal_Shape_float_BHZ03_H79_BHMZ05_-`
`widening_assign` (`ppl_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_float_t y`) [`related`]
- 10.116.2.21** `int ppl_Pointset_Powerset_Octagonal_Shape_float_bounded_affine_image`
 (`ppl_Pointset_Powerset_Octagonal_Shape_float_t ph`, `ppl_dimension_type`
`var`, `ppl_const_Linear_Expression_t lb`, `ppl_const_Linear_Expression_t ub`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.116.2.22** `int ppl_Pointset_Powerset_Octagonal_Shape_float_bounded_affine_preimage`
 (`ppl_Pointset_Powerset_Octagonal_Shape_float_t ph`, `ppl_dimension_type`
`var`, `ppl_const_Linear_Expression_t lb`, `ppl_const_Linear_Expression_t ub`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.116.2.23** `int ppl_Pointset_Powerset_Octagonal_Shape_float_bounds_from_above` (`ppl_const_-`
`Pointset_Powerset_Octagonal_Shape_float_t ph`, `ppl_const_Linear_Expression_t le`)
 [`related`]

- 10.116.2.24 `int ppl_Pointset_Powerset_Octagonal_Shape_float_bounds_from_below (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph, ppl_const_Linear_Expression_t le)` **[related]**
- 10.116.2.25 `int ppl_Pointset_Powerset_Octagonal_Shape_float_concatenate_assign (ppl_Pointset_Powerset_Octagonal_Shape_float_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_float_t y)` **[related]**
- 10.116.2.26 `int ppl_Pointset_Powerset_Octagonal_Shape_float_constrains (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, ppl_dimension_type var)` **[related]**
- 10.116.2.27 `int ppl_Pointset_Powerset_Octagonal_Shape_float_contains_integer_point (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph)` **[related]**
- 10.116.2.28 `int ppl_Pointset_Powerset_Octagonal_Shape_float_contains_Pointset_Powerset_Octagonal_Shape_float (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_float_t y)` **[related]**
- 10.116.2.29 `int ppl_Pointset_Powerset_Octagonal_Shape_float_difference_assign (ppl_Pointset_Powerset_Octagonal_Shape_float_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_float_t y)` **[related]**
- 10.116.2.30 `int ppl_Pointset_Powerset_Octagonal_Shape_float_drop_disjunct (ppl_Pointset_Powerset_Octagonal_Shape_float_t ps, ppl_const_Pointset_Powerset_Octagonal_Shape_float_iterator_t cit, ppl_Pointset_Powerset_Octagonal_Shape_float_iterator_t it)` **[related]**
- 10.116.2.31 `int ppl_Pointset_Powerset_Octagonal_Shape_float_drop_disjuncts (ppl_Pointset_Powerset_Octagonal_Shape_float_t ps, ppl_const_Pointset_Powerset_Octagonal_Shape_float_iterator_t first, ppl_const_Pointset_Powerset_Octagonal_Shape_float_iterator_t last)` **[related]**

- 10.116.2.32 `int ppl_Pointset_Powerset_Octagonal_Shape_float_drop_some_non_integer_points`
(`ppl_Pointset_Powerset_Octagonal_Shape_float_t ph`, `int complexity`) [`related`]
- 10.116.2.33 `int ppl_Pointset_Powerset_Octagonal_Shape_float_drop_some_non_integer_points_2`
(`ppl_Pointset_Powerset_Octagonal_Shape_float_t ph`, `ppl_dimension_type ds[ ]`,
`size_t n`, `int complexity`) [`related`]
- 10.116.2.34 `int ppl_Pointset_Powerset_Octagonal_Shape_float_equals_Pointset_Powerset -`
`Octagonal_Shape_float` (`ppl_const_Pointset_Powerset_Octagonal_Shape_float_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_float_t y`) [`related`]
- 10.116.2.35 `int ppl_Pointset_Powerset_Octagonal_Shape_float_expand_space_dimension`
(`ppl_Pointset_Powerset_Octagonal_Shape_float_t ph`, `ppl_dimension_type d`,
`ppl_dimension_type m`) [`related`]
- 10.116.2.36 `int ppl_Pointset_Powerset_Octagonal_Shape_float_external_memory_in_bytes`
(`ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ps`, `size_t * sz`) [`related`]
- 10.116.2.37 `int ppl_Pointset_Powerset_Octagonal_Shape_float_fold_space_dimensions`
(`ppl_Pointset_Powerset_Octagonal_Shape_float_t ph`, `ppl_dimension_type ds[ ]`,
`size_t n`, `ppl_dimension_type d`) [`related`]
- 10.116.2.38 `int ppl_Pointset_Powerset_Octagonal_Shape_float_generalized_affine_image`
(`ppl_Pointset_Powerset_Octagonal_Shape_float_t ph`, `ppl_dimension_type var`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.116.2.39 `int ppl_Pointset_Powerset_Octagonal_Shape_float_generalized_affine_image_lhs_rhs`
(`ppl_Pointset_Powerset_Octagonal_Shape_float_t ph`, `ppl_const_Linear_Expression_t`
`lhs`, `enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
[`related`]

- 10.116.2.40** `int ppl_Pointset_Powerset_Octagonal_Shape_float_generalized_affine_preimage`
 (`ppl_Pointset_Powerset_Octagonal_Shape_float_t ph`, `ppl_dimension_type var`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.116.2.41** `int ppl_Pointset_Powerset_Octagonal_Shape_float_generalized_affine_-`
`preimage_lhs_rhs` (`ppl_Pointset_Powerset_Octagonal_Shape_float_t ph`,
`ppl_const_Linear_Expression_t lhs`, `enum ppl_enum_Constraint_Type relsym`,
`ppl_const_Linear_Expression_t rhs`) [`related`]
- 10.116.2.42** `int ppl_Pointset_Powerset_Octagonal_Shape_float_geometrically_covers_Pointset_-`
`Powerset_Octagonal_Shape_float` (`ppl_const_Pointset_Powerset_Octagonal_-`
`Shape_float_t x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_float_t y`)
 [`related`]
- 10.116.2.43** `int ppl_Pointset_Powerset_Octagonal_Shape_float_geometrically_equals_Pointset_-`
`Powerset_Octagonal_Shape_float` (`ppl_const_Pointset_Powerset_Octagonal_-`
`Shape_float_t x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_float_t y`)
 [`related`]
- 10.116.2.44** `int ppl_Pointset_Powerset_Octagonal_Shape_float_intersection_-`
`assign` (`ppl_Pointset_Powerset_Octagonal_Shape_float_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_float_t y`) [`related`]
- 10.116.2.45** `int ppl_Pointset_Powerset_Octagonal_Shape_float_is_bounded`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph`) [`related`]
- 10.116.2.46** `int ppl_Pointset_Powerset_Octagonal_Shape_float_is_discrete`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph`) [`related`]

- 10.116.2.47** `int ppl_Pointset_Powerset_Octagonal_Shape_float_is_disjoint_from_Pointset_Powerset_Octagonal_Shape_float (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_float_t y)` `[related]`
- 10.116.2.48** `int ppl_Pointset_Powerset_Octagonal_Shape_float_is_empty (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph)` `[related]`
- 10.116.2.49** `int ppl_Pointset_Powerset_Octagonal_Shape_float_is_topologically_closed (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph)` `[related]`
- 10.116.2.50** `int ppl_Pointset_Powerset_Octagonal_Shape_float_is_universe (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph)` `[related]`
- 10.116.2.51** `int ppl_Pointset_Powerset_Octagonal_Shape_float_map_space_dimensions (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, ppl_dimension_type maps[], size_t n)` `[related]`
- 10.116.2.52** `int ppl_Pointset_Powerset_Octagonal_Shape_float_maximize (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)` `[related]`
- 10.116.2.53** `int ppl_Pointset_Powerset_Octagonal_Shape_float_maximize_with_point (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` `[related]`
- 10.116.2.54** `int ppl_Pointset_Powerset_Octagonal_Shape_float_minimize (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)` `[related]`

- 10.116.2.55** `int ppl_Pointset_Powerset_Octagonal_Shape_float_minimize_with_point (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` [**related**]
- 10.116.2.56** `int ppl_Pointset_Powerset_Octagonal_Shape_float_OK (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph)` [**related**]
- 10.116.2.57** `int ppl_Pointset_Powerset_Octagonal_Shape_float_omega_reduce (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph)` [**related**]
- 10.116.2.58** `int ppl_Pointset_Powerset_Octagonal_Shape_float_pairwise_reduce (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph)` [**related**]
- 10.116.2.59** `int ppl_Pointset_Powerset_Octagonal_Shape_float_refine_with_congruence (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, ppl_const_Congruence_t c)` [**related**]
- 10.116.2.60** `int ppl_Pointset_Powerset_Octagonal_Shape_float_refine_with_congruences (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, ppl_const_Congruence_System_t cs)` [**related**]
- 10.116.2.61** `int ppl_Pointset_Powerset_Octagonal_Shape_float_refine_with_constraint (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, ppl_const_Constraint_t c)` [**related**]
- 10.116.2.62** `int ppl_Pointset_Powerset_Octagonal_Shape_float_refine_with_constraints (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, ppl_const_Constraint_System_t cs)` [**related**]

- 10.116.2.63** `int ppl_Pointset_Powerset_Octagonal_Shape_float_relation_with_Congruence`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph`, `ppl_const_Congruence_t c`) [**related**]
- 10.116.2.64** `int ppl_Pointset_Powerset_Octagonal_Shape_float_relation_with_Constraint`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph`, `ppl_const_Constraint_t c`) [**related**]
- 10.116.2.65** `int ppl_Pointset_Powerset_Octagonal_Shape_float_relation_with_Generator`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph`, `ppl_const_Generator_t c`) [**related**]
- 10.116.2.66** `int ppl_Pointset_Powerset_Octagonal_Shape_float_remove_higher_space_dimensions`
 (`ppl_Pointset_Powerset_Octagonal_Shape_float_t ph`, `ppl_dimension_type d`)
 [**related**]
- 10.116.2.67** `int ppl_Pointset_Powerset_Octagonal_Shape_float_remove_space_dimensions`
 (`ppl_Pointset_Powerset_Octagonal_Shape_float_t ph`, `ppl_dimension_type ds[ ]`,
`size_t n`) [**related**]
- 10.116.2.68** `int ppl_Pointset_Powerset_Octagonal_Shape_float_simplify_using_-`
`context_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_float_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_float_t y`) [**related**]
- 10.116.2.69** `int ppl_Pointset_Powerset_Octagonal_Shape_float_size` (`ppl_-`
`const_Pointset_Powerset_Octagonal_Shape_float_t ps`, `size_t * sz`)
 [**related**]
- 10.116.2.70** `int ppl_Pointset_Powerset_Octagonal_Shape_float_space_dimension`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ph`, `ppl_dimension_type * m`)
 [**related**]

- 10.116.2.71** `int ppl_Pointset_Powerset_Octagonal_Shape_float_strictly_contains_Pointset_Powerset_Octagonal_Shape_float (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_float_t y)` **[related]**
- 10.116.2.72** `int ppl_Pointset_Powerset_Octagonal_Shape_float_time_elapse_assign (ppl_Pointset_Powerset_Octagonal_Shape_float_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_float_t y)` **[related]**
- 10.116.2.73** `int ppl_Pointset_Powerset_Octagonal_Shape_float_topological_closure_assign (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph)` **[related]**
- 10.116.2.74** `int ppl_Pointset_Powerset_Octagonal_Shape_float_total_memory_in_bytes (ppl_const_Pointset_Powerset_Octagonal_Shape_float_t ps, size_t * sz)` **[related]**
- 10.116.2.75** `int ppl_Pointset_Powerset_Octagonal_Shape_float_unconstrain_space_dimension (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, ppl_dimension_type var)` **[related]**
- 10.116.2.76** `int ppl_Pointset_Powerset_Octagonal_Shape_float_unconstrain_space_dimensions (ppl_Pointset_Powerset_Octagonal_Shape_float_t ph, ppl_dimension_type ds[], size_t n)` **[related]**
- 10.116.2.77** `int ppl_Pointset_Powerset_Octagonal_Shape_float_upper_bound_assign (ppl_Pointset_Powerset_Octagonal_Shape_float_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_float_t y)` **[related]**
- 10.116.2.78** `int ppl_Pointset_Powerset_Octagonal_Shape_float_upper_bound_assign_if_exact (ppl_Pointset_Powerset_Octagonal_Shape_float_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_float_t y)` **[related]**

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.117 `ppl_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- [int ppl_new_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator](#) (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_t *pit`)
- [int ppl_new_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_from_const_iterator](#) (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_t *px`, `ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_t y`)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_begin](#) (`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t ps`, `ppl_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_t psit`)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_end](#) (`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t ps`, `ppl_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_t psit`)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_equal_test](#) (`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_t x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_t y`)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_increment](#) (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_t psit`)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_decrement](#) (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_t psit`)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_dereference](#) (`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_t ps`, `ppl_const_Octagonal_Shape_int16_t_t *d`)
- [int ppl_delete_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator](#) (`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_t psit`)

10.117.1 Detailed Description

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_tag](#).

10.117.2 Friends And Related Function Documentation

- 10.117.2.1** `int ppl_delete_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_t psit`)
[related]

- 10.117.2.2** `int ppl_new_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_t * pit`)
 [related]
- 10.117.2.3** `int ppl_new_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_from_-`
`const_iterator` (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_t`
`* px`, `ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_t y`)
 [related]
- 10.117.2.4** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_begin`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t ps`,
`ppl_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_t psit`) [related]
- 10.117.2.5** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_decrement`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_t psit`) [related]
- 10.117.2.6** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_dereference`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_t ps`,
`ppl_const_Octagonal_Shape_int16_t_t * d`) [related]
- 10.117.2.7** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_end`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t ps`,
`ppl_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_t psit`) [related]
- 10.117.2.8** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_equal_test`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_t y`)
 [related]
- 10.117.2.9** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_increment`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t_const_iterator_t psit`) [related]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.118 `ppl_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- [int ppl_new_Pointset_Powerset_Octagonal_Shape_int16_t_iterator](#) (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_t *pit`)
- [int ppl_new_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_from_iterator](#) (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_t *px, ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_t y`)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_begin](#) (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t ps, ppl_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_t psit`)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_end](#) (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t ps, ppl_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_t psit`)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_equal_test](#) (`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_t y`)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_increment](#) (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_t psit`)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_decrement](#) (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_t psit`)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_dereference](#) (`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_t ps, ppl_const_Octagonal_Shape_int16_t *d`)
- [int ppl_delete_Pointset_Powerset_Octagonal_Shape_int16_t_iterator](#) (`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_t psit`)

10.118.1 Detailed Description

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_tag](#).

10.118.2 Friends And Related Function Documentation

10.118.2.1 `int ppl_delete_Pointset_Powerset_Octagonal_Shape_int16_t_iterator`
(`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_t psit`) [**related**]

10.118.2.2 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int16_t_iterator`
(`ppl_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_t *pit`) [**related**]

10.118.2.3 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_from_iterator`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_t * px`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_t y`) [**related**]

10.118.2.4 `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_-`
`begin` (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ps`,
`ppl_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_t psit`) [**related**]

10.118.2.5 `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_decrement`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_t psit`) [**related**]

10.118.2.6 `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_dereference`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_t ps`,
`ppl_const_Octagonal_Shape_int16_t_t * d`) [**related**]

10.118.2.7 `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_-`
`end` (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ps`,
`ppl_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_t psit`) [**related**]

10.118.2.8 `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_equal_test`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_t y`) [**related**]

10.118.2.9 `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_increment`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_t psit`) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.119 `ppl_Pointset_Powerset_Octagonal_Shape_int16_t_tag` Interface Reference

Types and functions for `ppl_Pointset_Powerset_Octagonal_Shape_int16_t_tag`.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Pointset_Powerset_Octagonal_Shape_int16_t` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t` ph)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_int16_t_from_space_dimension` (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t` *pph, `ppl_dimension_type` d, `int` empty)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_int16_t_from_Pointset_Powerset_Octagonal_Shape_int16_t` (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t` *pph, `ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t` ph)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_int16_t_from_Octagonal_Shape_int16_t` (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t` *pph, `ppl_const_Octagonal_Shape_int16_t` ph)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_int16_t_from_Pointset_Powerset_Octagonal_Shape_int16_t_with_complexity` (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t` *pph, `ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t` ph, `int` complexity)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_int16_t_from_Octagonal_Shape_int16_t_with_complexity` (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t` *pph, `ppl_const_Octagonal_Shape_int16_t` ph, `int` complexity)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_int16_t_from_Constraint_System` (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t` *pph, `ppl_const_Constraint_System_t` cs)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_int16_t_from_Congruence_System` (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t` *pph, `ppl_const_Congruence_System_t` cs)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_space_dimension` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t` ph, `ppl_dimension_type` *m)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_affine_dimension` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t` ph, `ppl_dimension_type` *m)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_relation_with_Constraint` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t` ph, `ppl_const_Constraint_t` c)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_relation_with_Generator` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t` ph, `ppl_const_Generator_t` g)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_relation_with_Congruence` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t` ph, `ppl_const_Congruence_t` c)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_is_empty` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_is_universe` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_is_bounded` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_contains_integer_point` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_is_topologically_closed` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_is_discrete` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_topological_closure_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_pairwise_reduce` (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_omega_reduce` (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t` ph)

- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_bounds_from_above](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_bounds_from_below](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_maximize](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_minimize](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_maximize_with_point](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_minimize_with_point](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_contains_Pointset_Powerset_Octagonal_Shape_int16_t](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_strictly_contains_Pointset_Powerset_Octagonal_Shape_int16_t](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_is_disjoint_from_Pointset_Powerset_Octagonal_Shape_int16_t](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_geometrically_covers_Pointset_Powerset_Octagonal_Shape_int16_t](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_geometrically_equals_Pointset_Powerset_Octagonal_Shape_int16_t](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_equals_Pointset_Powerset_Octagonal_Shape_int16_t](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_OK](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t ph)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_add_constraint](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_add_congruence](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_add_constraints](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_add_congruences](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_refine_with_constraint](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_refine_with_congruence](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_refine_with_constraints](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_refine_with_congruences](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ph, ppl_const_Congruence_System_t cs)

- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_intersection_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_upper_bound_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_difference_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_concatenate_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_time_elapse_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_upper_bound_assign_if_exact](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_simplify_using_context_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_constrains](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t ph, ppl_dimension_type var)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_unconstrain_space_dimension](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t ph, ppl_dimension_type var)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_unconstrain_space_dimensions](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t ph, ppl_dimension_type ds[], size_t n)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_affine_image](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_affine_preimage](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_bounded_affine_image](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_bounded_affine_preimage](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_generalized_affine_image](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t ph, ppl_dimension_type var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_generalized_affine_preimage](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t ph, ppl_dimension_type var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_generalized_affine_image_lhs_rhs](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_generalized_affine_preimage_lhs_rhs](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_add_space_dimensions_and_embed](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t ph, ppl_dimension_type d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_add_space_dimensions_and_project](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t ph, ppl_dimension_type d)

- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_remove_space_dimensions](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ph, ppl_dimension_type ds[], size_t n)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_remove_higher_space_dimensions](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ph, ppl_dimension_type d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_expand_space_dimension](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ph, ppl_dimension_type d, ppl_dimension_type m)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_fold_space_dimensions](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_map_space_dimensions](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ph, ppl_dimension_type maps[], size_t n)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_drop_some_non_integer_points](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ph, int complexity)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_drop_some_non_integer_points_2](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ph, ppl_dimension_type ds[], size_t n, int complexity)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_external_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_total_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_size](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_add_disjunct](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ps, ppl_const_Octagonal_Shape_int16_t_t d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_drop_disjunct](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ps, ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_t cit, ppl_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_t it)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_drop_disjuncts](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ps, ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_t first, ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_iterator_t last)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_BHZ03_H79_BHMZ05_widening_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_BGP99_BHMZ05_extrapolation_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t y, int disjuncts)

10.119.1 Detailed Description

Types and functions for [ppl_Pointset_Powerset_Octagonal_Shape_int16_t_tag](#).

10.119.2 Friends And Related Function Documentation

- 10.119.2.1** int [ppl_delete_Pointset_Powerset_Octagonal_Shape_int16_t](#)
(ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t ph) **[related]**

- 10.119.2.2 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int16_t_from_Congruence_System (ppl_Pointset_Powerset_Octagonal_Shape_int16_t * pph, ppl_const_Congruence_System_t cs)` [`related`]
- 10.119.2.3 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int16_t_from_Constraint_System (ppl_Pointset_Powerset_Octagonal_Shape_int16_t * pph, ppl_const_Constraint_System_t cs)` [`related`]
- 10.119.2.4 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int16_t_from_Octagonal_Shape_int16_t (ppl_Pointset_Powerset_Octagonal_Shape_int16_t * pph, ppl_const_Octagonal_Shape_int16_t_t ph)` [`related`]
- 10.119.2.5 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int16_t_from_Octagonal_Shape_int16_t_with_complexity (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t * pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)` [`related`]
- 10.119.2.6 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int16_t_from_Pointset_Powerset_Octagonal_Shape_int16_t (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t * pph, ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t ph)` [`related`]
- 10.119.2.7 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int16_t_from_Pointset_Powerset_Octagonal_Shape_int16_t_with_complexity (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t * pph, ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t ph, int complexity)` [`related`]
- 10.119.2.8 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int16_t_from_space_dimension (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t * pph, ppl_dimension_type d, int empty)` [`related`]
- 10.119.2.9 `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_add_congruence (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ph, ppl_const_Congruence_t c)` [`related`]

- 10.119.2.10 `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_add_congruences (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ph, ppl_const_Congruence_System_t cs)` [**related**]
- 10.119.2.11 `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_add_constraint (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ph, ppl_const_Constraint_t c)` [**related**]
- 10.119.2.12 `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_add_constraints (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ph, ppl_const_Constraint_System_t cs)` [**related**]
- 10.119.2.13 `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_add_disjunct (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ps, ppl_const_Octagonal_Shape_int16_t_t d)` [**related**]
- 10.119.2.14 `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_add_space_dimensions_and_embed (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ph, ppl_dimension_type d)` [**related**]
- 10.119.2.15 `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_add_space_dimensions_and_project (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ph, ppl_dimension_type d)` [**related**]
- 10.119.2.16 `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_affine_dimension (ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t ph, ppl_dimension_type *m)` [**related**]
- 10.119.2.17 `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_affine_image (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]

- 10.119.2.18** int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_affine_preimage
(ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t *ph*, ppl_dimension_type *var*,
ppl_const_Linear_Expression_t *le*, ppl_const_Coefficient_t *d*) [**related**]
- 10.119.2.19** int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_BGP99_BHMZ05_-
extrapolation_assign (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t *x*,
ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t *y*, int *disjuncts*)
[**related**]
- 10.119.2.20** int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_BHZ03_H79_BHMZ05_-
widening_assign (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t *x*,
ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t *y*) [**related**]
- 10.119.2.21** int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_bounded_affine_image
(ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t *ph*, ppl_dimension_type
var, ppl_const_Linear_Expression_t *lb*, ppl_const_Linear_Expression_t *ub*,
ppl_const_Coefficient_t *d*) [**related**]
- 10.119.2.22** int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_bounded_affine_preimage
(ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t *ph*, ppl_dimension_type
var, ppl_const_Linear_Expression_t *lb*, ppl_const_Linear_Expression_t *ub*,
ppl_const_Coefficient_t *d*) [**related**]
- 10.119.2.23** int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_bounds_from_above
(ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t *ph*,
ppl_const_Linear_Expression_t *le*) [**related**]
- 10.119.2.24** int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_bounds_from_below
(ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t *ph*,
ppl_const_Linear_Expression_t *le*) [**related**]

- 10.119.2.25** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_concatenate - assign (ppl_Pointset_Powerset_Octagonal_Shape_int16_t t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t t y)` **[related]**
- 10.119.2.26** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_constrains (ppl_Pointset_Powerset_Octagonal_Shape_int16_t t ph, ppl_dimension_type var)` **[related]**
- 10.119.2.27** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_contains_integer_point (ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t t ph)` **[related]**
- 10.119.2.28** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_contains_Pointset_Powerset_Octagonal_Shape_int16_t (ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t t y)` **[related]**
- 10.119.2.29** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_difference - assign (ppl_Pointset_Powerset_Octagonal_Shape_int16_t t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t t y)` **[related]**
- 10.119.2.30** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_drop_disjunct (ppl_Pointset_Powerset_Octagonal_Shape_int16_t t ps, ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_iterator t cit, ppl_Pointset_Powerset_Octagonal_Shape_int16_t_iterator t it)` **[related]**
- 10.119.2.31** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_drop_disjuncts (ppl_Pointset_Powerset_Octagonal_Shape_int16_t t ps, ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_iterator t first, ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_iterator t last)` **[related]**
- 10.119.2.32** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_drop_some_non_integer_points (ppl_Pointset_Powerset_Octagonal_Shape_int16_t t ph, int complexity)` **[related]**

- 10.119.2.33** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_drop_some_non - integer_points_2 (ppl_Pointset_Powerset_Octagonal_Shape_int16_t ph, ppl_dimension_type ds[], size_t n, int complexity)` `[related]`
- 10.119.2.34** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_equals_Pointset_Powerset - Octagonal_Shape_int16_t (ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t y)` `[related]`
- 10.119.2.35** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_expand_space_dimension (ppl_Pointset_Powerset_Octagonal_Shape_int16_t ph, ppl_dimension_type d, ppl_dimension_type m)` `[related]`
- 10.119.2.36** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_external_memory_in_bytes (ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t ps, size_t * sz)` `[related]`
- 10.119.2.37** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_fold_space_dimensions (ppl_Pointset_Powerset_Octagonal_Shape_int16_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` `[related]`
- 10.119.2.38** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_generalized_affine_image (ppl_Pointset_Powerset_Octagonal_Shape_int16_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` `[related]`
- 10.119.2.39** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_generalized_affine - image_lhs_rhs (ppl_Pointset_Powerset_Octagonal_Shape_int16_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t rhs)` `[related]`

- 10.119.2.40** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_generalized_affine_preimage`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ph`, `ppl_dimension_type var`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.119.2.41** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_generalized_affine -`
`preimage_lhs_rhs` (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ph`,
`ppl_const_Linear_Expression_t lhs`, `enum ppl_enum_Constraint_Type relsym`,
`ppl_const_Linear_Expression_t rhs`) [`related`]
- 10.119.2.42** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t -`
`geometrically_covers_Pointset_Powerset_Octagonal_Shape_int16_t`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t y`) [`related`]
- 10.119.2.43** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t -`
`geometrically_equals_Pointset_Powerset_Octagonal_Shape_int16_t`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t y`) [`related`]
- 10.119.2.44** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_intersection -`
`assign` (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t y`) [`related`]
- 10.119.2.45** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_is_bounded`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t ph`) [`related`]
- 10.119.2.46** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_is_discrete`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t ph`) [`related`]

- 10.119.2.47** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_is_disjoint_from_Pointset_Powerset_Octagonal_Shape_int16_t (ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t y)` `[related]`
- 10.119.2.48** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_is_empty (ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t ph)` `[related]`
- 10.119.2.49** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_is_topologically_closed (ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t ph)` `[related]`
- 10.119.2.50** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_is_universe (ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t ph)` `[related]`
- 10.119.2.51** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_map_space_dimensions (ppl_Pointset_Powerset_Octagonal_Shape_int16_t ph, ppl_dimension_type maps[], size_t n)` `[related]`
- 10.119.2.52** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_maximize (ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` `[related]`
- 10.119.2.53** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_maximize_with_point (ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` `[related]`
- 10.119.2.54** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_minimize (ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` `[related]`

- 10.119.2.55** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_minimize_with_point`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t ph`,
`ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`,
`int * poptimum`, `ppl_Generator_t point`) [`related`]
- 10.119.2.56** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_OK`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t ph`) [`related`]
- 10.119.2.57** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_omega_reduce`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ph`) [`related`]
- 10.119.2.58** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_pairwise_reduce`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ph`) [`related`]
- 10.119.2.59** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_refine_with_congruence`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ph`, `ppl_const_Congruence_t c`)
 [`related`]
- 10.119.2.60** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_refine_with_congruences` (`ppl_-`
`Pointset_Powerset_Octagonal_Shape_int16_t_t ph`, `ppl_const_Congruence_System_t cs`) [`related`]
- 10.119.2.61** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_refine_with_constraint`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t ph`, `ppl_const_Constraint_t c`)
 [`related`]
- 10.119.2.62** `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_refine_with_constraints` (`ppl_-`
`Pointset_Powerset_Octagonal_Shape_int16_t_t ph`, `ppl_const_Constraint_System_t cs`) [`related`]

- 10.119.2.63** int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_relation_with_Congruence
(ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t *ph*,
ppl_const_Congruence_t *c*) [**related**]
- 10.119.2.64** int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_relation_with_Constraint
(ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t *ph*,
ppl_const_Constraint_t *c*) [**related**]
- 10.119.2.65** int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_relation_with_Generator
(ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t *ph*,
ppl_const_Generator_t *c*) [**related**]
- 10.119.2.66** int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_remove_higher_
space_dimensions (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t *ph*,
ppl_dimension_type *d*) [**related**]
- 10.119.2.67** int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_remove_space_dimensions
(ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t *ph*, ppl_dimension_type *ds*[],
size_t *n*) [**related**]
- 10.119.2.68** int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_simplify_using_
context_assign (ppl_Pointset_Powerset_Octagonal_Shape_int16_t_t *x*,
ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t *y*) [**related**]
- 10.119.2.69** int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_size (ppl_
const_Pointset_Powerset_Octagonal_Shape_int16_t_t *ps*, size_t * *sz*)
[**related**]
- 10.119.2.70** int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_space_dimension
(ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t_t *ph*, ppl_dimension_type *
m) [**related**]

- 10.119.2.71 `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t -`
`strictly_contains_Pointset_Powerset_Octagonal_Shape_int16_t`
`(ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t x,`
`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t y) [related]`

- 10.119.2.72 `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_time_elapse -`
`assign (ppl_Pointset_Powerset_Octagonal_Shape_int16_t x,`
`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t y) [related]`

- 10.119.2.73 `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_topological_closure_assign`
`(ppl_Pointset_Powerset_Octagonal_Shape_int16_t ph) [related]`

- 10.119.2.74 `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_total_memory_in_bytes`
`(ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t ps, size_t * sz)`
`[related]`

- 10.119.2.75 `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_unconstrain_space_dimension`
`(ppl_Pointset_Powerset_Octagonal_Shape_int16_t ph, ppl_dimension_type var)`
`[related]`

- 10.119.2.76 `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_unconstrain_space_dimensions`
`(ppl_Pointset_Powerset_Octagonal_Shape_int16_t ph, ppl_dimension_type ds[],`
`size_t n) [related]`

- 10.119.2.77 `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_upper -`
`bound_assign (ppl_Pointset_Powerset_Octagonal_Shape_int16_t x,`
`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t y) [related]`

- 10.119.2.78 `int ppl_Pointset_Powerset_Octagonal_Shape_int16_t_upper_bound -`
`assign_if_exact (ppl_Pointset_Powerset_Octagonal_Shape_int16_t x,`
`ppl_const_Pointset_Powerset_Octagonal_Shape_int16_t y) [related]`

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.120 `ppl_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator` (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_t *pit`)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_from_const_iterator` (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_t *px, ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_t y`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_begin` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t ps, ppl_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_end` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t ps, ppl_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_equal_test` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_t y`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_increment` (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_decrement` (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_dereference` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_t ps, ppl_const_Octagonal_Shape_int32_t_t *d`)
- `int ppl_delete_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_t psit`)

10.120.1 Detailed Description

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_tag](#).

10.120.2 Friends And Related Function Documentation

- 10.120.2.1** `int ppl_delete_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_t psit`)
[related]

- 10.120.2.2** `int ppl_new_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_t * pit`)
 [related]
- 10.120.2.3** `int ppl_new_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_from_-`
`const_iterator` (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_t`
`* px`, `ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_t y`)
 [related]
- 10.120.2.4** `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_begin`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t ps`,
`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_t psit`) [related]
- 10.120.2.5** `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_decrement`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_t psit`) [related]
- 10.120.2.6** `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_dereference`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_t ps`,
`ppl_const_Octagonal_Shape_int32_t_t * d`) [related]
- 10.120.2.7** `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_end`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t ps`,
`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_t psit`) [related]
- 10.120.2.8** `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_equal_test`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_t y`)
 [related]
- 10.120.2.9** `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_increment`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_const_iterator_t psit`) [related]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.121 `ppl_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- [int ppl_new_Pointset_Powerset_Octagonal_Shape_int32_t_iterator](#) (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_t *pit`)
- [int ppl_new_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_from_iterator](#) (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_t *px`, `ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_t y`)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_begin](#) (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t ps`, `ppl_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_t psit`)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_end](#) (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t ps`, `ppl_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_t psit`)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_equal_test](#) (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_t x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_t y`)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_increment](#) (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_t psit`)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_decrement](#) (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_t psit`)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_dereference](#) (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_t ps`, `ppl_const_Octagonal_Shape_int32_t *d`)
- [int ppl_delete_Pointset_Powerset_Octagonal_Shape_int32_t_iterator](#) (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_t psit`)

10.121.1 Detailed Description

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_tag](#).

10.121.2 Friends And Related Function Documentation

10.121.2.1 `int ppl_delete_Pointset_Powerset_Octagonal_Shape_int32_t_iterator`
(`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_t psit`) [**related**]

10.121.2.2 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int32_t_iterator`
(`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_t *pit`) [**related**]

10.121.2.3 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_from_iterator`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_t * px`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_t y`) [**related**]

10.121.2.4 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_-`
`begin` (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ps`,
`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_t psit`) [**related**]

10.121.2.5 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_decrement`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_t psit`) [**related**]

10.121.2.6 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_dereference`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_t ps`,
`ppl_const_Octagonal_Shape_int32_t_t * d`) [**related**]

10.121.2.7 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_-`
`end` (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ps`,
`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_t psit`) [**related**]

10.121.2.8 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_equal_test`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_t y`) [**related**]

10.121.2.9 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_increment`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_t psit`) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.122 `ppl_Pointset_Powerset_Octagonal_Shape_int32_t_tag` Interface Reference

Types and functions for [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Pointset_Powerset_Octagonal_Shape_int32_t` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t` ph)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_int32_t_from_space_dimension` (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t` *pph, `ppl_dimension_type` d, `int` empty)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_int32_t_from_Pointset_Powerset_Octagonal_Shape_int32_t` (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t` *pph, `ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t` ph)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_int32_t_from_Octagonal_Shape_int32_t` (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t` *pph, `ppl_const_Octagonal_Shape_int32_t` ph)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_int32_t_from_Pointset_Powerset_Octagonal_Shape_int32_t_with_complexity` (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t` *pph, `ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t` ph, `int` complexity)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_int32_t_from_Octagonal_Shape_int32_t_with_complexity` (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t` *pph, `ppl_const_Octagonal_Shape_int32_t` ph, `int` complexity)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_int32_t_from_Constraint_System` (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t` *pph, `ppl_const_Constraint_System_t` cs)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_int32_t_from_Congruence_System` (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t` *pph, `ppl_const_Congruence_System_t` cs)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_space_dimension` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t` ph, `ppl_dimension_type` *m)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_affine_dimension` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t` ph, `ppl_dimension_type` *m)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_relation_with_Constraint` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t` ph, `ppl_const_Constraint_t` c)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_relation_with_Generator` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t` ph, `ppl_const_Generator_t` c)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_relation_with_Congruence` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t` ph, `ppl_const_Congruence_t` c)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_is_empty` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_is_universe` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_is_bounded` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_contains_integer_point` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_is_topologically_closed` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_is_discrete` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_topological_closure_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_pairwise_reduce` (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_omega_reduce` (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t` ph)

- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_bounds_from_above](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_bounds_from_below](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_maximize](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_minimize](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_maximize_with_point](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_minimize_with_point](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_contains_Pointset_Powerset_Octagonal_Shape_int32_t](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_strictly_contains_Pointset_Powerset_Octagonal_Shape_int32_t](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_is_disjoint_from_Pointset_Powerset_Octagonal_Shape_int32_t](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_geometrically_covers_Pointset_Powerset_Octagonal_Shape_int32_t](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_geometrically_equals_Pointset_Powerset_Octagonal_Shape_int32_t](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_equals_Pointset_Powerset_Octagonal_Shape_int32_t](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_OK](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t ph)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_add_constraint](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_add_congruence](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_add_constraints](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_add_congruences](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_refine_with_constraint](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_refine_with_congruence](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_refine_with_constraints](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_refine_with_congruences](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ph, ppl_const_Congruence_System_t cs)

- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_intersection_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_upper_bound_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_difference_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_concatenate_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_time_elapse_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_upper_bound_assign_if_exact](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_simplify_using_context_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_constrains](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t ph, ppl_dimension_type var)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_unconstrain_space_dimension](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t ph, ppl_dimension_type var)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_unconstrain_space_dimensions](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t ph, ppl_dimension_type ds[], size_t n)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_affine_image](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_affine_preimage](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_bounded_affine_image](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_bounded_affine_preimage](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_generalized_affine_image](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t ph, ppl_dimension_type var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_generalized_affine_preimage](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t ph, ppl_dimension_type var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_generalized_affine_image_lhs_rhs](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_generalized_affine_preimage_lhs_rhs](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_add_space_dimensions_and_embed](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t ph, ppl_dimension_type d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_add_space_dimensions_and_project](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t ph, ppl_dimension_type d)

- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_remove_space_dimensions](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_remove_higher_space_dimensions](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_expand_space_dimension](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_fold_space_dimensions](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_map_space_dimensions](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_drop_some_non_integer_points](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ph, int complexity)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_drop_some_non_integer_points_2](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_external_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_total_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_size](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_add_disjunct](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ps, ppl_const_Octagonal_Shape_int32_t_t d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_drop_disjunct](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ps, ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_t cit, ppl_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_t it)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_drop_disjuncts](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ps, ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_t first, ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_iterator_t last)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_BHZ03_H79_BHMZ05_widening_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_BGP99_BHMZ05_extrapolation_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t y, int disjuncts)

10.122.1 Detailed Description

Types and functions for [ppl_Pointset_Powerset_Octagonal_Shape_int32_t_tag](#).

10.122.2 Friends And Related Function Documentation

- 10.122.2.1** int [ppl_delete_Pointset_Powerset_Octagonal_Shape_int32_t](#)
(ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t ph) [[related](#)]

- 10.122.2.2 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int32_t_from_Congruence_System (ppl_Pointset_Powerset_Octagonal_Shape_int32_t * pph, ppl_const_Congruence_System_t cs)` [`related`]
- 10.122.2.3 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int32_t_from_Constraint_System (ppl_Pointset_Powerset_Octagonal_Shape_int32_t * pph, ppl_const_Constraint_System_t cs)` [`related`]
- 10.122.2.4 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int32_t_from_Octagonal_Shape_int32_t (ppl_Pointset_Powerset_Octagonal_Shape_int32_t * pph, ppl_const_Octagonal_Shape_int32_t_t ph)` [`related`]
- 10.122.2.5 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int32_t_from_Octagonal_Shape_int32_t_with_complexity (ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t * pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)` [`related`]
- 10.122.2.6 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int32_t_from_Pointset_Powerset_Octagonal_Shape_int32_t (ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t * pph, ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t ph)` [`related`]
- 10.122.2.7 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int32_t_from_Pointset_Powerset_Octagonal_Shape_int32_t_with_complexity (ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t * pph, ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t ph, int complexity)` [`related`]
- 10.122.2.8 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int32_t_from_space_dimension (ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t * pph, ppl_dimension_type d, int empty)` [`related`]
- 10.122.2.9 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_add_congruence (ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ph, ppl_const_Congruence_t c)` [`related`]

- 10.122.2.10 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_add_congruences (ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ph, ppl_const_Congruence_System_t cs)` [**related**]
- 10.122.2.11 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_add_constraint (ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ph, ppl_const_Constraint_t c)` [**related**]
- 10.122.2.12 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_add_constraints (ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ph, ppl_const_Constraint_System_t cs)` [**related**]
- 10.122.2.13 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_add_disjunct (ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ps, ppl_const_Octagonal_Shape_int32_t_t d)` [**related**]
- 10.122.2.14 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_add_space_dimensions_and_embed (ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ph, ppl_dimension_type d)` [**related**]
- 10.122.2.15 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_add_space_dimensions_and_project (ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ph, ppl_dimension_type d)` [**related**]
- 10.122.2.16 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_affine_dimension (ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t ph, ppl_dimension_type *m)` [**related**]
- 10.122.2.17 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_affine_image (ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]

- 10.122.2.18 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_affine_preimage`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ph`, `ppl_dimension_type var`,
`ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`) [`related`]
- 10.122.2.19 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_BGP99_BHMZ05_-`
`extrapolation_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t y`, `int disjuncts`)
 [`related`]
- 10.122.2.20 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_BHZ03_H79_BHMZ05_-`
`widening_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t y`) [`related`]
- 10.122.2.21 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_bounded_affine_image`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ph`, `ppl_dimension_type`
`var`, `ppl_const_Linear_Expression_t lb`, `ppl_const_Linear_Expression_t ub`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.122.2.22 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_bounded_affine_preimage`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ph`, `ppl_dimension_type`
`var`, `ppl_const_Linear_Expression_t lb`, `ppl_const_Linear_Expression_t ub`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.122.2.23 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_bounds_from_above`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t ph`,
`ppl_const_Linear_Expression_t le`) [`related`]
- 10.122.2.24 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_bounds_from_below`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t ph`,
`ppl_const_Linear_Expression_t le`) [`related`]

- 10.122.2.25 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_concatenate -`
`assign (ppl_Pointset_Powerset_Octagonal_Shape_int32_t t x,`
`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t y) [related]`
- 10.122.2.26 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_constrains`
`(ppl_Pointset_Powerset_Octagonal_Shape_int32_t t ph, ppl_dimension_type var)`
`[related]`
- 10.122.2.27 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_contains_integer_point`
`(ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t t ph) [related]`
- 10.122.2.28 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_contains_Pointset_Powerset -`
`Octagonal_Shape_int32_t (ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t t`
`x, ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t y) [related]`
- 10.122.2.29 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_difference -`
`assign (ppl_Pointset_Powerset_Octagonal_Shape_int32_t t x,`
`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t y) [related]`
- 10.122.2.30 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_drop_disjunct`
`(ppl_Pointset_Powerset_Octagonal_Shape_int32_t t ps, ppl -`
`const_Pointset_Powerset_Octagonal_Shape_int32_t_iterator t cit,`
`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_iterator t it) [related]`
- 10.122.2.31 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_drop_disjuncts`
`(ppl_Pointset_Powerset_Octagonal_Shape_int32_t t ps, ppl -`
`const_Pointset_Powerset_Octagonal_Shape_int32_t_iterator t first,`
`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_iterator t last)`
`[related]`
- 10.122.2.32 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_drop_some_non_integer_points`
`(ppl_Pointset_Powerset_Octagonal_Shape_int32_t t ph, int complexity)`
`[related]`

- 10.122.2.33** int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_drop_some_non_integer_points_2 (ppl_Pointset_Powerset_Octagonal_Shape_int32_t *ph*, ppl_dimension_type *ds*[], size_t *n*, int *complexity*) [related]
- 10.122.2.34** int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_equals_Pointset_Powerset_Octagonal_Shape_int32_t (ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t *x*, ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t *y*) [related]
- 10.122.2.35** int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_expand_space_dimension (ppl_Pointset_Powerset_Octagonal_Shape_int32_t *ph*, ppl_dimension_type *d*, ppl_dimension_type *m*) [related]
- 10.122.2.36** int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_external_memory_in_bytes (ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t *ps*, size_t * *sz*) [related]
- 10.122.2.37** int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_fold_space_dimensions (ppl_Pointset_Powerset_Octagonal_Shape_int32_t *ph*, ppl_dimension_type *ds*[], size_t *n*, ppl_dimension_type *d*) [related]
- 10.122.2.38** int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_generalized_affine_image (ppl_Pointset_Powerset_Octagonal_Shape_int32_t *ph*, ppl_dimension_type *var*, enum ppl_enum_Constraint_Type *relysym*, ppl_const_Linear_Expression_t *le*, ppl_const_Coefficient_t *d*) [related]
- 10.122.2.39** int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_generalized_affine_image_lhs_rhs (ppl_Pointset_Powerset_Octagonal_Shape_int32_t *ph*, ppl_const_Linear_Expression_t *lhs*, enum ppl_enum_Constraint_Type *relysym*, ppl_const_Linear_Expression_t *rhs*) [related]

- 10.122.2.40 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_generalized_affine_preimage`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ph`, `ppl_dimension_type var`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.122.2.41 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_generalized_affine_`
`preimage_lhs_rhs` (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ph`,
`ppl_const_Linear_Expression_t lhs`, `enum ppl_enum_Constraint_Type relsym`,
`ppl_const_Linear_Expression_t rhs`) [`related`]
- 10.122.2.42 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_`
`geometrically_covers_Pointset_Powerset_Octagonal_Shape_int32_t`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t y`) [`related`]
- 10.122.2.43 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_`
`geometrically_equals_Pointset_Powerset_Octagonal_Shape_int32_t`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t y`) [`related`]
- 10.122.2.44 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_intersection_`
`assign` (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t y`) [`related`]
- 10.122.2.45 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_is_bounded`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t ph`) [`related`]
- 10.122.2.46 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_is_discrete`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t ph`) [`related`]

- 10.122.2.47** `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_is_disjoint_from_Pointset_Powerset_Octagonal_Shape_int32_t (ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t y)` [related]
- 10.122.2.48** `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_is_empty (ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t ph)` [related]
- 10.122.2.49** `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_is_topologically_closed (ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t ph)` [related]
- 10.122.2.50** `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_is_universe (ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t ph)` [related]
- 10.122.2.51** `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_map_space_dimensions (ppl_Pointset_Powerset_Octagonal_Shape_int32_t ph, ppl_dimension_type maps[], size_t n)` [related]
- 10.122.2.52** `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_maximize (ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [related]
- 10.122.2.53** `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_maximize_with_point (ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` [related]
- 10.122.2.54** `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_minimize (ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [related]

- 10.122.2.55** `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_minimize_with_point`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t ph`,
`ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`,
`int * poptimum`, `ppl_Generator_t point`) [`related`]
- 10.122.2.56** `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_OK`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t ph`) [`related`]
- 10.122.2.57** `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_omega_reduce`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ph`) [`related`]
- 10.122.2.58** `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_pairwise_reduce`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ph`) [`related`]
- 10.122.2.59** `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_refine_with_congruence`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ph`, `ppl_const_Congruence_t c`)
 [`related`]
- 10.122.2.60** `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_refine_with_congruences` (`ppl_-`
`Pointset_Powerset_Octagonal_Shape_int32_t_t ph`, `ppl_const_Congruence_System_t`
`cs`) [`related`]
- 10.122.2.61** `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_refine_with_constraint`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ph`, `ppl_const_Constraint_t c`)
 [`related`]
- 10.122.2.62** `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_refine_with_constraints` (`ppl_-`
`Pointset_Powerset_Octagonal_Shape_int32_t_t ph`, `ppl_const_Constraint_System_t`
`cs`) [`related`]

- 10.122.2.63 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_relation_with_Congruence`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t ph`,
`ppl_const_Congruence_t c`) [`related`]
- 10.122.2.64 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_relation_with_Constraint`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t ph`,
`ppl_const_Constraint_t c`) [`related`]
- 10.122.2.65 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_relation_with_Generator`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t ph`,
`ppl_const_Generator_t c`) [`related`]
- 10.122.2.66 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_remove_higher_`
`space_dimensions` (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ph`,
`ppl_dimension_type d`) [`related`]
- 10.122.2.67 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_remove_space_dimensions`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t ph`, `ppl_dimension_type ds[ ]`,
`size_t n`) [`related`]
- 10.122.2.68 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_simplify_using_`
`context_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_int32_t_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t y`) [`related`]
- 10.122.2.69 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_size` (`ppl_`
`const_Pointset_Powerset_Octagonal_Shape_int32_t_t ps`, `size_t * sz`)
 [`related`]
- 10.122.2.70 `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_space_dimension`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t_t ph`, `ppl_dimension_type * m`) [`related`]

- 10.122.2.71** `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t - strictly_contains_Pointset_Powerset_Octagonal_Shape_int32_t (ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t y)` **[related]**
- 10.122.2.72** `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_time_elapse_assign (ppl_Pointset_Powerset_Octagonal_Shape_int32_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t y)` **[related]**
- 10.122.2.73** `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_topological_closure_assign (ppl_Pointset_Powerset_Octagonal_Shape_int32_t ph)` **[related]**
- 10.122.2.74** `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_total_memory_in_bytes (ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t ps, size_t * sz)` **[related]**
- 10.122.2.75** `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_unconstrain_space_dimension (ppl_Pointset_Powerset_Octagonal_Shape_int32_t ph, ppl_dimension_type var)` **[related]**
- 10.122.2.76** `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_unconstrain_space_dimensions (ppl_Pointset_Powerset_Octagonal_Shape_int32_t ph, ppl_dimension_type ds[], size_t n)` **[related]**
- 10.122.2.77** `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_upper_bound_assign (ppl_Pointset_Powerset_Octagonal_Shape_int32_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t y)` **[related]**
- 10.122.2.78** `int ppl_Pointset_Powerset_Octagonal_Shape_int32_t_upper_bound_assign_if_exact (ppl_Pointset_Powerset_Octagonal_Shape_int32_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int32_t y)` **[related]**

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.123 `ppl_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Octagonal_Shape_int64_t_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_t *pit`)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_from_const_iterator` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_t *px`, `ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_t y`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_begin` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ps`, `ppl_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_end` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ps`, `ppl_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_equal_test` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_t x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_t y`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_increment` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_decrement` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_dereference` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_t ps`, `ppl_const_Octagonal_Shape_int64_t_t *d`)
- `int ppl_delete_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_t psit`)

10.123.1 Detailed Description

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Octagonal_Shape_int64_t_tag](#).

10.123.2 Friends And Related Function Documentation

- 10.123.2.1** `int ppl_delete_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_t psit`)
[related]

- 10.123.2.2** `int ppl_new_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_t * pit`)
 [related]
- 10.123.2.3** `int ppl_new_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_from_-`
`const_iterator` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_t`
`* px`, `ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_t y`)
 [related]
- 10.123.2.4** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_begin`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ps`,
`ppl_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_t psit`) [related]
- 10.123.2.5** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_decrement`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_t psit`) [related]
- 10.123.2.6** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_dereference`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_t ps`,
`ppl_const_Octagonal_Shape_int64_t_t * d`) [related]
- 10.123.2.7** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_end`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ps`,
`ppl_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_t psit`) [related]
- 10.123.2.8** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_equal_test`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_t y`)
 [related]
- 10.123.2.9** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_increment`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t_const_iterator_t psit`) [related]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.124 `ppl_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Octagonal_Shape_int64_t_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- [int ppl_new_Pointset_Powerset_Octagonal_Shape_int64_t_iterator](#) (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_t *pit`)
- [int ppl_new_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_from_iterator](#) (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_t *px`, `ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_t y`)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_begin](#) (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t ps`, `ppl_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_t psit`)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_end](#) (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t ps`, `ppl_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_t psit`)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_equal_test](#) (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_t x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_t y`)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_increment](#) (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_t psit`)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_decrement](#) (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_t psit`)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_dereference](#) (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_t ps`, `ppl_const_Octagonal_Shape_int64_t *d`)
- [int ppl_delete_Pointset_Powerset_Octagonal_Shape_int64_t_iterator](#) (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_t psit`)

10.124.1 Detailed Description

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Octagonal_Shape_int64_t_tag](#).

10.124.2 Friends And Related Function Documentation

10.124.2.1 `int ppl_delete_Pointset_Powerset_Octagonal_Shape_int64_t_iterator`
(`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_t psit`) [**related**]

10.124.2.2 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int64_t_iterator`
(`ppl_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_t *pit`) [**related**]

10.124.2.3 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_from_iterator`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_t * px`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_t y`) [**related**]

10.124.2.4 `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_-`
`begin` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ps`,
`ppl_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_t psit`) [**related**]

10.124.2.5 `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_decrement`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_t psit`) [**related**]

10.124.2.6 `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_dereference`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_t ps`,
`ppl_const_Octagonal_Shape_int64_t_t * d`) [**related**]

10.124.2.7 `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_-`
`end` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ps`,
`ppl_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_t psit`) [**related**]

10.124.2.8 `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_equal_test`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_t y`) [**related**]

10.124.2.9 `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_increment`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_t psit`) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.125 `ppl_Pointset_Powerset_Octagonal_Shape_int64_t_tag` Interface Reference

Types and functions for [ppl_Pointset_Powerset_Octagonal_Shape_int64_t_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Pointset_Powerset_Octagonal_Shape_int64_t` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t` ph)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_int64_t_from_space_dimension` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t` *pph, `ppl_dimension_type` d, `int` empty)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_int64_t_from_Pointset_Powerset_Octagonal_Shape_int64_t` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t` *pph, `ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t` ph)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_int64_t_from_Octagonal_Shape_int64_t` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t` *pph, `ppl_const_Octagonal_Shape_int64_t` ph)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_int64_t_from_Pointset_Powerset_Octagonal_Shape_int64_t_with_complexity` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t` *pph, `ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t` ph, `int` complexity)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_int64_t_from_Octagonal_Shape_int64_t_with_complexity` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t` *pph, `ppl_const_Octagonal_Shape_int64_t` ph, `int` complexity)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_int64_t_from_Constraint_System` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t` *pph, `ppl_const_Constraint_System_t` cs)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_int64_t_from_Congruence_System` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t` *pph, `ppl_const_Congruence_System_t` cs)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_space_dimension` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t` ph, `ppl_dimension_type` *m)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_affine_dimension` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t` ph, `ppl_dimension_type` *m)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_relation_with_Constraint` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t` ph, `ppl_const_Constraint_t` c)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_relation_with_Generator` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t` ph, `ppl_const_Generator_t` c)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_relation_with_Congruence` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t` ph, `ppl_const_Congruence_t` c)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_is_empty` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_is_universe` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_is_bounded` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_contains_integer_point` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_is_topologically_closed` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_is_discrete` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_topological_closure_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_pairwise_reduce` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_omega_reduce` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t` ph)

- int [ppl_Pointset_Powerset_Octagonal_Shape_int64_t_bounds_from_above](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int64_t_bounds_from_below](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int64_t_maximize](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int64_t_minimize](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int64_t_maximize_with_point](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int64_t_minimize_with_point](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int64_t_contains_Pointset_Powerset_Octagonal_Shape_int64_t](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int64_t_strictly_contains_Pointset_Powerset_Octagonal_Shape_int64_t](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int64_t_is_disjoint_from_Pointset_Powerset_Octagonal_Shape_int64_t](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int64_t_geometrically_covers_Pointset_Powerset_Octagonal_Shape_int64_t](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int64_t_geometrically_equals_Pointset_Powerset_Octagonal_Shape_int64_t](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int64_t_equals_Pointset_Powerset_Octagonal_Shape_int64_t](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int64_t_OK](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ph)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int64_t_add_constraint](#) (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int64_t_add_congruence](#) (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int64_t_add_constraints](#) (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int64_t_add_congruences](#) (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int64_t_refine_with_constraint](#) (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int64_t_refine_with_congruence](#) (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int64_t_refine_with_constraints](#) (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int64_t_refine_with_congruences](#) (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, ppl_const_Congruence_System_t cs)

- int `ppl_Pointset_Powerset_Octagonal_Shape_int64_t_intersection_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t` x, `ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t` y)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int64_t_upper_bound_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t` x, `ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t` y)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int64_t_difference_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t` x, `ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t` y)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int64_t_concatenate_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t` x, `ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t` y)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int64_t_time_elapse_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t` x, `ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t` y)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int64_t_upper_bound_assign_if_exact` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t` x, `ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t` y)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int64_t_simplify_using_context_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t` x, `ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t` y)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int64_t_constrains` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t` ph, `ppl_dimension_type` var)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int64_t_unconstrain_space_dimension` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t` ph, `ppl_dimension_type` var)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int64_t_unconstrain_space_dimensions` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t` ph, `ppl_dimension_type` ds[], `size_t` n)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int64_t_affine_image` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t` ph, `ppl_dimension_type` var, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int64_t_affine_preimage` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t` ph, `ppl_dimension_type` var, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int64_t_bounded_affine_image` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t` ph, `ppl_dimension_type` var, `ppl_const_Linear_Expression_t` lb, `ppl_const_Linear_Expression_t` ub, `ppl_const_Coefficient_t` d)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int64_t_bounded_affine_preimage` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t` ph, `ppl_dimension_type` var, `ppl_const_Linear_Expression_t` lb, `ppl_const_Linear_Expression_t` ub, `ppl_const_Coefficient_t` d)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int64_t_generalized_affine_image` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t` ph, `ppl_dimension_type` var, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int64_t_generalized_affine_preimage` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t` ph, `ppl_dimension_type` var, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int64_t_generalized_affine_image_lhs_rhs` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t` ph, `ppl_const_Linear_Expression_t` lhs, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` rhs)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int64_t_generalized_affine_preimage_lhs_rhs` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t` ph, `ppl_const_Linear_Expression_t` lhs, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` rhs)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int64_t_add_space_dimensions_and_embed` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t` ph, `ppl_dimension_type` d)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int64_t_add_space_dimensions_and_project` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t` ph, `ppl_dimension_type` d)

- [int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_remove_space_dimensions](#) (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, [ppl_dimension_type](#) ds[], size_t n)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_remove_higher_space_dimensions](#) (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, [ppl_dimension_type](#) d)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_expand_space_dimension](#) (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_fold_space_dimensions](#) (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_map_space_dimensions](#) (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, [ppl_dimension_type](#) maps[], size_t n)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_drop_some_non_integer_points](#) (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, int complexity)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_drop_some_non_integer_points_2](#) (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_external_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ps, size_t *sz)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_total_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ps, size_t *sz)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_size](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ps, size_t *sz)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_add_disjunct](#) (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ps, ppl_const_Octagonal_Shape_int64_t_t d)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_drop_disjunct](#) (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ps, ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_t cit, ppl_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_t it)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_drop_disjuncts](#) (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ps, ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_t first, ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_iterator_t last)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_BHZ03_H79_BHMZ05_widening_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t y)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_BGP99_BHMZ05_extrapolation_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t y, int disjuncts)

10.125.1 Detailed Description

Types and functions for [ppl_Pointset_Powerset_Octagonal_Shape_int64_t_tag](#).

10.125.2 Friends And Related Function Documentation

- 10.125.2.1** [int ppl_delete_Pointset_Powerset_Octagonal_Shape_int64_t](#)
 (ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ph) [[related](#)]

- 10.125.2.2 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int64_t_from_Congruence_System (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t * pph, ppl_const_Congruence_System_t cs)` [`related`]
- 10.125.2.3 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int64_t_from_Constraint_System (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t * pph, ppl_const_Constraint_System_t cs)` [`related`]
- 10.125.2.4 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int64_t_from_Octagonal_Shape_int64_t (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t * pph, ppl_const_Octagonal_Shape_int64_t_t ph)` [`related`]
- 10.125.2.5 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int64_t_from_Octagonal_Shape_int64_t_with_complexity (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t * pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)` [`related`]
- 10.125.2.6 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int64_t_from_Pointset_Powerset_Octagonal_Shape_int64_t (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t * pph, ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ph)` [`related`]
- 10.125.2.7 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int64_t_from_Pointset_Powerset_Octagonal_Shape_int64_t_with_complexity (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t * pph, ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, int complexity)` [`related`]
- 10.125.2.8 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int64_t_from_space_dimension (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t * pph, ppl_dimension_type d, int empty)` [`related`]
- 10.125.2.9 `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_add_congruence (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, ppl_const_Congruence_t c)` [`related`]

- 10.125.2.10 `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_add_congruences (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, ppl_const_Congruence_System_t cs)` [**related**]
- 10.125.2.11 `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_add_constraint (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, ppl_const_Constraint_t c)` [**related**]
- 10.125.2.12 `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_add_constraints (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, ppl_const_Constraint_System_t cs)` [**related**]
- 10.125.2.13 `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_add_disjunct (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ps, ppl_const_Octagonal_Shape_int64_t_t d)` [**related**]
- 10.125.2.14 `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_add_space_dimensions_and_embed (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, ppl_dimension_type d)` [**related**]
- 10.125.2.15 `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_add_space_dimensions_and_project (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, ppl_dimension_type d)` [**related**]
- 10.125.2.16 `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_affine_dimension (ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, ppl_dimension_type *m)` [**related**]
- 10.125.2.17 `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_affine_image (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]

- 10.125.2.18 int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_affine_preimage
(ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t *ph*, ppl_dimension_type *var*,
ppl_const_Linear_Expression_t *le*, ppl_const_Coefficient_t *d*) [**related**]
- 10.125.2.19 int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_BGP99_BHMZ05_-
extrapolation_assign (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t *x*,
ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t *y*, int *disjuncts*)
[**related**]
- 10.125.2.20 int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_BHZ03_H79_BHMZ05_-
widening_assign (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t *x*,
ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t *y*) [**related**]
- 10.125.2.21 int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_bounded_affine_image
(ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t *ph*, ppl_dimension_type
var, ppl_const_Linear_Expression_t *lb*, ppl_const_Linear_Expression_t *ub*,
ppl_const_Coefficient_t *d*) [**related**]
- 10.125.2.22 int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_bounded_affine_preimage
(ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t *ph*, ppl_dimension_type
var, ppl_const_Linear_Expression_t *lb*, ppl_const_Linear_Expression_t *ub*,
ppl_const_Coefficient_t *d*) [**related**]
- 10.125.2.23 int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_bounds_from_above
(ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t *ph*,
ppl_const_Linear_Expression_t *le*) [**related**]
- 10.125.2.24 int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_bounds_from_below
(ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t *ph*,
ppl_const_Linear_Expression_t *le*) [**related**]

- 10.125.2.25** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_concatenate - assign (ppl_Pointset_Powerset_Octagonal_Shape_int64_t t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t t y)` `[related]`
- 10.125.2.26** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_constrains (ppl_Pointset_Powerset_Octagonal_Shape_int64_t t ph, ppl_dimension_type var)` `[related]`
- 10.125.2.27** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_contains_integer_point (ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t t ph)` `[related]`
- 10.125.2.28** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_contains_Pointset_Powerset_Octagonal_Shape_int64_t (ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t t y)` `[related]`
- 10.125.2.29** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_difference - assign (ppl_Pointset_Powerset_Octagonal_Shape_int64_t t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t t y)` `[related]`
- 10.125.2.30** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_drop_disjunct (ppl_Pointset_Powerset_Octagonal_Shape_int64_t t ps, ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_iterator t cit, ppl_Pointset_Powerset_Octagonal_Shape_int64_t_iterator t it)` `[related]`
- 10.125.2.31** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_drop_disjuncts (ppl_Pointset_Powerset_Octagonal_Shape_int64_t t ps, ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_iterator t first, ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_iterator t last)` `[related]`
- 10.125.2.32** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_drop_some_non_integer_points (ppl_Pointset_Powerset_Octagonal_Shape_int64_t t ph, int complexity)` `[related]`

- 10.125.2.33** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_drop_some_non_integer_points_2 (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, ppl_dimension_type ds[], size_t n, int complexity)` [related]
- 10.125.2.34** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_equals_Pointset_Powerset_Octagonal_Shape_int64_t (ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t y)` [related]
- 10.125.2.35** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_expand_space_dimension (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, ppl_dimension_type d, ppl_dimension_type m)` [related]
- 10.125.2.36** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_external_memory_in_bytes (ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ps, size_t * sz)` [related]
- 10.125.2.37** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_fold_space_dimensions (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [related]
- 10.125.2.38** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_generalized_affine_image (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [related]
- 10.125.2.39** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_generalized_affine_image_lhs_rhs (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` [related]

- 10.125.2.40 `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_generalized_affine_preimage`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph`, `ppl_dimension_type var`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.125.2.41 `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_generalized_affine_`
`preimage_lhs_rhs` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph`,
`ppl_const_Linear_Expression_t lhs`, `enum ppl_enum_Constraint_Type relsym`,
`ppl_const_Linear_Expression_t rhs`) [`related`]
- 10.125.2.42 `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_`
`geometrically_covers_Pointset_Powerset_Octagonal_Shape_int64_t`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t y`) [`related`]
- 10.125.2.43 `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_`
`geometrically_equals_Pointset_Powerset_Octagonal_Shape_int64_t`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t y`) [`related`]
- 10.125.2.44 `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_intersection_`
`assign` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t y`) [`related`]
- 10.125.2.45 `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_is_bounded`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ph`) [`related`]
- 10.125.2.46 `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_is_discrete`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ph`) [`related`]

- 10.125.2.47** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_is_disjoint_from_Pointset_Powerset_Octagonal_Shape_int64_t (ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t y)` `[related]`
- 10.125.2.48** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_is_empty (ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ph)` `[related]`
- 10.125.2.49** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_is_topologically_closed (ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ph)` `[related]`
- 10.125.2.50** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_is_universe (ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ph)` `[related]`
- 10.125.2.51** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_map_space_dimensions (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, ppl_dimension_type maps[], size_t n)` `[related]`
- 10.125.2.52** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_maximize (ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` `[related]`
- 10.125.2.53** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_maximize_with_point (ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` `[related]`
- 10.125.2.54** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_minimize (ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` `[related]`

- 10.125.2.55** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_minimize_with_point`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ph`,
`ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`,
`int * poptimum`, `ppl_Generator_t point`) [`related`]
- 10.125.2.56** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_OK`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ph`) [`related`]
- 10.125.2.57** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_omega_reduce`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph`) [`related`]
- 10.125.2.58** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_pairwise_reduce`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph`) [`related`]
- 10.125.2.59** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_refine_with_congruence`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph`, `ppl_const_Congruence_t c`)
 [`related`]
- 10.125.2.60** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_refine_with_congruences` (`ppl_-`
`Pointset_Powerset_Octagonal_Shape_int64_t_t ph`, `ppl_const_Congruence_System_t cs`) [`related`]
- 10.125.2.61** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_refine_with_constraint`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph`, `ppl_const_Constraint_t c`)
 [`related`]
- 10.125.2.62** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_refine_with_constraints` (`ppl_-`
`Pointset_Powerset_Octagonal_Shape_int64_t_t ph`, `ppl_const_Constraint_System_t cs`) [`related`]

- 10.125.2.63 `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_relation_with_Congruence`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ph`,
`ppl_const_Congruence_t c`) [`related`]
- 10.125.2.64 `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_relation_with_Constraint`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ph`,
`ppl_const_Constraint_t c`) [`related`]
- 10.125.2.65 `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_relation_with_Generator`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ph`,
`ppl_const_Generator_t c`) [`related`]
- 10.125.2.66 `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_remove_higher_`
`space_dimensions` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph`,
`ppl_dimension_type d`) [`related`]
- 10.125.2.67 `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_remove_space_dimensions`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph`, `ppl_dimension_type ds[ ]`,
`size_t n`) [`related`]
- 10.125.2.68 `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_simplify_using_`
`context_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t y`) [`related`]
- 10.125.2.69 `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_size` (`ppl_`
`const_Pointset_Powerset_Octagonal_Shape_int64_t_t ps`, `size_t * sz`)
 [`related`]
- 10.125.2.70 `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_space_dimension`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ph`, `ppl_dimension_type * m`) [`related`]

- 10.125.2.71** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t - strictly_contains_Pointset_Powerset_Octagonal_Shape_int64_t (ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t y)` **[related]**
- 10.125.2.72** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_time_elapse_assign (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t y)` **[related]**
- 10.125.2.73** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_topological_closure_assign (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph)` **[related]**
- 10.125.2.74** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_total_memory_in_bytes (ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t ps, size_t * sz)` **[related]**
- 10.125.2.75** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_unconstrain_space_dimension (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, ppl_dimension_type var)` **[related]**
- 10.125.2.76** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_unconstrain_space_dimensions (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t ph, ppl_dimension_type ds[], size_t n)` **[related]**
- 10.125.2.77** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_upper_bound_assign (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t y)` **[related]**
- 10.125.2.78** `int ppl_Pointset_Powerset_Octagonal_Shape_int64_t_upper_bound_assign_if_exact (ppl_Pointset_Powerset_Octagonal_Shape_int64_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int64_t_t y)` **[related]**

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.126 `ppl_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Octagonal_Shape_int8_t_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- int [ppl_new_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator](#) (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_t` *pit)
- int [ppl_new_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_from_const_iterator](#) (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_t` *px, `ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_t` y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_begin](#) (`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t` ps, `ppl_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_t` psit)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_end](#) (`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t` ps, `ppl_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_t` psit)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_equal_test](#) (`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_t` x, `ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_t` y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_increment](#) (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_t` psit)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_decrement](#) (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_t` psit)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_dereference](#) (`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_t` ps, `ppl_const_Octagonal_Shape_int8_t` *d)
- int [ppl_delete_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator](#) (`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_t` psit)

10.126.1 Detailed Description

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Octagonal_Shape_int8_t_tag](#).

10.126.2 Friends And Related Function Documentation

- #### 10.126.2.1 `int ppl_delete_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_t` psit) [related]

10.126.2.2 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_t * pit`) [**related**]

10.126.2.3 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_from_-`
`const_iterator` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_t`
`* px`, `ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_t y`)
 [**related**]

10.126.2.4 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_begin`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t ps`,
`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_t psit`) [**related**]

10.126.2.5 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_decrement`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_t psit`) [**related**]

10.126.2.6 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_dereference`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_t ps`,
`ppl_const_Octagonal_Shape_int8_t_t * d`) [**related**]

10.126.2.7 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_end`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t ps`,
`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_t psit`) [**related**]

10.126.2.8 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_equal_test`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_t y`)
 [**related**]

10.126.2.9 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_increment`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_const_iterator_t psit`) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.127 `ppl_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Octagonal_Shape_int8_t_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- [int ppl_new_Pointset_Powerset_Octagonal_Shape_int8_t_iterator](#) ([ppl_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_t](#) *pit)
- [int ppl_new_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_from_iterator](#) ([ppl_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_t](#) *px, [ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_t](#) y)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_begin](#) ([ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t](#) ps, [ppl_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_t](#) psit)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_end](#) ([ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t](#) ps, [ppl_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_t](#) psit)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_equal_test](#) ([ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_t](#) x, [ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_t](#) y)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_increment](#) ([ppl_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_t](#) psit)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_decrement](#) ([ppl_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_t](#) psit)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_dereference](#) ([ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_t](#) ps, [ppl_const_Octagonal_Shape_int8_t_t](#) *d)
- [int ppl_delete_Pointset_Powerset_Octagonal_Shape_int8_t_iterator](#) ([ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_t](#) psit)

10.127.1 Detailed Description

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Octagonal_Shape_int8_t_tag](#).

10.127.2 Friends And Related Function Documentation

10.127.2.1 [int ppl_delete_Pointset_Powerset_Octagonal_Shape_int8_t_iterator](#)
([ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_t](#) psit) [[related](#)]

10.127.2.2 [int ppl_new_Pointset_Powerset_Octagonal_Shape_int8_t_iterator](#)
([ppl_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_t](#) *pit) [[related](#)]

10.127.2.3 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_from_iterator`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_t * px`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_t y`) [**related**]

10.127.2.4 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_-`
`begin` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t ps`,
`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_t psit`) [**related**]

10.127.2.5 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_decrement`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_t psit`) [**related**]

10.127.2.6 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_dereference`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_t ps`,
`ppl_const_Octagonal_Shape_int8_t_t * d`) [**related**]

10.127.2.7 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_end`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t ps`, `ppl_Pointset_Powerset_-`
`Octagonal_Shape_int8_t_iterator_t psit`) [**related**]

10.127.2.8 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_equal_test`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_t y`) [**related**]

10.127.2.9 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_increment`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_t psit`) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.128 `ppl_Pointset_Powerset_Octagonal_Shape_int8_t_tag` Interface Reference

Types and functions for `ppl_Pointset_Powerset_Octagonal_Shape_int8_t_tag`.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Pointset_Powerset_Octagonal_Shape_int8_t` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t` ph)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_int8_t_from_space_dimension` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t` *pph, `ppl_dimension_type` d, `int` empty)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_int8_t_from_Pointset_Powerset_Octagonal_Shape_int8_t` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t` *pph, `ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t` ph)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_int8_t_from_Octagonal_Shape_int8_t` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t` *pph, `ppl_const_Octagonal_Shape_int8_t_t` ph)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_int8_t_from_Pointset_Powerset_Octagonal_Shape_int8_t_with_complexity` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t` *pph, `ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t` ph, `int` complexity)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_int8_t_from_Octagonal_Shape_int8_t_with_complexity` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t` *pph, `ppl_const_Octagonal_Shape_int8_t_t` ph, `int` complexity)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_int8_t_from_Constraint_System` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t` *pph, `ppl_const_Constraint_System_t` cs)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_int8_t_from_Congruence_System` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t` *pph, `ppl_const_Congruence_System_t` cs)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_space_dimension` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t` ph, `ppl_dimension_type` *m)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_affine_dimension` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t` ph, `ppl_dimension_type` *m)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_relation_with_Constraint` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t` ph, `ppl_const_Constraint_t` c)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_relation_with_Generator` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t` ph, `ppl_const_Generator_t` c)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_relation_with_Congruence` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t` ph, `ppl_const_Congruence_t` c)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_is_empty` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_is_universe` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_is_bounded` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_contains_integer_point` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_is_topologically_closed` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_is_discrete` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_topological_closure_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_pairwise_reduce` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_omega_reduce` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t` ph)

- [int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_bounds_from_above](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t ph, ppl_const_Linear_Expression_t le)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_bounds_from_below](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t ph, ppl_const_Linear_Expression_t le)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_maximize](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_minimize](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_maximize_with_point](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_minimize_with_point](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_contains_Pointset_Powerset_Octagonal_Shape_int8_t](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t y)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_strictly_contains_Pointset_Powerset_Octagonal_Shape_int8_t](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t y)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_is_disjoint_from_Pointset_Powerset_Octagonal_Shape_int8_t](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t y)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_geometrically_covers_Pointset_Powerset_Octagonal_Shape_int8_t](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t y)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_geometrically_equals_Pointset_Powerset_Octagonal_Shape_int8_t](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t y)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_equals_Pointset_Powerset_Octagonal_Shape_int8_t](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t y)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_OK](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t ph)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_add_constraint](#) (ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t ph, ppl_const_Constraint_t c)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_add_congruence](#) (ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t ph, ppl_const_Congruence_t c)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_add_constraints](#) (ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t ph, ppl_const_Constraint_System_t cs)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_add_congruences](#) (ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t ph, ppl_const_Congruence_System_t cs)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_refine_with_constraint](#) (ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t ph, ppl_const_Constraint_t c)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_refine_with_congruence](#) (ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t ph, ppl_const_Congruence_t c)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_refine_with_constraints](#) (ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t ph, ppl_const_Constraint_System_t cs)
- [int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_refine_with_congruences](#) (ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t ph, ppl_const_Congruence_System_t cs)

- int `ppl_Pointset_Powerset_Octagonal_Shape_int8_t_intersection_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t` x, `ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t` y)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int8_t_upper_bound_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t` x, `ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t` y)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int8_t_difference_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t` x, `ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t` y)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int8_t_concatenate_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t` x, `ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t` y)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int8_t_time_elapse_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t` x, `ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t` y)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int8_t_upper_bound_assign_if_exact` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t` x, `ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t` y)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int8_t_simplify_using_context_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t` x, `ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t` y)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int8_t_constrains` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t` ph, `ppl_dimension_type` var)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int8_t_unconstrain_space_dimension` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t` ph, `ppl_dimension_type` var)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int8_t_unconstrain_space_dimensions` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t` ph, `ppl_dimension_type` ds[], size_t n)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int8_t_affine_image` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t` ph, `ppl_dimension_type` var, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int8_t_affine_preimage` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t` ph, `ppl_dimension_type` var, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int8_t_bounded_affine_image` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t` ph, `ppl_dimension_type` var, `ppl_const_Linear_Expression_t` lb, `ppl_const_Linear_Expression_t` ub, `ppl_const_Coefficient_t` d)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int8_t_bounded_affine_preimage` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t` ph, `ppl_dimension_type` var, `ppl_const_Linear_Expression_t` lb, `ppl_const_Linear_Expression_t` ub, `ppl_const_Coefficient_t` d)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int8_t_generalized_affine_image` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t` ph, `ppl_dimension_type` var, enum `ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int8_t_generalized_affine_preimage` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t` ph, `ppl_dimension_type` var, enum `ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int8_t_generalized_affine_image_lhs_rhs` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t` ph, `ppl_const_Linear_Expression_t` lhs, enum `ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` rhs)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int8_t_generalized_affine_preimage_lhs_rhs` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t` ph, `ppl_const_Linear_Expression_t` lhs, enum `ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` rhs)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int8_t_add_space_dimensions_and_embed` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t` ph, `ppl_dimension_type` d)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int8_t_add_space_dimensions_and_project` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t` ph, `ppl_dimension_type` d)
- int `ppl_Pointset_Powerset_Octagonal_Shape_int8_t_remove_space_dimensions` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t` ph, `ppl_dimension_type` ds[], size_t n)

- int [ppl_Pointset_Powerset_Octagonal_Shape_int8_t_remove_higher_space_dimensions](#) (ppl_Pointset_Powerset_Octagonal_Shape_int8_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int8_t_expand_space_dimension](#) (ppl_Pointset_Powerset_Octagonal_Shape_int8_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int8_t_fold_space_dimensions](#) (ppl_Pointset_Powerset_Octagonal_Shape_int8_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int8_t_map_space_dimensions](#) (ppl_Pointset_Powerset_Octagonal_Shape_int8_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int8_t_drop_some_non_integer_points](#) (ppl_Pointset_Powerset_Octagonal_Shape_int8_t ph, int complexity)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int8_t_drop_some_non_integer_points_2](#) (ppl_Pointset_Powerset_Octagonal_Shape_int8_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int8_t_external_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int8_t_total_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int8_t_size](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int8_t_add_disjunct](#) (ppl_Pointset_Powerset_Octagonal_Shape_int8_t ps, ppl_const_Octagonal_Shape_int8_t d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int8_t_drop_disjunct](#) (ppl_Pointset_Powerset_Octagonal_Shape_int8_t ps, ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_t cit, ppl_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_t it)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int8_t_drop_disjuncts](#) (ppl_Pointset_Powerset_Octagonal_Shape_int8_t ps, ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_t first, ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_t last)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int8_t_BHZ03_H79_BHMZ05_widening_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_int8_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_int8_t_BGP99_BHMZ05_extrapolation_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_int8_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t y, int disjuncts)

10.128.1 Detailed Description

Types and functions for [ppl_Pointset_Powerset_Octagonal_Shape_int8_t_tag](#).

10.128.2 Friends And Related Function Documentation

10.128.2.1 int [ppl_delete_Pointset_Powerset_Octagonal_Shape_int8_t](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t ph) [**related**]

10.128.2.2 int [ppl_new_Pointset_Powerset_Octagonal_Shape_int8_t_from_Congruence_System](#) (ppl_Pointset_Powerset_Octagonal_Shape_int8_t * pph, ppl_const_Congruence_System_t cs) [**related**]

- 10.128.2.3 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int8_t_from_Constraint_System (ppl_Pointset_Powerset_Octagonal_Shape_int8_t * pph, ppl_const_Constraint_System_t cs)` [`related`]
- 10.128.2.4 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int8_t_from_Octagonal_Shape_int8_t (ppl_Pointset_Powerset_Octagonal_Shape_int8_t * pph, ppl_const_Octagonal_Shape_int8_t_t ph)` [`related`]
- 10.128.2.5 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int8_t_from_Octagonal_Shape_int8_t_with_complexity (ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t * pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)` [`related`]
- 10.128.2.6 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int8_t_from_Pointset_Powerset_Octagonal_Shape_int8_t (ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t * pph, ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t ph)` [`related`]
- 10.128.2.7 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int8_t_from_Pointset_Powerset_Octagonal_Shape_int8_t_with_complexity (ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t * pph, ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t ph, int complexity)` [`related`]
- 10.128.2.8 `int ppl_new_Pointset_Powerset_Octagonal_Shape_int8_t_from_space_dimension (ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t * pph, ppl_dimension_type d, int empty)` [`related`]
- 10.128.2.9 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_add_congruence (ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t ph, ppl_const_Congruence_t c)` [`related`]
- 10.128.2.10 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_add_congruences (ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t ph, ppl_const_Congruence_System_t cs)` [`related`]

- 10.128.2.11 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_add_constraint`
(`ppl_Pointset_Powerset_Octagonal_Shape_int8_t t ph`, `ppl_const_Constraint_t c`)
[related]
- 10.128.2.12 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_add_constraints` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t t ph`, `ppl_const_Constraint_System_t cs`)
[related]
- 10.128.2.13 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_add_disjunct` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t t ps`, `ppl_const_Octagonal_Shape_int8_t t d`)
[related]
- 10.128.2.14 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_add_space_dimensions_and_embed` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t t ph`, `ppl_dimension_type d`)
[related]
- 10.128.2.15 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_add_space_dimensions_and_project` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t t ph`, `ppl_dimension_type d`) [related]
- 10.128.2.16 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_affine_dimension`
(`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t t ph`, `ppl_dimension_type * m`) [related]
- 10.128.2.17 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_affine_image`
(`ppl_Pointset_Powerset_Octagonal_Shape_int8_t t ph`, `ppl_dimension_type var`,
`ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`) [related]
- 10.128.2.18 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_affine_preimage`
(`ppl_Pointset_Powerset_Octagonal_Shape_int8_t t ph`, `ppl_dimension_type var`,
`ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`) [related]

- 10.128.2.19 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_BGP99_BHMZ05_-extrapolation_assign (ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t y, int disjuncts)` [**related**]
- 10.128.2.20 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_BHZ03_H79_BHMZ05_-widening_assign (ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t y)` [**related**]
- 10.128.2.21 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_bounded_affine_image (ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [**related**]
- 10.128.2.22 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_bounded_affine_preimage (ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [**related**]
- 10.128.2.23 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_bounds_from_above (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t ph, ppl_const_Linear_Expression_t le)` [**related**]
- 10.128.2.24 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_bounds_from_below (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t ph, ppl_const_Linear_Expression_t le)` [**related**]
- 10.128.2.25 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_concatenate_-assign (ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t y)` [**related**]

- 10.128.2.26 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_constrains`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t ph`, `ppl_dimension_type var`)
 [`related`]
- 10.128.2.27 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_contains_integer_point`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t ph`) [`related`]
- 10.128.2.28 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_contains_Pointset_Powerset_-`
`Octagonal_Shape_int8_t` (`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t y`) [`related`]
- 10.128.2.29 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_difference_-`
`assign` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t y`) [`related`]
- 10.128.2.30 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_drop_disjunct`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t ps`, `ppl_-`
`const_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_t cit`,
`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_t it`) [`related`]
- 10.128.2.31 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_drop_disjuncts`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t ps`, `ppl_-`
`const_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_t first`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_iterator_t last`) [`related`]
- 10.128.2.32 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_drop_some_non_integer_points`
 (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t ph`, `int complexity`) [`related`]
- 10.128.2.33 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_drop_some_non_integer_-`
`points_2` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t ph`, `ppl_dimension_type`
`ds[ ]`, `size_t n`, `int complexity`) [`related`]

- 10.128.2.34 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_equals_Pointset_Powerset_Octagonal_Shape_int8_t (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t y)` [`related`]
- 10.128.2.35 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_expand_space_dimension (ppl_Pointset_Powerset_Octagonal_Shape_int8_t ph, ppl_dimension_type d, ppl_dimension_type m)` [`related`]
- 10.128.2.36 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_external_memory_in_bytes (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t ps, size_t * sz)` [`related`]
- 10.128.2.37 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_fold_space_dimensions (ppl_Pointset_Powerset_Octagonal_Shape_int8_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [`related`]
- 10.128.2.38 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_generalized_affine_image (ppl_Pointset_Powerset_Octagonal_Shape_int8_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.128.2.39 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_generalized_affine_image_lhs_rhs (ppl_Pointset_Powerset_Octagonal_Shape_int8_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` [`related`]
- 10.128.2.40 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_generalized_affine_preimage (ppl_Pointset_Powerset_Octagonal_Shape_int8_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]

- 10.128.2.41 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_generalized_affine_-preimage_lhs_rhs (ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` `[related]`
- 10.128.2.42 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_geometrically_covers_Pointset_Powerset_Octagonal_Shape_int8_t (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t y)` `[related]`
- 10.128.2.43 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_geometrically_equals_Pointset_Powerset_Octagonal_Shape_int8_t (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t y)` `[related]`
- 10.128.2.44 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_intersection_assign (ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t y)` `[related]`
- 10.128.2.45 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_is_bounded (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t ph)` `[related]`
- 10.128.2.46 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_is_discrete (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t ph)` `[related]`
- 10.128.2.47 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_is_disjoint_from_Pointset_Powerset_Octagonal_Shape_int8_t (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t y)` `[related]`
- 10.128.2.48 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_is_empty (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t ph)` `[related]`

- 10.128.2.49** `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_is_topologically_closed (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t ph)` [**related**]
- 10.128.2.50** `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_is_universe (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t ph)` [**related**]
- 10.128.2.51** `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_map_space_dimensions (ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t ph, ppl_dimension_type maps[], size_t n)` [**related**]
- 10.128.2.52** `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_maximize (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [**related**]
- 10.128.2.53** `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_maximize_with_point (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` [**related**]
- 10.128.2.54** `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_minimize (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [**related**]
- 10.128.2.55** `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_minimize_with_point (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` [**related**]
- 10.128.2.56** `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_OK (ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t ph)` [**related**]

- 10.128.2.57 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_omega_reduce`
`(ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t ph)` [`related`]
- 10.128.2.58 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_pairwise_reduce`
`(ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t ph)` [`related`]
- 10.128.2.59 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_refine_with_congruence`
`(ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t ph, ppl_const_Congruence_t c)`
`[related]`
- 10.128.2.60 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_refine_with_congruences` (`ppl -`
`Pointset_Powerset_Octagonal_Shape_int8_t_t ph, ppl_const_Congruence_System_t`
`cs)` [`related`]
- 10.128.2.61 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_refine_with_constraint`
`(ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t ph, ppl_const_Constraint_t c)`
`[related]`
- 10.128.2.62 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_refine_with_constraints` (`ppl -`
`Pointset_Powerset_Octagonal_Shape_int8_t_t ph, ppl_const_Constraint_System_t cs)`
`[related]`
- 10.128.2.63 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_relation_with_Congruence`
`(ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t ph,`
`ppl_const_Congruence_t c)` [`related`]
- 10.128.2.64 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_relation_with_Constraint`
`(ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t ph, ppl_const_Constraint_t`
`c)` [`related`]

- 10.128.2.65 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_relation_with_Generator`
(`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t ph`, `ppl_const_Generator_t c`) [`related`]
- 10.128.2.66 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_remove_higher -`
`space_dimensions` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t ph`,
`ppl_dimension_type d`) [`related`]
- 10.128.2.67 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_remove_space_dimensions`
(`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t ph`, `ppl_dimension_type ds[ ]`,
`size_t n`) [`related`]
- 10.128.2.68 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_simplify_using -`
`context_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t y`) [`related`]
- 10.128.2.69 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_size` (`ppl -`
`const_Pointset_Powerset_Octagonal_Shape_int8_t_t ps`, `size_t * sz`)
[`related`]
- 10.128.2.70 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_space_dimension`
(`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t ph`, `ppl_dimension_type * m`) [`related`]
- 10.128.2.71 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_strictly_contains_Pointset -`
`Powerset_Octagonal_Shape_int8_t` (`ppl_const_Pointset_Powerset_Octagonal -`
`Shape_int8_t_t x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t y`)
[`related`]
- 10.128.2.72 `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_time_elapse -`
`assign` (`ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t y`) [`related`]

- 10.128.2.73** `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_topological_closure_assign`
`(ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t ph)` [**related**]
- 10.128.2.74** `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_total_memory_in_bytes`
`(ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t ps, size_t * sz)`
[related]
- 10.128.2.75** `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_unconstrain_space_dimension`
`(ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t ph, ppl_dimension_type var)`
[related]
- 10.128.2.76** `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_unconstrain_space_dimensions`
`(ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t ph, ppl_dimension_type ds[],`
`size_t n)` [**related**]
- 10.128.2.77** `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_upper_-`
`bound_assign (ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t x,`
`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t y)` [**related**]
- 10.128.2.78** `int ppl_Pointset_Powerset_Octagonal_Shape_int8_t_upper_bound_-`
`assign_if_exact (ppl_Pointset_Powerset_Octagonal_Shape_int8_t_t x,`
`ppl_const_Pointset_Powerset_Octagonal_Shape_int8_t_t y)` [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.129 ppl_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_-tag Interface Reference

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Octagonal_Shape_long_double_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator` (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_t *pit`)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_from_const_iterator` (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_t *px`, `ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_t y`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_begin` (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ps`, `ppl_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_end` (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ps`, `ppl_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_equal_test` (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_t x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_t y`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_increment` (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_decrement` (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_dereference` (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_t ps`, `ppl_const_Octagonal_Shape_long_double_t *d`)
- `int ppl_delete_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator` (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_t psit`)

10.129.1 Detailed Description

Types and functions for iterating on the disjuncts of a const `ppl_Pointset_Powerset_Octagonal_Shape_long_double_tag`.

10.129.2 Friends And Related Function Documentation

10.129.2.1 `int ppl_delete_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator` (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_t psit`)
[related]

10.129.2.2 `int ppl_new_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator` (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_t *pit`)
[related]

10.129.2.3 `int ppl_new_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_from_const_iterator` (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_t *px`, `ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_t y`)
[related]

- 10.129.2.4** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_begin`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ps`,
`ppl_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_t psit`)
 [related]
- 10.129.2.5** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_decrement`
 (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_t psit`)
 [related]
- 10.129.2.6** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_dereference`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_t ps`,
`ppl_const_Octagonal_Shape_long_double_t * d`) [related]
- 10.129.2.7** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_end`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ps`,
`ppl_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_t psit`)
 [related]
- 10.129.2.8** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_equal_test`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_t y`)
 [related]
- 10.129.2.9** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_increment`
 (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_const_iterator_t psit`)
 [related]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.130 `ppl_Pointset_Powerset_Octagonal_Shape_long_double_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Octagonal_Shape_long_double_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_Octagonal_Shape_long_double_iterator` (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_iterator_t *pit`)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_long_double_iterator_from_iterator` (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_iterator_t *px`, `ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_iterator_t y`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_iterator_begin` (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ps`, `ppl_Pointset_Powerset_Octagonal_Shape_long_double_iterator_t psit`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_iterator_end` (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ps`, `ppl_Pointset_Powerset_Octagonal_Shape_long_double_iterator_t psit`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_iterator_equal_test` (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_iterator_t x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_iterator_t y`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_iterator_increment` (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_iterator_t psit`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_iterator_decrement` (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_iterator_t psit`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_iterator_dereference` (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_iterator_t ps`, `ppl_const_Octagonal_Shape_long_double_t *d`)
- `int ppl_delete_Pointset_Powerset_Octagonal_Shape_long_double_iterator` (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_iterator_t psit`)

10.130.1 Detailed Description

Types and functions for iterating on the disjuncts of a `ppl_Pointset_Powerset_Octagonal_Shape_long_double_tag`.

10.130.2 Friends And Related Function Documentation

10.130.2.1 `int ppl_delete_Pointset_Powerset_Octagonal_Shape_long_double_iterator` (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_iterator_t psit`)
[related]

10.130.2.2 `int ppl_new_Pointset_Powerset_Octagonal_Shape_long_double_iterator` (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_iterator_t *pit`) [related]

- 10.130.2.3 `int ppl_new_Pointset_Powerset_Octagonal_Shape_long_double_iterator_from_iterator`
 (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_iterator_t * px`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_iterator_t y`)
 [related]
- 10.130.2.4 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_iterator_begin`
 (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ps`,
`ppl_Pointset_Powerset_Octagonal_Shape_long_double_iterator_t psit`) [related]
- 10.130.2.5 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_iterator_decrement`
 (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_iterator_t psit`) [related]
- 10.130.2.6 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_iterator_dereference`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_iterator_t ps`,
`ppl_const_Octagonal_Shape_long_double_t * d`) [related]
- 10.130.2.7 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_iterator_end`
 (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ps`,
`ppl_Pointset_Powerset_Octagonal_Shape_long_double_iterator_t psit`) [related]
- 10.130.2.8 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_iterator_equal_test`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_iterator_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_iterator_t y`)
 [related]
- 10.130.2.9 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_iterator_increment`
 (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_iterator_t psit`) [related]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.131 ppl_Pointset_Powerset_Octagonal_Shape_long_double_tag Interface Reference

Types and functions for `ppl_Pointset_Powerset_Octagonal_Shape_long_double_tag`.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Pointset_Powerset_Octagonal_Shape_long_double` (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t` ph)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_long_double_from_space_dimension` (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t` *pph, `ppl_dimension_type` d, `int` empty)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_long_double_from_Pointset_Powerset_Octagonal_Shape_long_double` (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t` *pph, `ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t` ph)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_long_double_from_Octagonal_Shape_long_double` (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t` *pph, `ppl_const_Octagonal_Shape_long_double_t` ph)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_long_double_from_Pointset_Powerset_Octagonal_Shape_long_double_with_complexity` (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t` *pph, `ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t` ph, `int` complexity)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_long_double_from_Octagonal_Shape_long_double_with_complexity` (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t` *pph, `ppl_const_Octagonal_Shape_long_double_t` ph, `int` complexity)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_long_double_from_Constraint_System` (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t` *pph, `ppl_const_Constraint_System_t` cs)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_long_double_from_Congruence_System` (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t` *pph, `ppl_const_Congruence_System_t` cs)
- `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_space_dimension` (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t` ph, `ppl_dimension_type` *m)
- `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_affine_dimension` (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t` ph, `ppl_dimension_type` *m)
- `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_relation_with_Constraint` (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t` ph, `ppl_const_Constraint_t` c)
- `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_relation_with_Generator` (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t` ph, `ppl_const_Generator_t` c)
- `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_relation_with_Congruence` (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t` ph, `ppl_const_Congruence_t` c)
- `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_is_empty` (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_is_universe` (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_is_bounded` (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_contains_integer_point` (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t` ph)
- `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_is_topologically_closed` (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t` ph)

- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_is_discrete](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ph)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_topological_closure_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_pairwise_reduce](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_omega_reduce](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_bounds_from_above](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_const_Linear_Expression_t le)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_bounds_from_below](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_const_Linear_Expression_t le)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_maximize](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_minimize](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_maximize_with_point](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_minimize_with_point](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_contains_Pointset_Powerset_Octagonal_Shape_long_double](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t y)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_strictly_contains_Pointset_Powerset_Octagonal_Shape_long_double](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t y)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_is_disjoint_from_Pointset_Powerset_Octagonal_Shape_long_double](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t y)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_geometrically_covers_Pointset_Powerset_Octagonal_Shape_long_double](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t y)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_geometrically_equals_Pointset_Powerset_Octagonal_Shape_long_double](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t y)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_equals_Pointset_Powerset_Octagonal_Shape_long_double](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t y)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_OK](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ph)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_add_constraint](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_const_Constraint_t c)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_add_congruence](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_const_Congruence_t c)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_add_constraints](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_const_Constraint_System_t cs)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_add_congruences](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_const_Congruence_System_t cs)

- int [ppl_Pointset_Powerset_Octagonal_Shape_long_double_refine_with_constraint](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Octagonal_Shape_long_double_refine_with_congruence](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Octagonal_Shape_long_double_refine_with_constraints](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_Octagonal_Shape_long_double_refine_with_congruences](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_Octagonal_Shape_long_double_intersection_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_long_double_upper_bound_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_long_double_difference_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_long_double_concatenate_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_long_double_time_elapse_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_long_double_upper_bound_assign_if_exact](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_long_double_simplify_using_context_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_long_double_constrains](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_dimension_type var)
- int [ppl_Pointset_Powerset_Octagonal_Shape_long_double_unconstrain_space_dimension](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_dimension_type var)
- int [ppl_Pointset_Powerset_Octagonal_Shape_long_double_unconstrain_space_dimensions](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_dimension_type ds[], size_t n)
- int [ppl_Pointset_Powerset_Octagonal_Shape_long_double_affine_image](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_long_double_affine_preimage](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_long_double_bounded_affine_image](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_long_double_bounded_affine_preimage](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_long_double_generalized_affine_image](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_dimension_type var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_long_double_generalized_affine_preimage](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_dimension_type var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)

- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_generalized_affine_image_lhs_rhs](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_generalized_affine_preimage_lhs_rhs](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_add_space_dimensions_and_embed](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, [ppl_dimension_type](#) d)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_add_space_dimensions_and_project](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, [ppl_dimension_type](#) d)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_remove_space_dimensions](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, [ppl_dimension_type](#) ds[], size_t n)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_remove_higher_space_dimensions](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, [ppl_dimension_type](#) d)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_expand_space_dimension](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_fold_space_dimensions](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_map_space_dimensions](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, [ppl_dimension_type](#) maps[], size_t n)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_drop_some_non_integer_points](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, int complexity)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_drop_some_non_integer_points_2](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_external_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ps, size_t *sz)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_total_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ps, size_t *sz)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_size](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ps, size_t *sz)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_add_disjunct](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ps, ppl_const_Octagonal_Shape_long_double_t d)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_drop_disjunct](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ps, ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_iterator_t cit, ppl_Pointset_Powerset_Octagonal_Shape_long_double_iterator_t it)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_drop_disjuncts](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ps, ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_iterator_t first, ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_iterator_t last)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_BHZ03_H79_BHMZ05_widening_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t y)
- [int ppl_Pointset_Powerset_Octagonal_Shape_long_double_BGP99_BHMZ05_extrapolation_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t y, int disjuncts)

10.131.1 Detailed Description

Types and functions for [ppl_Pointset_Powerset_Octagonal_Shape_long_double_tag](#).

10.131.2 Friends And Related Function Documentation

- 10.131.2.1** `int ppl_delete_Pointset_Powerset_Octagonal_Shape_long_double
(ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ph)` [**related**]
- 10.131.2.2** `int ppl_new_Pointset_Powerset_Octagonal_Shape_long_double_from_Congruence_
System (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t * pph,
ppl_const_Congruence_System_t cs)` [**related**]
- 10.131.2.3** `int ppl_new_Pointset_Powerset_Octagonal_Shape_long_double_from_Constraint_
System (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t * pph,
ppl_const_Constraint_System_t cs)` [**related**]
- 10.131.2.4** `int ppl_new_Pointset_Powerset_Octagonal_Shape_long_double_from_Octagonal_
Shape_long_double (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t * pph,
ppl_const_Octagonal_Shape_long_double_t ph)` [**related**]
- 10.131.2.5** `int ppl_new_Pointset_Powerset_Octagonal_Shape_long_
double_from_Octagonal_Shape_long_double_with_complexity
(ppl_Pointset_Powerset_Octagonal_Shape_long_double_t * pph,
ppl_const_Octagonal_Shape_long_double_t ph, int complexity)` [**related**]
- 10.131.2.6** `int ppl_new_Pointset_Powerset_Octagonal_Shape_long_
double_from_Pointset_Powerset_Octagonal_Shape_long_double
(ppl_Pointset_Powerset_Octagonal_Shape_long_double_t * pph,
ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ph)` [**related**]
- 10.131.2.7** `int ppl_new_Pointset_Powerset_Octagonal_Shape_long_double_from_
Pointset_Powerset_Octagonal_Shape_long_double_with_complexity
(ppl_Pointset_Powerset_Octagonal_Shape_long_double_t * pph,
ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ph, int complexity)`
[**related**]

- 10.131.2.8** `int ppl_new_Pointset_Powerset_Octagonal_Shape_long_double_from_space_dimension (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t * pph, ppl_dimension_type d, int empty)` [**related**]
- 10.131.2.9** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_add_congruence (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_const_Congruence_t c)` [**related**]
- 10.131.2.10** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_add_congruences (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_const_Congruence_System_t cs)` [**related**]
- 10.131.2.11** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_add_constraint (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_const_Constraint_t c)` [**related**]
- 10.131.2.12** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_add_constraints (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_const_Constraint_System_t cs)` [**related**]
- 10.131.2.13** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_add_disjunct (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ps, ppl_const_Octagonal_Shape_long_double_t d)` [**related**]
- 10.131.2.14** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_add_space_dimensions_and_embed (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_dimension_type d)` [**related**]
- 10.131.2.15** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_add_space_dimensions_and_project (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_dimension_type d)` [**related**]

- 10.131.2.16 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_affine_dimension`
(`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ph`,
`ppl_dimension_type * m`) [`related`]
- 10.131.2.17 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_affine_image`
(`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph`, `ppl_dimension_type`
`var`, `ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`) [`related`]
- 10.131.2.18 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_affine_preimage`
(`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph`, `ppl_dimension_type`
`var`, `ppl_const_Linear_Expression_t le`, `ppl_const_Coefficient_t d`) [`related`]
- 10.131.2.19 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_BGP99_BHMZ05_-`
`extrapolation_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t y`, `int disjuncts`)
[`related`]
- 10.131.2.20 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_BHZ03_H79_BHMZ05_-`
`widening_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t y`) [`related`]
- 10.131.2.21 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_bounded_affine_image`
(`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph`, `ppl_dimension_type`
`var`, `ppl_const_Linear_Expression_t lb`, `ppl_const_Linear_Expression_t ub`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.131.2.22 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_bounded_affine_preimage`
(`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph`, `ppl_dimension_type`
`var`, `ppl_const_Linear_Expression_t lb`, `ppl_const_Linear_Expression_t ub`,
`ppl_const_Coefficient_t d`) [`related`]

- 10.131.2.23 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_bounds_from_above`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ph`,
`ppl_const_Linear_Expression_t le`) [`related`]
- 10.131.2.24 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_bounds_from_below`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ph`,
`ppl_const_Linear_Expression_t le`) [`related`]
- 10.131.2.25 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_concatenate_assign`
 (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t y`) [`related`]
- 10.131.2.26 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_constrains`
 (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph`, `ppl_dimension_type`
`var`) [`related`]
- 10.131.2.27 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_contains_integer_point`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ph`) [`related`]
- 10.131.2.28 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_`
`contains_Pointset_Powerset_Octagonal_Shape_long_double`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t y`) [`related`]
- 10.131.2.29 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_difference_assign`
 (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t y`) [`related`]
- 10.131.2.30 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_drop_disjunct`
 (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ps`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_iterator_t cit`,
`ppl_Pointset_Powerset_Octagonal_Shape_long_double_iterator_t it`) [`related`]

- 10.131.2.31** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_drop_disjuncts`
 (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ps`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_iterator_t first`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_iterator_t last`)
 [related]
- 10.131.2.32** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_drop_some_non_integer_`
`points` (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph`, `int complexity`)
 [related]
- 10.131.2.33** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_drop_some_non_`
`integer_points_2` (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph`,
`ppl_dimension_type ds[ ]`, `size_t n`, `int complexity`) [related]
- 10.131.2.34** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_`
`equals_Pointset_Powerset_Octagonal_Shape_long_double`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t y`) [related]
- 10.131.2.35** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_expand_space_dimension`
 (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph`, `ppl_dimension_type d`,
`ppl_dimension_type m`) [related]
- 10.131.2.36** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_external_memory_in_`
`bytes` (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ps`, `size_t * sz`)
 [related]
- 10.131.2.37** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_fold_space_dimensions`
 (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph`, `ppl_dimension_type`
`ds[ ]`, `size_t n`, `ppl_dimension_type d`) [related]

- 10.131.2.38 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_generalized_affine_image (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.131.2.39 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_generalized_affine_image_lhs_rhs (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t rhs)` [`related`]
- 10.131.2.40 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_generalized_affine_preimage (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.131.2.41 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_generalized_affine_preimage_lhs_rhs (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t rhs)` [`related`]
- 10.131.2.42 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_geometrically_covers_Pointset_Powerset_Octagonal_Shape_long_double (ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t y)` [`related`]
- 10.131.2.43 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_geometrically_equals_Pointset_Powerset_Octagonal_Shape_long_double (ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t y)` [`related`]
- 10.131.2.44 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_intersection_assign (ppl_Pointset_Powerset_Octagonal_Shape_long_double_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t y)` [`related`]

- 10.131.2.45 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_is_bounded`
`(ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ph)` [`related`]
- 10.131.2.46 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_is_discrete`
`(ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ph)` [`related`]
- 10.131.2.47 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_is_-`
`disjoint_from_Pointset_Powerset_Octagonal_Shape_long_double`
`(ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t x,`
`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t y)` [`related`]
- 10.131.2.48 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_is_empty`
`(ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ph)` [`related`]
- 10.131.2.49 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_is_topologically_closed`
`(ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ph)` [`related`]
- 10.131.2.50 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_is_universe`
`(ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ph)` [`related`]
- 10.131.2.51 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_map_space_dimensions`
`(ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph, ppl_dimension_type`
`maps[], size_t n)` [`related`]
- 10.131.2.52 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_maximize`
`(ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ph,`
`ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d,`
`int * poptimum)` [`related`]

- 10.131.2.53** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_maximize_with_point`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ph`,
`ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`,
`int * poptimum`, `ppl_Generator_t point`) [`related`]
- 10.131.2.54** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_minimize`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ph`,
`ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`,
`int * poptimum`) [`related`]
- 10.131.2.55** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_minimize_with_point`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ph`,
`ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`,
`int * poptimum`, `ppl_Generator_t point`) [`related`]
- 10.131.2.56** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_OK`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ph`) [`related`]
- 10.131.2.57** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_omega_reduce`
 (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph`) [`related`]
- 10.131.2.58** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_pairwise_reduce`
 (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph`) [`related`]
- 10.131.2.59** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_refine_with_congruence`
 (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph`,
`ppl_const_Congruence_t c`) [`related`]
- 10.131.2.60** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_refine_with_congruences`
 (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph`,
`ppl_const_Congruence_System_t cs`) [`related`]

- 10.131.2.61 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_refine_with_constraint`
(`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph`, `ppl_const_Constraint_t c`) [`related`]

- 10.131.2.62 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_refine_with_constraints`
(`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph`,
`ppl_const_Constraint_System_t cs`) [`related`]

- 10.131.2.63 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_relation_with_Congruence`
(`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ph`,
`ppl_const_Congruence_t c`) [`related`]

- 10.131.2.64 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_relation_with_Constraint`
(`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ph`,
`ppl_const_Constraint_t c`) [`related`]

- 10.131.2.65 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_relation_with_Generator`
(`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ph`,
`ppl_const_Generator_t c`) [`related`]

- 10.131.2.66 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_remove_higher_-`
`space_dimensions` (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph`,
`ppl_dimension_type d`) [`related`]

- 10.131.2.67 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_remove_space_dimensions`
(`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph`, `ppl_dimension_type`
`ds[ ], size_t n`) [`related`]

- 10.131.2.68 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_simplify_using_-`
`context_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t y`) [`related`]

- 10.131.2.69** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_size`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ps`, `size_t * sz`)
 [`related`]
- 10.131.2.70** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_space_dimension`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ph`,
`ppl_dimension_type * m`) [`related`]
- 10.131.2.71** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_-`
`strictly_contains_Pointset_Powerset_Octagonal_Shape_long_double`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t y`) [`related`]
- 10.131.2.72** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_time_elapse_assign`
 (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t y`) [`related`]
- 10.131.2.73** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_topological_closure_assign`
 (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph`) [`related`]
- 10.131.2.74** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_total_memory_in_bytes`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t ps`, `size_t * sz`)
 [`related`]
- 10.131.2.75** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_unconstrain_-`
`space_dimension` (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph`,
`ppl_dimension_type var`) [`related`]
- 10.131.2.76** `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_unconstrain_-`
`space_dimensions` (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t ph`,
`ppl_dimension_type ds[ ]`, `size_t n`) [`related`]

10.131.2.77 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_upper_bound_assign`
(`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t y`) [**related**]

10.131.2.78 `int ppl_Pointset_Powerset_Octagonal_Shape_long_double_upper_bound_-`
`assign_if_exact` (`ppl_Pointset_Powerset_Octagonal_Shape_long_double_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_long_double_t y`) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.132 `ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_t *pit`)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_from_const_iterator` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_t *px`, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_t y`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_begin` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ps`, `ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_end` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ps`, `ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_equal_test` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_t x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_t y`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_increment` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_decrement` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_dereference` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_t ps`, `ppl_const_Octagonal_Shape_mpq_class_t *d`)
- `int ppl_delete_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_t psit`)

10.132.1 Detailed Description

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_tag](#).

10.132.2 Friends And Related Function Documentation

10.132.2.1 `int ppl_delete_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator`
(`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_t psit`)
[related]

10.132.2.2 `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator`
(`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_t * pit`)
[related]

10.132.2.3 `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_from_`
`const_iterator` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_t`
`* px`, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_t y`)
[related]

10.132.2.4 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_begin`
(`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ps`,
`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_t psit`)
[related]

10.132.2.5 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_decrement`
(`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_t psit`)
[related]

10.132.2.6 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_dereference`
(`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_t ps`,
`ppl_const_Octagonal_Shape_mpq_class_t * d`) [related]

10.133 `ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_tag` Interface Reference 1381

10.132.2.7 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_end`
(`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ps`,
`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_t psit`)
[related]

10.132.2.8 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_equal_test`
(`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_t y`)
[related]

10.132.2.9 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_increment`
(`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_const_iterator_t psit`)
[related]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.133 `ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_t *pit`)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_from_iterator` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_t *px`, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_t y`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_begin` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ps`, `ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_t psit`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_end` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ps`, `ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_t psit`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_equal_test` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_t x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_t y`)

- `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_increment` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_t psit`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_decrement` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_t psit`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_dereference` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_t ps`, `ppl_const_Octagonal_Shape_mpq_class_t *d`)
- `int ppl_delete_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_t psit`)

10.133.1 Detailed Description

Types and functions for iterating on the disjuncts of a `ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_tag`.

10.133.2 Friends And Related Function Documentation

- 10.133.2.1** `int ppl_delete_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_t psit`) **[related]**
- 10.133.2.2** `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_t * pit`) **[related]**
- 10.133.2.3** `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_from_iterator` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_t * px`, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_t y`) **[related]**
- 10.133.2.4** `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_begin` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ps`, `ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_t psit`) **[related]**
- 10.133.2.5** `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_decrement` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_t psit`) **[related]**

- 10.133.2.6 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_dereference`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_t ps`,
`ppl_const_Octagonal_Shape_mpq_class_t * d`) [`related`]
- 10.133.2.7 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_end`
 (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ps`,
`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_t psit`) [`related`]
- 10.133.2.8 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_equal_test`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_t y`) [`related`]
- 10.133.2.9 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_increment`
 (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_t psit`) [`related`]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.134 `ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_tag` Interface Reference

Types and functions for [ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Pointset_Powerset_Octagonal_Shape_mpq_class` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph`)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpq_class_from_space_dimension` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t *pph`, `ppl_dimension_type d`, `int empty`)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpq_class_from_Pointset_Powerset_Octagonal_Shape_mpq_class` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t *pph`, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph`)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpq_class_from_Octagonal_Shape_mpq_class` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t *pph`, `ppl_const_Octagonal_Shape_mpq_class_t ph`)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpq_class_from_Pointset_Powerset_Octagonal_Shape_mpq_class_with_complexity` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t *pph`, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph`, `int complexity`)

- [int ppl_new_Pointset_Powerset_Octagonal_Shape_mpq_class_from_Octagonal_Shape_mpq_class_with_complexity](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)
- [int ppl_new_Pointset_Powerset_Octagonal_Shape_mpq_class_from_Constraint_System](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t *pph, ppl_const_Constraint_System_t cs)
- [int ppl_new_Pointset_Powerset_Octagonal_Shape_mpq_class_from_Congruence_System](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t *pph, ppl_const_Congruence_System_t cs)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_space_dimension](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, ppl_dimension_type *m)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_affine_dimension](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, ppl_dimension_type *m)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_relation_with_Constraint](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, ppl_const_Constraint_t c)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_relation_with_Generator](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, ppl_const_Generator_t c)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_relation_with_Congruence](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, ppl_const_Congruence_t c)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_is_empty](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_is_universe](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_is_bounded](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_contains_integer_point](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_is_topologically_closed](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_is_discrete](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_topological_closure_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_pairwise_reduce](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_omega_reduce](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_bounds_from_above](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_bounds_from_below](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_maximize](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_minimize](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_maximize_with_point](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_minimize_with_point](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)

- `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_contains_Pointset_Powerset_Octagonal_Shape_mpq_class` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t y`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_strictly_contains_Pointset_Powerset_Octagonal_Shape_mpq_class` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t y`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_is_disjoint_from_Pointset_Powerset_Octagonal_Shape_mpq_class` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t y`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_geometrically_covers_Pointset_Powerset_Octagonal_Shape_mpq_class` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t y`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_geometrically_equals_Pointset_Powerset_Octagonal_Shape_mpq_class` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t y`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_equals_Pointset_Powerset_Octagonal_Shape_mpq_class` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t y`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_OK` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_add_constraint` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph`, `ppl_const_Constraint_t c`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_add_congruence` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph`, `ppl_const_Congruence_t c`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_add_constraints` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph`, `ppl_const_Constraint_System_t cs`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_add_congruences` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph`, `ppl_const_Congruence_System_t cs`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_refine_with_constraint` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph`, `ppl_const_Constraint_t c`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_refine_with_congruence` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph`, `ppl_const_Congruence_t c`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_refine_with_constraints` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph`, `ppl_const_Constraint_System_t cs`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_refine_with_congruences` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph`, `ppl_const_Congruence_System_t cs`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_intersection_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t y`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_upper_bound_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t y`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_difference_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t y`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_concatenate_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t y`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_time_elapse_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t y`)

- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_upper_bound_assign_if_exact](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t y)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_simplify_using_context_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t y)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_constrains](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) var)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_unconstrain_space_dimension](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) var)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_unconstrain_space_dimensions](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) ds[], size_t n)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_affine_image](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_affine_preimage](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_bounded_affine_image](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_bounded_affine_preimage](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_generalized_affine_image](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_generalized_affine_preimage](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_generalized_affine_image_lhs_rhs](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_generalized_affine_preimage_lhs_rhs](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_add_space_dimensions_and_embed](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) d)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_add_space_dimensions_and_project](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) d)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_remove_space_dimensions](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) ds[], size_t n)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_remove_higher_space_dimensions](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) d)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_expand_space_dimension](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_fold_space_dimensions](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_map_space_dimensions](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) maps[], size_t n)
- [int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_drop_some_non_integer_points](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, int complexity)

- int [ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_drop_some_non_integer_points_2](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_external_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_total_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_size](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_add_disjunct](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ps, ppl_const_Octagonal_Shape_mpq_class_t d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_drop_disjunct](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ps, ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_t cit, ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_t it)
- int [ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_drop_disjuncts](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ps, ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_t first, ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_t last)
- int [ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_BHZ03_H79_BHMZ05_widening_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_BGP99_BHMZ05_extrapolation_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t y, int disjuncts)

10.134.1 Detailed Description

Types and functions for [ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_tag](#).

10.134.2 Friends And Related Function Documentation

- 10.134.2.1** int [ppl_delete_Pointset_Powerset_Octagonal_Shape_mpq_class](#) (ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t *ph*) [[related](#)]
- 10.134.2.2** int [ppl_new_Pointset_Powerset_Octagonal_Shape_mpq_class_from_Congruence_System](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t * *pph*, ppl_const_Congruence_System_t *cs*) [[related](#)]
- 10.134.2.3** int [ppl_new_Pointset_Powerset_Octagonal_Shape_mpq_class_from_Constraint_System](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t * *pph*, ppl_const_Constraint_System_t *cs*) [[related](#)]

- 10.134.2.4** `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpq_class_from_Octagonal_Shape_mpq_class (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t * pph, ppl_const_Octagonal_Shape_mpq_class_t ph)` [**related**]
- 10.134.2.5** `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpq_class_from_Octagonal_Shape_mpq_class_with_complexity (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t * pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)` [**related**]
- 10.134.2.6** `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpq_class_from_Pointset_Powerset_Octagonal_Shape_mpq_class (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t * pph, ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph)` [**related**]
- 10.134.2.7** `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpq_class_from_Pointset_Powerset_Octagonal_Shape_mpq_class_with_complexity (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t * pph, ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, int complexity)` [**related**]
- 10.134.2.8** `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpq_class_from_space_dimension (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t * pph, ppl_dimension_type d, int empty)` [**related**]
- 10.134.2.9** `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_add_congruence (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, ppl_const_Congruence_t c)` [**related**]
- 10.134.2.10** `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_add_congruences (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, ppl_const_Congruence_System_t cs)` [**related**]

10.134.2.11 int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_add_constraint
(ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t *ph*, ppl_const_Constraint_t
c) [**related**]

10.134.2.12 int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_add_constraints
(ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t *ph*,
ppl_const_Constraint_System_t *cs*) [**related**]

10.134.2.13 int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_add_disjunct
(ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t *ps*,
ppl_const_Octagonal_Shape_mpq_class_t *d*) [**related**]

10.134.2.14 int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_add_space_dimensions_
and_embed (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t *ph*,
ppl_dimension_type *d*) [**related**]

10.134.2.15 int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_add_space_dimensions_
and_project (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t *ph*,
ppl_dimension_type *d*) [**related**]

10.134.2.16 int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_affine_dimension
(ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t *ph*,
ppl_dimension_type * *m*) [**related**]

10.134.2.17 int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_affine_image
(ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t *ph*, ppl_dimension_type *var*,
ppl_const_Linear_Expression_t *le*, ppl_const_Coefficient_t *d*) [**related**]

10.134.2.18 int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_affine_preimage
(ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t *ph*, ppl_dimension_type *var*,
ppl_const_Linear_Expression_t *le*, ppl_const_Coefficient_t *d*) [**related**]

- 10.134.2.19 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_BGP99_BHMZ05_-
extrapolation_assign (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t x,
ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t y, int disjuncts)
[related]`
- 10.134.2.20 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_BHZ03_H79_BHMZ05_-
widening_assign (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t x,
ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t y) [related]`
- 10.134.2.21 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_bounded_affine_image
(ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, ppl_dimension_type
var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub,
ppl_const_Coefficient_t d) [related]`
- 10.134.2.22 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_bounded_affine_preimage
(ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, ppl_dimension_type
var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub,
ppl_const_Coefficient_t d) [related]`
- 10.134.2.23 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_bounds_from_above
(ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph,
ppl_const_Linear_Expression_t le) [related]`
- 10.134.2.24 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_bounds_from_below
(ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph,
ppl_const_Linear_Expression_t le) [related]`
- 10.134.2.25 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_concatenate_-
assign (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t x,
ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t y) [related]`

- 10.134.2.26 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_constrains`
 (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t` *ph*, `ppl_dimension_type` *var*)
 [related]
- 10.134.2.27 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_contains_integer_point`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t` *ph*) [related]
- 10.134.2.28 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_-`
`contains_Pointset_Powerset_Octagonal_Shape_mpq_class`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t` *x*,
`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t` *y*) [related]
- 10.134.2.29 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_difference_-`
`assign` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t` *x*,
`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t` *y*) [related]
- 10.134.2.30 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_drop_disjunct`
 (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t` *ps*, `ppl_-`
`const_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_t` *cit*,
`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_t` *it*) [related]
- 10.134.2.31 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_drop_disjuncts`
 (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t` *ps*, `ppl_-`
`const_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_t` *first*,
`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_iterator_t` *last*)
 [related]
- 10.134.2.32 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_drop_some_non_integer_-`
`points` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t` *ph*, `int` *complexity*)
 [related]

- 10.134.2.33 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_drop_some_non-integer_points_2 (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, ppl_dimension_type ds[], size_t n, int complexity)` [`related`]
- 10.134.2.34 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_equals_Pointset_Powerset_Octagonal_Shape_mpq_class (ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t y)` [`related`]
- 10.134.2.35 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_expand_space_dimension (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, ppl_dimension_type d, ppl_dimension_type m)` [`related`]
- 10.134.2.36 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_external_memory_in_bytes (ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ps, size_t * sz)` [`related`]
- 10.134.2.37 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_fold_space_dimensions (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [`related`]
- 10.134.2.38 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_generalized_affine_image (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.134.2.39 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_generalized_affine_image_lhs_rhs (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` [`related`]

- 10.134.2.40** `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_generalized_-
affine_preimage (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t
ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relysym,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.134.2.41** `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_generalized_affine_-
preimage_lhs_rhs (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph,
ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relysym,
ppl_const_Linear_Expression_t rhs)` [**related**]
- 10.134.2.42** `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_-
geometrically_covers_Pointset_Powerset_Octagonal_Shape_mpq_class
(ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t x,
ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t y)` [**related**]
- 10.134.2.43** `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_-
geometrically_equals_Pointset_Powerset_Octagonal_Shape_mpq_class
(ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t x,
ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t y)` [**related**]
- 10.134.2.44** `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_intersection_-
assign (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t x,
ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t y)` [**related**]
- 10.134.2.45** `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_is_bounded
(ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph)` [**related**]
- 10.134.2.46** `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_is_discrete
(ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph)` [**related**]

- 10.134.2.47 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_is_disjoint_from_Pointset_Powerset_Octagonal_Shape_mpq_class (ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t y)` [**related**]
- 10.134.2.48 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_is_empty (ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph)` [**related**]
- 10.134.2.49 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_is_topologically_closed (ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph)` [**related**]
- 10.134.2.50 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_is_universe (ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph)` [**related**]
- 10.134.2.51 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_map_space_dimensions (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, ppl_dimension_type maps[], size_t n)` [**related**]
- 10.134.2.52 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_maximize (ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [**related**]
- 10.134.2.53 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_maximize_with_point (ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` [**related**]
- 10.134.2.54 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_minimize (ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [**related**]

- 10.134.2.55** int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_minimize_with_point
(ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t *ph*,
ppl_const_Linear_Expression_t *le*, ppl_Coefficient_t *ext_n*, ppl_Coefficient_t *ext_d*,
int **poptimum*, ppl_Generator_t *point*) [**related**]
- 10.134.2.56** int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_OK
(ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t *ph*) [**related**]
- 10.134.2.57** int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_omega_reduce
(ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t *ph*) [**related**]
- 10.134.2.58** int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_pairwise_reduce
(ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t *ph*) [**related**]
- 10.134.2.59** int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_refine_with_congruence
(ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t *ph*, ppl_const_Congruence_t
c) [**related**]
- 10.134.2.60** int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_refine_with_-
congruences (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t *ph*,
ppl_const_Congruence_System_t *cs*) [**related**]
- 10.134.2.61** int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_refine_with_constraint
(ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t *ph*, ppl_const_Constraint_t
c) [**related**]
- 10.134.2.62** int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_refine_with_-
constraints (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t *ph*,
ppl_const_Constraint_System_t *cs*) [**related**]

- 10.134.2.63 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_relation_with_Congruence`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph`,
`ppl_const_Congruence_t c`) [`related`]
- 10.134.2.64 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_relation_with_Constraint`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph`,
`ppl_const_Constraint_t c`) [`related`]
- 10.134.2.65 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_relation_with_Generator`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph`,
`ppl_const_Generator_t c`) [`related`]
- 10.134.2.66 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_remove_higher_ -`
`space_dimensions` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph`,
`ppl_dimension_type d`) [`related`]
- 10.134.2.67 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_remove_space_dimensions`
 (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph`, `ppl_dimension_type ds[ ]`,
`size_t n`) [`related`]
- 10.134.2.68 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_simplify_using_ -`
`context_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t y`) [`related`]
- 10.134.2.69 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_size`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ps`, `size_t * sz`)
 [`related`]
- 10.134.2.70 `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_space_dimension`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph`,
`ppl_dimension_type * m`) [`related`]

- 10.134.2.71** `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_-
strictly_contains_Pointset_Powerset_Octagonal_Shape_mpq_class
(ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t x,
ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t y) [related]`
- 10.134.2.72** `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_time_elapse_-
assign (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t x,
ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t y) [related]`
- 10.134.2.73** `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_topological_closure_assign
(ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph) [related]`
- 10.134.2.74** `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_total_memory_in_bytes
(ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t ps, size_t * sz)
[related]`
- 10.134.2.75** `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_unconstrain_-
space_dimension (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph,
ppl_dimension_type var) [related]`
- 10.134.2.76** `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_unconstrain_space_-
dimensions (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t ph,
ppl_dimension_type ds[], size_t n) [related]`
- 10.134.2.77** `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_upper_-
bound_assign (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t x,
ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t y) [related]`
- 10.134.2.78** `int ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_upper_bound_-
assign_if_exact (ppl_Pointset_Powerset_Octagonal_Shape_mpq_class_t x,
ppl_const_Pointset_Powerset_Octagonal_Shape_mpq_class_t y) [related]`

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.135 [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_tag](#) Interface Reference

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int` [ppl_new_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator](#) (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_t *pit`)
- `int` [ppl_new_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_from_const_iterator](#) (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_t *px`, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_t y`)
- `int` [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_begin](#) (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ps`, `ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_t psit`)
- `int` [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_end](#) (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ps`, `ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_t psit`)
- `int` [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_equal_test](#) (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_t x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_t y`)
- `int` [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_increment](#) (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_t psit`)
- `int` [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_decrement](#) (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_t psit`)
- `int` [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_dereference](#) (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_t ps`, `ppl_const_Octagonal_Shape_mpz_class_t *d`)
- `int` [ppl_delete_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator](#) (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_t psit`)

10.135.1 Detailed Description

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_tag](#).

10.135.2 Friends And Related Function Documentation

- 10.135.2.1** `int` [ppl_delete_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator](#) (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_t psit`)
[related]

- 10.135.2.2 `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator`
(`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_t * pit`)
[related]
- 10.135.2.3 `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_from_-`
`const_iterator` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_t *`
`px`, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_t y`)
[related]
- 10.135.2.4 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_begin`
(`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ps`,
`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_t psit`)
[related]
- 10.135.2.5 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_decrement`
(`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_t psit`)
[related]
- 10.135.2.6 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_dereference`
(`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_t ps`,
`ppl_const_Octagonal_Shape_mpz_class_t * d`) [related]
- 10.135.2.7 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_end`
(`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ps`,
`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_t psit`)
[related]
- 10.135.2.8 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_equal_test`
(`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_t y`)
[related]

10.135.2.9 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_increment`
 (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_const_iterator_t psit`)
 [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.136 `ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_tag` **Interface Reference**

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int` [ppl_new_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator](#) (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_t *pit`)
- `int` [ppl_new_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_from_iterator](#) (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_t *px`, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_t y`)
- `int` [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_begin](#) (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ps`, `ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_t psit`)
- `int` [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_end](#) (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ps`, `ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_t psit`)
- `int` [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_equal_test](#) (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_t x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_t y`)
- `int` [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_increment](#) (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_t psit`)
- `int` [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_decrement](#) (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_t psit`)
- `int` [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_dereference](#) (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_t ps`, `ppl_const_Octagonal_Shape_mpz_class_t *d`)
- `int` [ppl_delete_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator](#) (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_t psit`)

10.136.1 Detailed Description

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_tag](#).

10.136.2 Friends And Related Function Documentation

- 10.136.2.1** `int ppl_delete_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator`
 (ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_t *psit*)
 [related]
- 10.136.2.2** `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator`
 (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_t * *pit*) [related]
- 10.136.2.3** `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_from_iterator`
 (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_t * *px*,
 ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_t *y*) [related]
- 10.136.2.4** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_-`
`begin` (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t *ps*,
 ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_t *psit*) [related]
- 10.136.2.5** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_decrement`
 (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_t *psit*) [related]
- 10.136.2.6** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_dereference`
 (ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_t *ps*,
 ppl_const_Octagonal_Shape_mpz_class_t * *d*) [related]
- 10.136.2.7** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_end`
 (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t *ps*,
 ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_t *psit*) [related]
- 10.136.2.8** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_equal_test`
 (ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_t *x*,
 ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_t *y*) [related]

10.136.2.9 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_increment` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_t psit`) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.137 `ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_tag` Interface Reference

Types and functions for [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Pointset_Powerset_Octagonal_Shape_mpz_class` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpz_class_from_space_dimension` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t *pph`, `ppl_dimension_type d`, `int empty`)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpz_class_from_Pointset_Powerset_Octagonal_Shape_mpz_class` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t *pph`, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpz_class_from_Octagonal_Shape_mpz_class` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t *pph`, `ppl_const_Octagonal_Shape_mpz_class_t ph`)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpz_class_from_Pointset_Powerset_Octagonal_Shape_mpz_class_with_complexity` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t *pph`, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`, `int complexity`)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpz_class_from_Octagonal_Shape_mpz_class_with_complexity` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t *pph`, `ppl_const_Octagonal_Shape_mpz_class_t ph`, `int complexity`)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpz_class_from_Constraint_System` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t *pph`, `ppl_const_Constraint_System_t cs`)
- `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpz_class_from_Congruence_System` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t *pph`, `ppl_const_Congruence_System_t cs`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_space_dimension` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`, `ppl_dimension_type *m`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_affine_dimension` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`, `ppl_dimension_type *m`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_relation_with_Constraint` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`, `ppl_const_Constraint_t c`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_relation_with_Generator` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`, `ppl_const_Generator_t c`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_relation_with_Congruence` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`, `ppl_const_Congruence_t c`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_is_empty` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`)

- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_is_universe` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_is_bounded` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_contains_integer_point` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_is_topologically_closed` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_is_discrete` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_topological_closure_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_pairwise_reduce` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_omega_reduce` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_bounds_from_above` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`, `ppl_const_Linear_Expression_t le`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_bounds_from_below` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`, `ppl_const_Linear_Expression_t le`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_maximize` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int *poptimum`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_minimize` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int *poptimum`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_maximize_with_point` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int *poptimum`, `ppl_Generator_t point`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_minimize_with_point` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int *poptimum`, `ppl_Generator_t point`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_contains_Pointset_Powerset_Octagonal_Shape_mpz_class` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t y`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_strictly_contains_Pointset_Powerset_Octagonal_Shape_mpz_class` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t y`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_is_disjoint_from_Pointset_Powerset_Octagonal_Shape_mpz_class` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t y`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_geometrically_covers_Pointset_Powerset_Octagonal_Shape_mpz_class` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t y`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_geometrically_equals_Pointset_Powerset_Octagonal_Shape_mpz_class` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t y`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_equals_Pointset_Powerset_Octagonal_Shape_mpz_class` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t y`)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_OK` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`)

- int [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_add_constraint](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_add_congruence](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_add_constraints](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_add_congruences](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_refine_with_constraint](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_refine_with_congruence](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_refine_with_constraints](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_refine_with_congruences](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_intersection_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_upper_bound_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_difference_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_concatenate_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_time_elapse_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_upper_bound_assign_if_exact](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_simplify_using_context_assign](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t y)
- int [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_constrains](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_unconstrain_space_dimension](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_unconstrain_space_dimensions](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_affine_image](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_affine_preimage](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_bounded_affine_image](#) (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)

- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_bounded_affine_preimage` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t` ph, `ppl_dimension_type` var, `ppl_const_Linear_Expression_t` lb, `ppl_const_Linear_Expression_t` ub, `ppl_const_Coefficient_t` d)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_generalized_affine_image` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t` ph, `ppl_dimension_type` var, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_generalized_affine_preimage` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t` ph, `ppl_dimension_type` var, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` le, `ppl_const_Coefficient_t` d)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_generalized_affine_image_lhs_rhs` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t` ph, `ppl_const_Linear_Expression_t` lhs, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` rhs)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_generalized_affine_preimage_lhs_rhs` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t` ph, `ppl_const_Linear_Expression_t` lhs, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` rhs)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_add_space_dimensions_and_embed` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t` ph, `ppl_dimension_type` d)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_add_space_dimensions_and_project` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t` ph, `ppl_dimension_type` d)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_remove_space_dimensions` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t` ph, `ppl_dimension_type` ds[], `size_t` n)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_remove_higher_space_dimensions` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t` ph, `ppl_dimension_type` d)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_expand_space_dimension` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t` ph, `ppl_dimension_type` d, `ppl_dimension_type` m)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_fold_space_dimensions` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t` ph, `ppl_dimension_type` ds[], `size_t` n, `ppl_dimension_type` d)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_map_space_dimensions` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t` ph, `ppl_dimension_type` maps[], `size_t` n)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_drop_some_non_integer_points` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t` ph, `int` complexity)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_drop_some_non_integer_points_2` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t` ph, `ppl_dimension_type` ds[], `size_t` n, `int` complexity)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_external_memory_in_bytes` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t` ps, `size_t` *sz)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_total_memory_in_bytes` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t` ps, `size_t` *sz)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_size` (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t` ps, `size_t` *sz)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_add_disjunct` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t` ps, `ppl_const_Octagonal_Shape_mpz_class_t` d)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_drop_disjunct` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t` ps, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_t` cit, `ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_t` it)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_drop_disjuncts` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t` ps, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_t` first, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_t` last)
- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_BHZ03_H79_BHMZ05_widening_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t` x, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t` y)

- `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_BGP99_BHMZ05_extrapolation_assign` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t x`, `ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t y`, `int disjuncts`)

10.137.1 Detailed Description

Types and functions for [ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_tag](#).

10.137.2 Friends And Related Function Documentation

- 10.137.2.1** `int ppl_delete_Pointset_Powerset_Octagonal_Shape_mpz_class`
(`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`) [**related**]
- 10.137.2.2** `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpz_class_from_Congruence_System` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t * pph`,
`ppl_const_Congruence_System_t cs`) [**related**]
- 10.137.2.3** `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpz_class_from_Constraint_System` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t * pph`,
`ppl_const_Constraint_System_t cs`) [**related**]
- 10.137.2.4** `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpz_class_from_Octagonal_Shape_mpz_class` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t * pph`,
`ppl_const_Octagonal_Shape_mpz_class_t ph`) [**related**]
- 10.137.2.5** `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpz_class_from_Octagonal_Shape_mpz_class_with_complexity` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t * pph`, `ppl_const_Octagonal_Shape_mpz_class_t ph`, `int complexity`)
[**related**]
- 10.137.2.6** `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpz_class_from_Pointset_Powerset_Octagonal_Shape_mpz_class`
(`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t * pph`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`) [**related**]

- 10.137.2.7** `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpz_class_from_-
Pointset_Powerset_Octagonal_Shape_mpz_class_with_complexity
(ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t * pph,
ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph, int complexity)`
[related]
- 10.137.2.8** `int ppl_new_Pointset_Powerset_Octagonal_Shape_mpz_class_from_space_dimension
(ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t * pph, ppl_dimension_type d,
int empty)` [related]
- 10.137.2.9** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_add_congruence
(ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph, ppl_const_Congruence_t
c)` [related]
- 10.137.2.10** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_add_congruences
(ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph,
ppl_const_Congruence_System_t cs)` [related]
- 10.137.2.11** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_add_constraint
(ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph, ppl_const_Constraint_t
c)` [related]
- 10.137.2.12** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_add_constraints
(ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph,
ppl_const_Constraint_System_t cs)` [related]
- 10.137.2.13** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_add_disjunct
(ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ps,
ppl_const_Octagonal_Shape_mpz_class_t d)` [related]
- 10.137.2.14** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_add_space_dimensions_-
and_embed (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph,
ppl_dimension_type d)` [related]

- 10.137.2.15** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_add_space_dimensions_and_project (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph, ppl_dimension_type d)` [**related**]
- 10.137.2.16** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_affine_dimension (ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph, ppl_dimension_type * m)` [**related**]
- 10.137.2.17** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_affine_image (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.137.2.18** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_affine_preimage (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.137.2.19** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_BGP99_BHMZ05_extrapolation_assign (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t y, int disjuncts)` [**related**]
- 10.137.2.20** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_BHZ03_H79_BHMZ05_widening_assign (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t y)` [**related**]
- 10.137.2.21** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_bounded_affine_image (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [**related**]

- 10.137.2.22 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_bounded_affine_preimage`
 (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`, `ppl_dimension_type`
var, `ppl_const_Linear_Expression_t lb`, `ppl_const_Linear_Expression_t ub`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.137.2.23 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_bounds_from_above`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`,
`ppl_const_Linear_Expression_t le`) [`related`]
- 10.137.2.24 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_bounds_from_below`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`,
`ppl_const_Linear_Expression_t le`) [`related`]
- 10.137.2.25 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_concatenate_-`
`assign` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t y`) [`related`]
- 10.137.2.26 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_constrains`
 (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`, `ppl_dimension_type var`)
 [`related`]
- 10.137.2.27 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_contains_integer_point`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`) [`related`]
- 10.137.2.28 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_-`
`contains_Pointset_Powerset_Octagonal_Shape_mpz_class`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t y`) [`related`]
- 10.137.2.29 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_difference_-`
`assign` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t y`) [`related`]

- 10.137.2.30** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_drop_disjunct`
 (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ps`, `ppl_-`
`const_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_t cit`,
`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_t it`) [**related**]
- 10.137.2.31** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_drop_disjuncts`
 (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ps`, `ppl_-`
`const_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_t first`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_iterator_t last`)
 [**related**]
- 10.137.2.32** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_drop_some_non_integer_-`
`points` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`, `int complexity`)
 [**related**]
- 10.137.2.33** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_drop_some_non_-`
`integer_points_2` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`,
`ppl_dimension_type ds[ ]`, `size_t n`, `int complexity`) [**related**]
- 10.137.2.34** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_-`
`equals_Pointset_Powerset_Octagonal_Shape_mpz_class`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t y`) [**related**]
- 10.137.2.35** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_expand_space_dimension`
 (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`, `ppl_dimension_type d`,
`ppl_dimension_type m`) [**related**]
- 10.137.2.36** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_external_memory_in_bytes`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ps`, `size_t * sz`)
 [**related**]

- 10.137.2.37** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_fold_space_dimensions`
(`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`, `ppl_dimension_type ds[]`,
`size_t n`, `ppl_dimension_type d`) [`related`]
- 10.137.2.38** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_generalized_affine_image`
(`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`, `ppl_dimension_type`
`var`, `enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.137.2.39** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_generalized_affine_-`
`image_lhs_rhs` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`,
`ppl_const_Linear_Expression_t lhs`, `enum ppl_enum_Constraint_Type relsym`,
`ppl_const_Linear_Expression_t rhs`) [`related`]
- 10.137.2.40** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_generalized_affine_preimage`
(`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`, `ppl_dimension_type`
`var`, `enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.137.2.41** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_generalized_affine_-`
`preimage_lhs_rhs` (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`,
`ppl_const_Linear_Expression_t lhs`, `enum ppl_enum_Constraint_Type relsym`,
`ppl_const_Linear_Expression_t rhs`) [`related`]
- 10.137.2.42** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_-`
`geometrically_covers_Pointset_Powerset_Octagonal_Shape_mpz_class`
(`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t y`) [`related`]
- 10.137.2.43** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_-`
`geometrically_equals_Pointset_Powerset_Octagonal_Shape_mpz_class`
(`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t x`,
`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t y`) [`related`]

- 10.137.2.44** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_intersection_-
assign (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t x,
ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t y) [related]`
- 10.137.2.45** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_is_bounded
(ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph) [related]`
- 10.137.2.46** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_is_discrete
(ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph) [related]`
- 10.137.2.47** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_is_-
disjoint_from_Pointset_Powerset_Octagonal_Shape_mpz_class
(ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t x,
ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t y) [related]`
- 10.137.2.48** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_is_empty
(ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph) [related]`
- 10.137.2.49** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_is_topologically_closed
(ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph) [related]`
- 10.137.2.50** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_is_universe
(ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph) [related]`
- 10.137.2.51** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_map_space_dimensions
(ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph, ppl_dimension_type
maps[], size_t n) [related]`

- 10.137.2.52** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_maximize`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`,
`ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`,
`int * poptimum`) [`related`]
- 10.137.2.53** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_maximize_with_point`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`,
`ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`,
`int * poptimum`, `ppl_Generator_t point`) [`related`]
- 10.137.2.54** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_minimize`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`,
`ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`,
`int * poptimum`) [`related`]
- 10.137.2.55** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_minimize_with_point`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`,
`ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`,
`int * poptimum`, `ppl_Generator_t point`) [`related`]
- 10.137.2.56** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_OK`
 (`ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`) [`related`]
- 10.137.2.57** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_omega_reduce`
 (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`) [`related`]
- 10.137.2.58** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_pairwise_reduce`
 (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`) [`related`]
- 10.137.2.59** `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_refine_with_congruence`
 (`ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph`, `ppl_const_Congruence_t c`) [`related`]

- 10.137.2.60 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_refine_with_-
congruences (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph,
ppl_const_Congruence_System_t cs)` [**related**]
- 10.137.2.61 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_refine_with_constraint
(ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph, ppl_const_Constraint_t
c)` [**related**]
- 10.137.2.62 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_refine_with_-
constraints (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph,
ppl_const_Constraint_System_t cs)` [**related**]
- 10.137.2.63 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_relation_with_Congruence
(ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph,
ppl_const_Congruence_t c)` [**related**]
- 10.137.2.64 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_relation_with_Constraint
(ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph,
ppl_const_Constraint_t c)` [**related**]
- 10.137.2.65 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_relation_with_Generator
(ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph,
ppl_const_Generator_t c)` [**related**]
- 10.137.2.66 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_remove_higher_-
space_dimensions (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph,
ppl_dimension_type d)` [**related**]
- 10.137.2.67 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_remove_space_dimensions
(ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph, ppl_dimension_type ds[],
size_t n)` [**related**]

- 10.137.2.68 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_simplify_using_context_assign (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t y)` [`related`]
- 10.137.2.69 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_size (ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ps, size_t * sz)` [`related`]
- 10.137.2.70 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_space_dimension (ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph, ppl_dimension_type * m)` [`related`]
- 10.137.2.71 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_strictly_contains_Pointset_Powerset_Octagonal_Shape_mpz_class (ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t y)` [`related`]
- 10.137.2.72 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_time_elapse_assign (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t y)` [`related`]
- 10.137.2.73 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_topological_closure_assign (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph)` [`related`]
- 10.137.2.74 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_total_memory_in_bytes (ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t ps, size_t * sz)` [`related`]
- 10.137.2.75 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_unconstrain_space_dimension (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph, ppl_dimension_type var)` [`related`]

10.137.2.76 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_unconstrain_space_dimensions (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t ph, ppl_dimension_type ds[ ], size_t n)` [**related**]

10.137.2.77 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_upper_bound_assign (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t y)` [**related**]

10.137.2.78 `int ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_upper_bound_assign_if_exact (ppl_Pointset_Powerset_Octagonal_Shape_mpz_class_t x, ppl_const_Pointset_Powerset_Octagonal_Shape_mpz_class_t y)` [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.138 `ppl_Pointset_Powerset_Rational_Box_const_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Rational_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl\_new\_Pointset\_Powerset\_Rational\_Box\_const\_iterator (ppl_Pointset_Powerset_Rational_Box_const_iterator_t *pit)`
- `int ppl\_new\_Pointset\_Powerset\_Rational\_Box\_const\_iterator\_from\_const\_iterator (ppl_Pointset_Powerset_Rational_Box_const_iterator_t *px, ppl_const_Pointset_Powerset_Rational_Box_const_iterator_t y)`
- `int ppl\_Pointset\_Powerset\_Rational\_Box\_const\_iterator\_begin (ppl_const_Pointset_Powerset_Rational_Box_t ps, ppl_Pointset_Powerset_Rational_Box_const_iterator_t psit)`
- `int ppl\_Pointset\_Powerset\_Rational\_Box\_const\_iterator\_end (ppl_const_Pointset_Powerset_Rational_Box_t ps, ppl_Pointset_Powerset_Rational_Box_const_iterator_t psit)`
- `int ppl\_Pointset\_Powerset\_Rational\_Box\_const\_iterator\_equal\_test (ppl_const_Pointset_Powerset_Rational_Box_const_iterator_t x, ppl_const_Pointset_Powerset_Rational_Box_const_iterator_t y)`
- `int ppl\_Pointset\_Powerset\_Rational\_Box\_const\_iterator\_increment (ppl_Pointset_Powerset_Rational_Box_const_iterator_t psit)`
- `int ppl\_Pointset\_Powerset\_Rational\_Box\_const\_iterator\_decrement (ppl_Pointset_Powerset_Rational_Box_const_iterator_t psit)`
- `int ppl\_Pointset\_Powerset\_Rational\_Box\_const\_iterator\_dereference (ppl_const_Pointset_Powerset_Rational_Box_const_iterator_t ps, ppl_const_Rational_Box_t *d)`

- int [ppl_delete_Pointset_Powerset_Rational_Box_const_iterator](#) (ppl_const_Pointset_Powerset_Rational_Box_const_iterator_t *psit*)

10.138.1 Detailed Description

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Rational_Box_tag](#).

10.138.2 Friends And Related Function Documentation

- 10.138.2.1** int [ppl_delete_Pointset_Powerset_Rational_Box_const_iterator](#) (ppl_const_Pointset_Powerset_Rational_Box_const_iterator_t *psit*) [[related](#)]
- 10.138.2.2** int [ppl_new_Pointset_Powerset_Rational_Box_const_iterator](#) (ppl_Pointset_Powerset_Rational_Box_const_iterator_t * *pit*) [[related](#)]
- 10.138.2.3** int [ppl_new_Pointset_Powerset_Rational_Box_const_iterator_from_const_iterator](#) (ppl_Pointset_Powerset_Rational_Box_const_iterator_t * *px*, ppl_const_Pointset_Powerset_Rational_Box_const_iterator_t *y*) [[related](#)]
- 10.138.2.4** int [ppl_Pointset_Powerset_Rational_Box_const_iterator_begin](#) (ppl_const_Pointset_Powerset_Rational_Box_t *ps*, ppl_Pointset_Powerset_Rational_Box_const_iterator_t *psit*) [[related](#)]
- 10.138.2.5** int [ppl_Pointset_Powerset_Rational_Box_const_iterator_decrement](#) (ppl_Pointset_Powerset_Rational_Box_const_iterator_t *psit*) [[related](#)]
- 10.138.2.6** int [ppl_Pointset_Powerset_Rational_Box_const_iterator_dereference](#) (ppl_const_Pointset_Powerset_Rational_Box_const_iterator_t *ps*, ppl_const_Rational_Box_t * *d*) [[related](#)]
- 10.138.2.7** int [ppl_Pointset_Powerset_Rational_Box_const_iterator_end](#) (ppl_const_Pointset_Powerset_Rational_Box_t *ps*, ppl_Pointset_Powerset_Rational_Box_const_iterator_t *psit*) [[related](#)]

10.138.2.8 `int ppl_Pointset_Powerset_Rational_Box_const_iterator_equal_test`
 (`ppl_const_Pointset_Powerset_Rational_Box_const_iterator_t x`,
`ppl_const_Pointset_Powerset_Rational_Box_const_iterator_t y`) [**related**]

10.138.2.9 `int ppl_Pointset_Powerset_Rational_Box_const_iterator_increment`
 (`ppl_Pointset_Powerset_Rational_Box_const_iterator_t psit`) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.139 `ppl_Pointset_Powerset_Rational_Box_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Rational_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int` [ppl_new_Pointset_Powerset_Rational_Box_iterator](#) (`ppl_Pointset_Powerset_Rational_Box_iterator_t *pit`)
- `int` [ppl_new_Pointset_Powerset_Rational_Box_iterator_from_iterator](#) (`ppl_Pointset_Powerset_Rational_Box_iterator_t *px`, `ppl_const_Pointset_Powerset_Rational_Box_iterator_t y`)
- `int` [ppl_Pointset_Powerset_Rational_Box_iterator_begin](#) (`ppl_Pointset_Powerset_Rational_Box_t ps`, `ppl_Pointset_Powerset_Rational_Box_iterator_t psit`)
- `int` [ppl_Pointset_Powerset_Rational_Box_iterator_end](#) (`ppl_Pointset_Powerset_Rational_Box_t ps`, `ppl_Pointset_Powerset_Rational_Box_iterator_t psit`)
- `int` [ppl_Pointset_Powerset_Rational_Box_iterator_equal_test](#) (`ppl_const_Pointset_Powerset_Rational_Box_iterator_t x`, `ppl_const_Pointset_Powerset_Rational_Box_iterator_t y`)
- `int` [ppl_Pointset_Powerset_Rational_Box_iterator_increment](#) (`ppl_Pointset_Powerset_Rational_Box_iterator_t psit`)
- `int` [ppl_Pointset_Powerset_Rational_Box_iterator_decrement](#) (`ppl_Pointset_Powerset_Rational_Box_iterator_t psit`)
- `int` [ppl_Pointset_Powerset_Rational_Box_iterator_dereference](#) (`ppl_const_Pointset_Powerset_Rational_Box_iterator_t ps`, `ppl_const_Rational_Box_t *d`)
- `int` [ppl_delete_Pointset_Powerset_Rational_Box_iterator](#) (`ppl_const_Pointset_Powerset_Rational_Box_iterator_t psit`)

10.139.1 Detailed Description

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Rational_Box_tag](#).

10.139.2 Friends And Related Function Documentation

- 10.139.2.1** `int ppl_delete_Pointset_Powerset_Rational_Box_iterator`
(`ppl_const_Pointset_Powerset_Rational_Box_iterator_t psit`) [**related**]
- 10.139.2.2** `int ppl_new_Pointset_Powerset_Rational_Box_iterator` (`ppl_Pointset_Powerset_Rational_Box_iterator_t * pit`) [**related**]
- 10.139.2.3** `int ppl_new_Pointset_Powerset_Rational_Box_iterator_from_iterator` (`ppl_Pointset_Powerset_Rational_Box_iterator_t * px`,
`ppl_const_Pointset_Powerset_Rational_Box_iterator_t y`) [**related**]
- 10.139.2.4** `int ppl_Pointset_Powerset_Rational_Box_iterator_begin` (`ppl_Pointset_Powerset_Rational_Box_t ps`, `ppl_Pointset_Powerset_Rational_Box_iterator_t psit`) [**related**]
- 10.139.2.5** `int ppl_Pointset_Powerset_Rational_Box_iterator_decrement`
(`ppl_Pointset_Powerset_Rational_Box_iterator_t psit`) [**related**]
- 10.139.2.6** `int ppl_Pointset_Powerset_Rational_Box_iterator_dereference`
(`ppl_const_Pointset_Powerset_Rational_Box_iterator_t ps`, `ppl_const_Rational_Box_t * d`) [**related**]
- 10.139.2.7** `int ppl_Pointset_Powerset_Rational_Box_iterator_end` (`ppl_Pointset_Powerset_Rational_Box_t ps`, `ppl_Pointset_Powerset_Rational_Box_iterator_t psit`) [**related**]
- 10.139.2.8** `int ppl_Pointset_Powerset_Rational_Box_iterator_equal_test`
(`ppl_const_Pointset_Powerset_Rational_Box_iterator_t x`,
`ppl_const_Pointset_Powerset_Rational_Box_iterator_t y`) [**related**]

10.139.2.9 `int ppl_Pointset_Powerset_Rational_Box_iterator_increment` (`ppl_Pointset_Powerset_Rational_Box_iterator_t psit`) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.140 `ppl_Pointset_Powerset_Rational_Box_tag` Interface Reference

Types and functions for `ppl_Pointset_Powerset_Rational_Box_tag`.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Pointset_Powerset_Rational_Box` (`ppl_const_Pointset_Powerset_Rational_Box_t ph`)
- `int ppl_new_Pointset_Powerset_Rational_Box_from_space_dimension` (`ppl_Pointset_Powerset_Rational_Box_t *pph`, `ppl_dimension_type d`, `int empty`)
- `int ppl_new_Pointset_Powerset_Rational_Box_from_Pointset_Powerset_Rational_Box` (`ppl_Pointset_Powerset_Rational_Box_t *pph`, `ppl_const_Pointset_Powerset_Rational_Box_t ph`)
- `int ppl_new_Pointset_Powerset_Rational_Box_from_Rational_Box` (`ppl_Pointset_Powerset_Rational_Box_t *pph`, `ppl_const_Rational_Box_t ph`)
- `int ppl_new_Pointset_Powerset_Rational_Box_from_Pointset_Powerset_Rational_Box_with_complexity` (`ppl_Pointset_Powerset_Rational_Box_t *pph`, `ppl_const_Pointset_Powerset_Rational_Box_t ph`, `int complexity`)
- `int ppl_new_Pointset_Powerset_Rational_Box_from_Rational_Box_with_complexity` (`ppl_Pointset_Powerset_Rational_Box_t *pph`, `ppl_const_Rational_Box_t ph`, `int complexity`)
- `int ppl_new_Pointset_Powerset_Rational_Box_from_Constraint_System` (`ppl_Pointset_Powerset_Rational_Box_t *pph`, `ppl_const_Constraint_System_t cs`)
- `int ppl_new_Pointset_Powerset_Rational_Box_from_Congruence_System` (`ppl_Pointset_Powerset_Rational_Box_t *pph`, `ppl_const_Congruence_System_t cs`)
- `int ppl_Pointset_Powerset_Rational_Box_space_dimension` (`ppl_const_Pointset_Powerset_Rational_Box_t ph`, `ppl_dimension_type *m`)
- `int ppl_Pointset_Powerset_Rational_Box_affine_dimension` (`ppl_const_Pointset_Powerset_Rational_Box_t ph`, `ppl_dimension_type *m`)
- `int ppl_Pointset_Powerset_Rational_Box_relation_with_Constraint` (`ppl_const_Pointset_Powerset_Rational_Box_t ph`, `ppl_const_Constraint_t c`)
- `int ppl_Pointset_Powerset_Rational_Box_relation_with_Generator` (`ppl_const_Pointset_Powerset_Rational_Box_t ph`, `ppl_const_Generator_t c`)
- `int ppl_Pointset_Powerset_Rational_Box_relation_with_Congruence` (`ppl_const_Pointset_Powerset_Rational_Box_t ph`, `ppl_const_Congruence_t c`)
- `int ppl_Pointset_Powerset_Rational_Box_is_empty` (`ppl_const_Pointset_Powerset_Rational_Box_t ph`)
- `int ppl_Pointset_Powerset_Rational_Box_is_universe` (`ppl_const_Pointset_Powerset_Rational_Box_t ph`)
- `int ppl_Pointset_Powerset_Rational_Box_is_bounded` (`ppl_const_Pointset_Powerset_Rational_Box_t ph`)

- int [ppl_Pointset_Powerset_Rational_Box_contains_integer_point](#) (ppl_const_Pointset_Powerset_Rational_Box_t ph)
- int [ppl_Pointset_Powerset_Rational_Box_is_topologically_closed](#) (ppl_const_Pointset_Powerset_Rational_Box_t ph)
- int [ppl_Pointset_Powerset_Rational_Box_is_discrete](#) (ppl_const_Pointset_Powerset_Rational_Box_t ph)
- int [ppl_Pointset_Powerset_Rational_Box_topological_closure_assign](#) (ppl_Pointset_Powerset_Rational_Box_t ph)
- int [ppl_Pointset_Powerset_Rational_Box_pairwise_reduce](#) (ppl_Pointset_Powerset_Rational_Box_t ph)
- int [ppl_Pointset_Powerset_Rational_Box_omega_reduce](#) (ppl_Pointset_Powerset_Rational_Box_t ph)
- int [ppl_Pointset_Powerset_Rational_Box_bounds_from_above](#) (ppl_const_Pointset_Powerset_Rational_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_Rational_Box_bounds_from_below](#) (ppl_const_Pointset_Powerset_Rational_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_Rational_Box_maximize](#) (ppl_const_Pointset_Powerset_Rational_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_Rational_Box_minimize](#) (ppl_const_Pointset_Powerset_Rational_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_Rational_Box_maximize_with_point](#) (ppl_const_Pointset_Powerset_Rational_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_Rational_Box_minimize_with_point](#) (ppl_const_Pointset_Powerset_Rational_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_Rational_Box_contains_Pointset_Powerset_Rational_Box](#) (ppl_const_Pointset_Powerset_Rational_Box_t x, ppl_const_Pointset_Powerset_Rational_Box_t y)
- int [ppl_Pointset_Powerset_Rational_Box_strictly_contains_Pointset_Powerset_Rational_Box](#) (ppl_const_Pointset_Powerset_Rational_Box_t x, ppl_const_Pointset_Powerset_Rational_Box_t y)
- int [ppl_Pointset_Powerset_Rational_Box_is_disjoint_from_Pointset_Powerset_Rational_Box](#) (ppl_const_Pointset_Powerset_Rational_Box_t x, ppl_const_Pointset_Powerset_Rational_Box_t y)
- int [ppl_Pointset_Powerset_Rational_Box_geometrically_covers_Pointset_Powerset_Rational_Box](#) (ppl_const_Pointset_Powerset_Rational_Box_t x, ppl_const_Pointset_Powerset_Rational_Box_t y)
- int [ppl_Pointset_Powerset_Rational_Box_geometrically_equals_Pointset_Powerset_Rational_Box](#) (ppl_const_Pointset_Powerset_Rational_Box_t x, ppl_const_Pointset_Powerset_Rational_Box_t y)
- int [ppl_Pointset_Powerset_Rational_Box_equals_Pointset_Powerset_Rational_Box](#) (ppl_const_Pointset_Powerset_Rational_Box_t x, ppl_const_Pointset_Powerset_Rational_Box_t y)
- int [ppl_Pointset_Powerset_Rational_Box_OK](#) (ppl_const_Pointset_Powerset_Rational_Box_t ph)
- int [ppl_Pointset_Powerset_Rational_Box_add_constraint](#) (ppl_Pointset_Powerset_Rational_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Rational_Box_add_congruence](#) (ppl_Pointset_Powerset_Rational_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Rational_Box_add_constraints](#) (ppl_Pointset_Powerset_Rational_Box_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_Rational_Box_add_congruences](#) (ppl_Pointset_Powerset_Rational_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_Rational_Box_refine_with_constraint](#) (ppl_Pointset_Powerset_Rational_Box_t ph, ppl_const_Constraint_t c)

- [int ppl_Pointset_Powerset_Rational_Box_refine_with_congruence](#) (ppl_Pointset_Powerset_Rational_Box_t ph, ppl_const_Congruence_t c)
- [int ppl_Pointset_Powerset_Rational_Box_refine_with_constraints](#) (ppl_Pointset_Powerset_Rational_Box_t ph, ppl_const_Constraint_System_t cs)
- [int ppl_Pointset_Powerset_Rational_Box_refine_with_congruences](#) (ppl_Pointset_Powerset_Rational_Box_t ph, ppl_const_Congruence_System_t cs)
- [int ppl_Pointset_Powerset_Rational_Box_intersection_assign](#) (ppl_Pointset_Powerset_Rational_Box_t x, ppl_const_Pointset_Powerset_Rational_Box_t y)
- [int ppl_Pointset_Powerset_Rational_Box_upper_bound_assign](#) (ppl_Pointset_Powerset_Rational_Box_t x, ppl_const_Pointset_Powerset_Rational_Box_t y)
- [int ppl_Pointset_Powerset_Rational_Box_difference_assign](#) (ppl_Pointset_Powerset_Rational_Box_t x, ppl_const_Pointset_Powerset_Rational_Box_t y)
- [int ppl_Pointset_Powerset_Rational_Box_concatenate_assign](#) (ppl_Pointset_Powerset_Rational_Box_t x, ppl_const_Pointset_Powerset_Rational_Box_t y)
- [int ppl_Pointset_Powerset_Rational_Box_time_elapse_assign](#) (ppl_Pointset_Powerset_Rational_Box_t x, ppl_const_Pointset_Powerset_Rational_Box_t y)
- [int ppl_Pointset_Powerset_Rational_Box_upper_bound_assign_if_exact](#) (ppl_Pointset_Powerset_Rational_Box_t x, ppl_const_Pointset_Powerset_Rational_Box_t y)
- [int ppl_Pointset_Powerset_Rational_Box_simplify_using_context_assign](#) (ppl_Pointset_Powerset_Rational_Box_t x, ppl_const_Pointset_Powerset_Rational_Box_t y)
- [int ppl_Pointset_Powerset_Rational_Box_constrains](#) (ppl_Pointset_Powerset_Rational_Box_t ph, [ppl_dimension_type](#) var)
- [int ppl_Pointset_Powerset_Rational_Box_unconstrain_space_dimension](#) (ppl_Pointset_Powerset_Rational_Box_t ph, [ppl_dimension_type](#) var)
- [int ppl_Pointset_Powerset_Rational_Box_unconstrain_space_dimensions](#) (ppl_Pointset_Powerset_Rational_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- [int ppl_Pointset_Powerset_Rational_Box_affine_image](#) (ppl_Pointset_Powerset_Rational_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- [int ppl_Pointset_Powerset_Rational_Box_affine_preimage](#) (ppl_Pointset_Powerset_Rational_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- [int ppl_Pointset_Powerset_Rational_Box_bounded_affine_image](#) (ppl_Pointset_Powerset_Rational_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- [int ppl_Pointset_Powerset_Rational_Box_bounded_affine_preimage](#) (ppl_Pointset_Powerset_Rational_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- [int ppl_Pointset_Powerset_Rational_Box_generalized_affine_image](#) (ppl_Pointset_Powerset_Rational_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- [int ppl_Pointset_Powerset_Rational_Box_generalized_affine_preimage](#) (ppl_Pointset_Powerset_Rational_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- [int ppl_Pointset_Powerset_Rational_Box_generalized_affine_image_lhs_rhs](#) (ppl_Pointset_Powerset_Rational_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- [int ppl_Pointset_Powerset_Rational_Box_generalized_affine_preimage_lhs_rhs](#) (ppl_Pointset_Powerset_Rational_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- [int ppl_Pointset_Powerset_Rational_Box_add_space_dimensions_and_embed](#) (ppl_Pointset_Powerset_Rational_Box_t ph, [ppl_dimension_type](#) d)

- `int ppl_Pointset_Powerset_Rational_Box_add_space_dimensions_and_project` (`ppl_Pointset_Powerset_Rational_Box_t` *ph*, `ppl_dimension_type` *d*)
- `int ppl_Pointset_Powerset_Rational_Box_remove_space_dimensions` (`ppl_Pointset_Powerset_Rational_Box_t` *ph*, `ppl_dimension_type` *ds*[], `size_t` *n*)
- `int ppl_Pointset_Powerset_Rational_Box_remove_higher_space_dimensions` (`ppl_Pointset_Powerset_Rational_Box_t` *ph*, `ppl_dimension_type` *d*)
- `int ppl_Pointset_Powerset_Rational_Box_expand_space_dimension` (`ppl_Pointset_Powerset_Rational_Box_t` *ph*, `ppl_dimension_type` *d*, `ppl_dimension_type` *m*)
- `int ppl_Pointset_Powerset_Rational_Box_fold_space_dimensions` (`ppl_Pointset_Powerset_Rational_Box_t` *ph*, `ppl_dimension_type` *ds*[], `size_t` *n*, `ppl_dimension_type` *d*)
- `int ppl_Pointset_Powerset_Rational_Box_map_space_dimensions` (`ppl_Pointset_Powerset_Rational_Box_t` *ph*, `ppl_dimension_type` *maps*[], `size_t` *n*)
- `int ppl_Pointset_Powerset_Rational_Box_drop_some_non_integer_points` (`ppl_Pointset_Powerset_Rational_Box_t` *ph*, `int` *complexity*)
- `int ppl_Pointset_Powerset_Rational_Box_drop_some_non_integer_points_2` (`ppl_Pointset_Powerset_Rational_Box_t` *ph*, `ppl_dimension_type` *ds*[], `size_t` *n*, `int` *complexity*)
- `int ppl_Pointset_Powerset_Rational_Box_external_memory_in_bytes` (`ppl_const_Pointset_Powerset_Rational_Box_t` *ps*, `size_t` **sz*)
- `int ppl_Pointset_Powerset_Rational_Box_total_memory_in_bytes` (`ppl_const_Pointset_Powerset_Rational_Box_t` *ps*, `size_t` **sz*)
- `int ppl_Pointset_Powerset_Rational_Box_size` (`ppl_const_Pointset_Powerset_Rational_Box_t` *ps*, `size_t` **sz*)
- `int ppl_Pointset_Powerset_Rational_Box_add_disjunct` (`ppl_Pointset_Powerset_Rational_Box_t` *ps*, `ppl_const_Rational_Box_t` *d*)
- `int ppl_Pointset_Powerset_Rational_Box_drop_disjunct` (`ppl_Pointset_Powerset_Rational_Box_t` *ps*, `ppl_const_Pointset_Powerset_Rational_Box_iterator_t` *cit*, `ppl_Pointset_Powerset_Rational_Box_iterator_t` *it*)
- `int ppl_Pointset_Powerset_Rational_Box_drop_disjuncts` (`ppl_Pointset_Powerset_Rational_Box_t` *ps*, `ppl_const_Pointset_Powerset_Rational_Box_iterator_t` *first*, `ppl_const_Pointset_Powerset_Rational_Box_iterator_t` *last*)

10.140.1 Detailed Description

Types and functions for `ppl_Pointset_Powerset_Rational_Box_tag`.

10.140.2 Friends And Related Function Documentation

10.140.2.1 `int ppl_delete_Pointset_Powerset_Rational_Box` (`ppl_const_Pointset_Powerset_Rational_Box_t` *ph*) [**related**]

10.140.2.2 `int ppl_new_Pointset_Powerset_Rational_Box_from_Congruence_System` (`ppl_Pointset_Powerset_Rational_Box_t` **pph*, `ppl_const_Congruence_System_t` *cs*) [**related**]

- 10.140.2.3 `int ppl_new_Pointset_Powerset_Rational_Box_from_Constraint_System`
 (`ppl_Pointset_Powerset_Rational_Box_t *pph`, `ppl_const_Constraint_System_t cs`)
 [related]
- 10.140.2.4 `int ppl_new_Pointset_Powerset_Rational_Box_from_Pointset_-`
`Powerset_Rational_Box` (`ppl_Pointset_Powerset_Rational_Box_t *pph`,
`ppl_const_Pointset_Powerset_Rational_Box_t ph`) [related]
- 10.140.2.5 `int ppl_new_Pointset_Powerset_Rational_Box_from_Pointset_Powerset_-`
`Rational_Box_with_complexity` (`ppl_Pointset_Powerset_Rational_Box_t *pph`,
`ppl_const_Pointset_Powerset_Rational_Box_t ph`, `int complexity`) [related]
- 10.140.2.6 `int ppl_new_Pointset_Powerset_Rational_Box_from_Rational_Box`
 (`ppl_Pointset_Powerset_Rational_Box_t *pph`, `ppl_const_Rational_Box_t ph`)
 [related]
- 10.140.2.7 `int ppl_new_Pointset_Powerset_Rational_Box_from_Rational_Box_with_complexity`
 (`ppl_Pointset_Powerset_Rational_Box_t *pph`, `ppl_const_Rational_Box_t ph`, `int`
`complexity`) [related]
- 10.140.2.8 `int ppl_new_Pointset_Powerset_Rational_Box_from_space_dimension`
 (`ppl_Pointset_Powerset_Rational_Box_t *pph`, `ppl_dimension_type d`, `int empty`)
 [related]
- 10.140.2.9 `int ppl_Pointset_Powerset_Rational_Box_add_congruence` (`ppl_-`
`Pointset_Powerset_Rational_Box_t ph`, `ppl_const_Congruence_t c`)
 [related]
- 10.140.2.10 `int ppl_Pointset_Powerset_Rational_Box_add_congruences` (`ppl_Pointset_-`
`Powerset_Rational_Box_t ph`, `ppl_const_Congruence_System_t cs`)
 [related]

- 10.140.2.11 `int ppl_Pointset_Powerset_Rational_Box_add_constraint (ppl_Pointset_Powerset_Rational_Box_t ph, ppl_const_Constraint_t c)` `[related]`
- 10.140.2.12 `int ppl_Pointset_Powerset_Rational_Box_add_constraints (ppl_Pointset_Powerset_Rational_Box_t ph, ppl_const_Constraint_System_t cs)` `[related]`
- 10.140.2.13 `int ppl_Pointset_Powerset_Rational_Box_add_disjunct (ppl_Pointset_Powerset_Rational_Box_t ps, ppl_const_Rational_Box_t d)` `[related]`
- 10.140.2.14 `int ppl_Pointset_Powerset_Rational_Box_add_space_dimensions_and_embed (ppl_Pointset_Powerset_Rational_Box_t ph, ppl_dimension_type d)` `[related]`
- 10.140.2.15 `int ppl_Pointset_Powerset_Rational_Box_add_space_dimensions_and_project (ppl_Pointset_Powerset_Rational_Box_t ph, ppl_dimension_type d)` `[related]`
- 10.140.2.16 `int ppl_Pointset_Powerset_Rational_Box_affine_dimension (ppl_Const_Pointset_Powerset_Rational_Box_t ph, ppl_dimension_type * m)` `[related]`
- 10.140.2.17 `int ppl_Pointset_Powerset_Rational_Box_affine_image (ppl_Pointset_Powerset_Rational_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` `[related]`
- 10.140.2.18 `int ppl_Pointset_Powerset_Rational_Box_affine_preimage (ppl_Pointset_Powerset_Rational_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` `[related]`

- 10.140.2.19 `int ppl_Pointset_Powerset_Rational_Box_bounded_affine_image`
 (`ppl_Pointset_Powerset_Rational_Box_t ph`, `ppl_dimension_type var`,
`ppl_const_Linear_Expression_t lb`, `ppl_const_Linear_Expression_t ub`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.140.2.20 `int ppl_Pointset_Powerset_Rational_Box_bounded_affine_preimage`
 (`ppl_Pointset_Powerset_Rational_Box_t ph`, `ppl_dimension_type var`,
`ppl_const_Linear_Expression_t lb`, `ppl_const_Linear_Expression_t ub`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.140.2.21 `int ppl_Pointset_Powerset_Rational_Box_bounds_from_above`
 (`ppl_const_Pointset_Powerset_Rational_Box_t ph`, `ppl_const_Linear_Expression_t`
`le`) [`related`]
- 10.140.2.22 `int ppl_Pointset_Powerset_Rational_Box_bounds_from_below`
 (`ppl_const_Pointset_Powerset_Rational_Box_t ph`, `ppl_const_Linear_Expression_t`
`le`) [`related`]
- 10.140.2.23 `int ppl_Pointset_Powerset_Rational_Box_concatenate_assign` (`ppl_Pointset_Powerset_Rational_Box_t x`, `ppl_const_Pointset_Powerset_Rational_Box_t y`)
 [`related`]
- 10.140.2.24 `int ppl_Pointset_Powerset_Rational_Box_constrains` (`ppl_Pointset_Powerset_Rational_Box_t ph`, `ppl_dimension_type var`)
 [`related`]
- 10.140.2.25 `int ppl_Pointset_Powerset_Rational_Box_contains_integer_point`
 (`ppl_const_Pointset_Powerset_Rational_Box_t ph`) [`related`]
- 10.140.2.26 `int ppl_Pointset_Powerset_Rational_Box_contains_Pointset_Powerset_Rational_Box` (`ppl_const_Pointset_Powerset_Rational_Box_t x`,
`ppl_const_Pointset_Powerset_Rational_Box_t y`) [`related`]

- 10.140.2.27 `int ppl_Pointset_Powerset_Rational_Box_difference_assign (ppl_Pointset_Powerset_Rational_Box_t x, ppl_const_Pointset_Powerset_Rational_Box_t y)` **[related]**
- 10.140.2.28 `int ppl_Pointset_Powerset_Rational_Box_drop_disjunct (ppl_Pointset_Powerset_Rational_Box_t ps, ppl_const_Pointset_Powerset_Rational_Box_iterator_t cit, ppl_Pointset_Powerset_Rational_Box_iterator_t it)` **[related]**
- 10.140.2.29 `int ppl_Pointset_Powerset_Rational_Box_drop_disjuncts (ppl_Pointset_Powerset_Rational_Box_t ps, ppl_const_Pointset_Powerset_Rational_Box_iterator_t first, ppl_const_Pointset_Powerset_Rational_Box_iterator_t last)` **[related]**
- 10.140.2.30 `int ppl_Pointset_Powerset_Rational_Box_drop_some_non_integer_points (ppl_Pointset_Powerset_Rational_Box_t ph, int complexity)` **[related]**
- 10.140.2.31 `int ppl_Pointset_Powerset_Rational_Box_drop_some_non_integer_points_2 (ppl_Pointset_Powerset_Rational_Box_t ph, ppl_dimension_type ds[], size_t n, int complexity)` **[related]**
- 10.140.2.32 `int ppl_Pointset_Powerset_Rational_Box_equals_Pointset_Powerset_Rational_Box (ppl_const_Pointset_Powerset_Rational_Box_t x, ppl_const_Pointset_Powerset_Rational_Box_t y)` **[related]**
- 10.140.2.33 `int ppl_Pointset_Powerset_Rational_Box_expand_space_dimension (ppl_Pointset_Powerset_Rational_Box_t ph, ppl_dimension_type d, ppl_dimension_type m)` **[related]**
- 10.140.2.34 `int ppl_Pointset_Powerset_Rational_Box_external_memory_in_bytes (ppl_const_Pointset_Powerset_Rational_Box_t ps, size_t * sz)` **[related]**

- 10.140.2.35 `int ppl_Pointset_Powerset_Rational_Box_fold_space_dimensions`
 (`ppl_Pointset_Powerset_Rational_Box_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`,
`ppl_dimension_type d`) [`related`]
- 10.140.2.36 `int ppl_Pointset_Powerset_Rational_Box_generalized_affine_image`
 (`ppl_Pointset_Powerset_Rational_Box_t ph`, `ppl_dimension_type var`, `enum`
`ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.140.2.37 `int ppl_Pointset_Powerset_Rational_Box_generalized_affine_image_lhs_rhs`
 (`ppl_Pointset_Powerset_Rational_Box_t ph`, `ppl_const_Linear_Expression_t lhs`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
 [`related`]
- 10.140.2.38 `int ppl_Pointset_Powerset_Rational_Box_generalized_affine_preimage`
 (`ppl_Pointset_Powerset_Rational_Box_t ph`, `ppl_dimension_type var`, `enum`
`ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [`related`]
- 10.140.2.39 `int ppl_Pointset_Powerset_Rational_Box_generalized_affine_preimage_lhs_rhs`
 (`ppl_Pointset_Powerset_Rational_Box_t ph`, `ppl_const_Linear_Expression_t lhs`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
 [`related`]
- 10.140.2.40 `int ppl_Pointset_Powerset_Rational_Box_geometrically_covers_Pointset -`
`Powerset_Rational_Box` (`ppl_const_Pointset_Powerset_Rational_Box_t x`,
`ppl_const_Pointset_Powerset_Rational_Box_t y`) [`related`]
- 10.140.2.41 `int ppl_Pointset_Powerset_Rational_Box_geometrically_equals_Pointset -`
`Powerset_Rational_Box` (`ppl_const_Pointset_Powerset_Rational_Box_t x`,
`ppl_const_Pointset_Powerset_Rational_Box_t y`) [`related`]

- 10.140.2.42** `int ppl_Pointset_Powerset_Rational_Box_intersection_assign (ppl_Pointset_Powerset_Rational_Box_t x, ppl_const_Pointset_Powerset_Rational_Box_t y)` **[related]**
- 10.140.2.43** `int ppl_Pointset_Powerset_Rational_Box_is_bounded (ppl_const_Pointset_Powerset_Rational_Box_t ph)` **[related]**
- 10.140.2.44** `int ppl_Pointset_Powerset_Rational_Box_is_discrete (ppl_const_Pointset_Powerset_Rational_Box_t ph)` **[related]**
- 10.140.2.45** `int ppl_Pointset_Powerset_Rational_Box_is_disjoint_from_Pointset_Powerset_Rational_Box (ppl_const_Pointset_Powerset_Rational_Box_t x, ppl_const_Pointset_Powerset_Rational_Box_t y)` **[related]**
- 10.140.2.46** `int ppl_Pointset_Powerset_Rational_Box_is_empty (ppl_const_Pointset_Powerset_Rational_Box_t ph)` **[related]**
- 10.140.2.47** `int ppl_Pointset_Powerset_Rational_Box_is_topologically_closed (ppl_const_Pointset_Powerset_Rational_Box_t ph)` **[related]**
- 10.140.2.48** `int ppl_Pointset_Powerset_Rational_Box_is_universe (ppl_const_Pointset_Powerset_Rational_Box_t ph)` **[related]**
- 10.140.2.49** `int ppl_Pointset_Powerset_Rational_Box_map_space_dimensions (ppl_Pointset_Powerset_Rational_Box_t ph, ppl_dimension_type maps[], size_t n)` **[related]**
- 10.140.2.50** `int ppl_Pointset_Powerset_Rational_Box_maximize (ppl_const_Pointset_Powerset_Rational_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)` **[related]**

- 10.140.2.51** `int ppl_Pointset_Powerset_Rational_Box_maximize_with_point`
 (`ppl_const_Pointset_Powerset_Rational_Box_t ph`, `ppl_const_Linear_Expression_t le`,
`ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int *poptimum`, `ppl_Generator_t`
`point`) [`related`]
- 10.140.2.52** `int ppl_Pointset_Powerset_Rational_Box_minimize` (`ppl_const_Pointset_Powerset_-`
`Rational_Box_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`,
`ppl_Coefficient_t ext_d`, `int *poptimum`) [`related`]
- 10.140.2.53** `int ppl_Pointset_Powerset_Rational_Box_minimize_with_point`
 (`ppl_const_Pointset_Powerset_Rational_Box_t ph`, `ppl_const_Linear_Expression_t le`,
`ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int *poptimum`, `ppl_Generator_t`
`point`) [`related`]
- 10.140.2.54** `int ppl_Pointset_Powerset_Rational_Box_OK` (`ppl_const_Pointset_Powerset_-`
`Rational_Box_t ph`) [`related`]
- 10.140.2.55** `int ppl_Pointset_Powerset_Rational_Box_omega_reduce`
 (`ppl_Pointset_Powerset_Rational_Box_t ph`) [`related`]
- 10.140.2.56** `int ppl_Pointset_Powerset_Rational_Box_pairwise_reduce`
 (`ppl_Pointset_Powerset_Rational_Box_t ph`) [`related`]
- 10.140.2.57** `int ppl_Pointset_Powerset_Rational_Box_refine_with_congruence`
 (`ppl_Pointset_Powerset_Rational_Box_t ph`, `ppl_const_Congruence_t c`)
 [`related`]
- 10.140.2.58** `int ppl_Pointset_Powerset_Rational_Box_refine_with_congruences`
 (`ppl_Pointset_Powerset_Rational_Box_t ph`, `ppl_const_Congruence_System_t cs`)
 [`related`]

- 10.140.2.59** int ppl_Pointset_Powerset_Rational_Box_refine_with_constraint
(ppl_Pointset_Powerset_Rational_Box_t *ph*, ppl_const_Constraint_t *c*) [**related**]
- 10.140.2.60** int ppl_Pointset_Powerset_Rational_Box_refine_with_constraints
(ppl_Pointset_Powerset_Rational_Box_t *ph*, ppl_const_Constraint_System_t *cs*)
[**related**]
- 10.140.2.61** int ppl_Pointset_Powerset_Rational_Box_relation_with_Congruence
(ppl_const_Pointset_Powerset_Rational_Box_t *ph*, ppl_const_Congruence_t *c*)
[**related**]
- 10.140.2.62** int ppl_Pointset_Powerset_Rational_Box_relation_with_Constraint
(ppl_const_Pointset_Powerset_Rational_Box_t *ph*, ppl_const_Constraint_t *c*)
[**related**]
- 10.140.2.63** int ppl_Pointset_Powerset_Rational_Box_relation_with_Generator
(ppl_const_Pointset_Powerset_Rational_Box_t *ph*, ppl_const_Generator_t *c*)
[**related**]
- 10.140.2.64** int ppl_Pointset_Powerset_Rational_Box_remove_higher_space_dimensions
(ppl_Pointset_Powerset_Rational_Box_t *ph*, ppl_dimension_type *d*) [**related**]
- 10.140.2.65** int ppl_Pointset_Powerset_Rational_Box_remove_space_dimensions
(ppl_Pointset_Powerset_Rational_Box_t *ph*, ppl_dimension_type *ds*[], size_t *n*)
[**related**]
- 10.140.2.66** int ppl_Pointset_Powerset_Rational_Box_simplify_using_context_assign (ppl_
Pointset_Powerset_Rational_Box_t *x*, ppl_const_Pointset_Powerset_Rational_Box_t
y) [**related**]

- 10.140.2.67** `int ppl_Pointset_Powerset_Rational_Box_size (ppl_const_Pointset_Powerset_Rational_Box_t ps, size_t * sz)` [**related**]
- 10.140.2.68** `int ppl_Pointset_Powerset_Rational_Box_space_dimension (ppl_const_Pointset_Powerset_Rational_Box_t ph, ppl_dimension_type * m)` [**related**]
- 10.140.2.69** `int ppl_Pointset_Powerset_Rational_Box_strictly_contains_Pointset_Powerset_Rational_Box (ppl_const_Pointset_Powerset_Rational_Box_t x, ppl_const_Pointset_Powerset_Rational_Box_t y)` [**related**]
- 10.140.2.70** `int ppl_Pointset_Powerset_Rational_Box_time_elapse_assign (ppl_Pointset_Powerset_Rational_Box_t x, ppl_const_Pointset_Powerset_Rational_Box_t y)` [**related**]
- 10.140.2.71** `int ppl_Pointset_Powerset_Rational_Box_topological_closure_assign (ppl_Pointset_Powerset_Rational_Box_t ph)` [**related**]
- 10.140.2.72** `int ppl_Pointset_Powerset_Rational_Box_total_memory_in_bytes (ppl_const_Pointset_Powerset_Rational_Box_t ps, size_t * sz)` [**related**]
- 10.140.2.73** `int ppl_Pointset_Powerset_Rational_Box_unconstrain_space_dimension (ppl_Pointset_Powerset_Rational_Box_t ph, ppl_dimension_type var)` [**related**]
- 10.140.2.74** `int ppl_Pointset_Powerset_Rational_Box_unconstrain_space_dimensions (ppl_Pointset_Powerset_Rational_Box_t ph, ppl_dimension_type ds[], size_t n)` [**related**]

10.140.2.75 `int ppl_Pointset_Powerset_Rational_Box_upper_bound_assign (ppl_Pointset_Powerset_Rational_Box_t x, ppl_const_Pointset_Powerset_Rational_Box_t y)` [**related**]

10.140.2.76 `int ppl_Pointset_Powerset_Rational_Box_upper_bound_assign_if_exact (ppl_Pointset_Powerset_Rational_Box_t x, ppl_const_Pointset_Powerset_Rational_Box_t y)` [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.141 `ppl_Pointset_Powerset_Uint16_Box_const_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Uint16_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_Uint16_Box_const_iterator (ppl_Pointset_Powerset_Uint16_Box_const_iterator_t *pit)`
- `int ppl_new_Pointset_Powerset_Uint16_Box_const_iterator_from_const_iterator (ppl_Pointset_Powerset_Uint16_Box_const_iterator_t *px, ppl_const_Pointset_Powerset_Uint16_Box_const_iterator_t y)`
- `int ppl_Pointset_Powerset_Uint16_Box_const_iterator_begin (ppl_const_Pointset_Powerset_Uint16_Box_t ps, ppl_Pointset_Powerset_Uint16_Box_const_iterator_t psit)`
- `int ppl_Pointset_Powerset_Uint16_Box_const_iterator_end (ppl_const_Pointset_Powerset_Uint16_Box_t ps, ppl_Pointset_Powerset_Uint16_Box_const_iterator_t psit)`
- `int ppl_Pointset_Powerset_Uint16_Box_const_iterator_equal_test (ppl_const_Pointset_Powerset_Uint16_Box_const_iterator_t x, ppl_const_Pointset_Powerset_Uint16_Box_const_iterator_t y)`
- `int ppl_Pointset_Powerset_Uint16_Box_const_iterator_increment (ppl_Pointset_Powerset_Uint16_Box_const_iterator_t psit)`
- `int ppl_Pointset_Powerset_Uint16_Box_const_iterator_decrement (ppl_Pointset_Powerset_Uint16_Box_const_iterator_t psit)`
- `int ppl_Pointset_Powerset_Uint16_Box_const_iterator_dereference (ppl_const_Pointset_Powerset_Uint16_Box_const_iterator_t ps, ppl_const_Uint16_Box_t *d)`
- `int ppl_delete_Pointset_Powerset_Uint16_Box_const_iterator (ppl_const_Pointset_Powerset_Uint16_Box_const_iterator_t psit)`

10.141.1 Detailed Description

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Uint16_Box_tag](#).

10.141.2 Friends And Related Function Documentation

- 10.141.2.1** `int ppl_delete_Pointset_Powerset_Uint16_Box_const_iterator`
`(ppl_const_Pointset_Powerset_Uint16_Box_const_iterator_t psit)` [**related**]
- 10.141.2.2** `int ppl_new_Pointset_Powerset_Uint16_Box_const_iterator`
`(ppl_Pointset_Powerset_Uint16_Box_const_iterator_t * pit)` [**related**]
- 10.141.2.3** `int ppl_new_Pointset_Powerset_Uint16_Box_const_iterator_from_const_`
`iterator (ppl_Pointset_Powerset_Uint16_Box_const_iterator_t * px,`
`ppl_const_Pointset_Powerset_Uint16_Box_const_iterator_t y)` [**related**]
- 10.141.2.4** `int ppl_Pointset_Powerset_Uint16_Box_const_iterator_begin` `(ppl_const_Pointset_`
`Powerset_Uint16_Box_t ps, ppl_Pointset_Powerset_Uint16_Box_const_iterator_t psit)`
[related]
- 10.141.2.5** `int ppl_Pointset_Powerset_Uint16_Box_const_iterator_decrement`
`(ppl_Pointset_Powerset_Uint16_Box_const_iterator_t psit)` [**related**]
- 10.141.2.6** `int ppl_Pointset_Powerset_Uint16_Box_const_iterator_dereference` `(ppl_const_`
`Pointset_Powerset_Uint16_Box_const_iterator_t ps, ppl_const_Uint16_Box_t * d)`
[related]
- 10.141.2.7** `int ppl_Pointset_Powerset_Uint16_Box_const_iterator_end` `(ppl_const_Pointset_`
`Powerset_Uint16_Box_t ps, ppl_Pointset_Powerset_Uint16_Box_const_iterator_t psit)`
[related]
- 10.141.2.8** `int ppl_Pointset_Powerset_Uint16_Box_const_iterator_equal_test`
`(ppl_const_Pointset_Powerset_Uint16_Box_const_iterator_t x,`
`ppl_const_Pointset_Powerset_Uint16_Box_const_iterator_t y)` [**related**]

10.141.2.9 int ppl_Pointset_Powerset_Uint16_Box_const_iterator_increment (ppl_Pointset_Powerset_Uint16_Box_const_iterator_t *psit*) [related]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.142 ppl_Pointset_Powerset_Uint16_Box_iterator_tag Interface Reference

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Uint16_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- int [ppl_new_Pointset_Powerset_Uint16_Box_iterator](#) (ppl_Pointset_Powerset_Uint16_Box_iterator_t *pit)
- int [ppl_new_Pointset_Powerset_Uint16_Box_iterator_from_iterator](#) (ppl_Pointset_Powerset_Uint16_Box_iterator_t *px, ppl_const_Pointset_Powerset_Uint16_Box_iterator_t y)
- int [ppl_Pointset_Powerset_Uint16_Box_iterator_begin](#) (ppl_Pointset_Powerset_Uint16_Box_t ps, ppl_Pointset_Powerset_Uint16_Box_iterator_t psit)
- int [ppl_Pointset_Powerset_Uint16_Box_iterator_end](#) (ppl_Pointset_Powerset_Uint16_Box_t ps, ppl_Pointset_Powerset_Uint16_Box_iterator_t psit)
- int [ppl_Pointset_Powerset_Uint16_Box_iterator_equal_test](#) (ppl_const_Pointset_Powerset_Uint16_Box_iterator_t x, ppl_const_Pointset_Powerset_Uint16_Box_iterator_t y)
- int [ppl_Pointset_Powerset_Uint16_Box_iterator_increment](#) (ppl_Pointset_Powerset_Uint16_Box_iterator_t psit)
- int [ppl_Pointset_Powerset_Uint16_Box_iterator_decrement](#) (ppl_Pointset_Powerset_Uint16_Box_iterator_t psit)
- int [ppl_Pointset_Powerset_Uint16_Box_iterator_dereference](#) (ppl_const_Pointset_Powerset_Uint16_Box_iterator_t ps, ppl_const_Uint16_Box_t *d)
- int [ppl_delete_Pointset_Powerset_Uint16_Box_iterator](#) (ppl_const_Pointset_Powerset_Uint16_Box_iterator_t psit)

10.142.1 Detailed Description

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Uint16_Box_tag](#).

10.142.2 Friends And Related Function Documentation

10.142.2.1 int ppl_delete_Pointset_Powerset_Uint16_Box_iterator (ppl_const_Pointset_Powerset_Uint16_Box_iterator_t *psit*) [related]

- 10.142.2.2** `int ppl_new_Pointset_Powerset_Uint16_Box_iterator (ppl_Pointset_Powerset_Uint16_Box_iterator_t * pit)` [**related**]
- 10.142.2.3** `int ppl_new_Pointset_Powerset_Uint16_Box_iterator_from_iterator (ppl_Pointset_Powerset_Uint16_Box_iterator_t * px, ppl_const_Pointset_Powerset_Uint16_Box_iterator_t y)` [**related**]
- 10.142.2.4** `int ppl_Pointset_Powerset_Uint16_Box_iterator_begin (ppl_Pointset_Powerset_Uint16_Box_t ps, ppl_Pointset_Powerset_Uint16_Box_iterator_t psit)` [**related**]
- 10.142.2.5** `int ppl_Pointset_Powerset_Uint16_Box_iterator_decrement (ppl_Pointset_Powerset_Uint16_Box_iterator_t psit)` [**related**]
- 10.142.2.6** `int ppl_Pointset_Powerset_Uint16_Box_iterator_dereference (ppl_const_Pointset_Powerset_Uint16_Box_iterator_t ps, ppl_const_Uint16_Box_t * d)` [**related**]
- 10.142.2.7** `int ppl_Pointset_Powerset_Uint16_Box_iterator_end (ppl_Pointset_Powerset_Uint16_Box_t ps, ppl_Pointset_Powerset_Uint16_Box_iterator_t psit)` [**related**]
- 10.142.2.8** `int ppl_Pointset_Powerset_Uint16_Box_iterator_equal_test (ppl_const_Pointset_Powerset_Uint16_Box_iterator_t x, ppl_const_Pointset_Powerset_Uint16_Box_iterator_t y)` [**related**]
- 10.142.2.9** `int ppl_Pointset_Powerset_Uint16_Box_iterator_increment (ppl_Pointset_Powerset_Uint16_Box_iterator_t psit)` [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.143 ppl_Pointset_Powerset_Uint16_Box_tag Interface Reference

Types and functions for `ppl_Pointset_Powerset_Uint16_Box_tag`.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Pointset_Powerset_Uint16_Box` (`ppl_const_Pointset_Powerset_Uint16_Box_t` ph)
- `int ppl_new_Pointset_Powerset_Uint16_Box_from_space_dimension` (`ppl_Pointset_Powerset_Uint16_Box_t` *pph, `ppl_dimension_type` d, `int` empty)
- `int ppl_new_Pointset_Powerset_Uint16_Box_from_Pointset_Powerset_Uint16_Box` (`ppl_Pointset_Powerset_Uint16_Box_t` *pph, `ppl_const_Pointset_Powerset_Uint16_Box_t` ph)
- `int ppl_new_Pointset_Powerset_Uint16_Box_from_Uint16_Box` (`ppl_Pointset_Powerset_Uint16_Box_t` *pph, `ppl_const_Uint16_Box_t` ph)
- `int ppl_new_Pointset_Powerset_Uint16_Box_from_Pointset_Powerset_Uint16_Box_with_complexity` (`ppl_Pointset_Powerset_Uint16_Box_t` *pph, `ppl_const_Pointset_Powerset_Uint16_Box_t` ph, `int` complexity)
- `int ppl_new_Pointset_Powerset_Uint16_Box_from_Uint16_Box_with_complexity` (`ppl_Pointset_Powerset_Uint16_Box_t` *pph, `ppl_const_Uint16_Box_t` ph, `int` complexity)
- `int ppl_new_Pointset_Powerset_Uint16_Box_from_Constraint_System` (`ppl_Pointset_Powerset_Uint16_Box_t` *pph, `ppl_const_Constraint_System_t` cs)
- `int ppl_new_Pointset_Powerset_Uint16_Box_from_Congruence_System` (`ppl_Pointset_Powerset_Uint16_Box_t` *pph, `ppl_const_Congruence_System_t` cs)
- `int ppl_Pointset_Powerset_Uint16_Box_space_dimension` (`ppl_const_Pointset_Powerset_Uint16_Box_t` ph, `ppl_dimension_type` *m)
- `int ppl_Pointset_Powerset_Uint16_Box_affine_dimension` (`ppl_const_Pointset_Powerset_Uint16_Box_t` ph, `ppl_dimension_type` *m)
- `int ppl_Pointset_Powerset_Uint16_Box_relation_with_Constraint` (`ppl_const_Pointset_Powerset_Uint16_Box_t` ph, `ppl_const_Constraint_t` c)
- `int ppl_Pointset_Powerset_Uint16_Box_relation_with_Generator` (`ppl_const_Pointset_Powerset_Uint16_Box_t` ph, `ppl_const_Generator_t` c)
- `int ppl_Pointset_Powerset_Uint16_Box_relation_with_Congruence` (`ppl_const_Pointset_Powerset_Uint16_Box_t` ph, `ppl_const_Congruence_t` c)
- `int ppl_Pointset_Powerset_Uint16_Box_is_empty` (`ppl_const_Pointset_Powerset_Uint16_Box_t` ph)
- `int ppl_Pointset_Powerset_Uint16_Box_is_universe` (`ppl_const_Pointset_Powerset_Uint16_Box_t` ph)
- `int ppl_Pointset_Powerset_Uint16_Box_is_bounded` (`ppl_const_Pointset_Powerset_Uint16_Box_t` ph)
- `int ppl_Pointset_Powerset_Uint16_Box_contains_integer_point` (`ppl_const_Pointset_Powerset_Uint16_Box_t` ph)
- `int ppl_Pointset_Powerset_Uint16_Box_is_topologically_closed` (`ppl_const_Pointset_Powerset_Uint16_Box_t` ph)
- `int ppl_Pointset_Powerset_Uint16_Box_is_discrete` (`ppl_const_Pointset_Powerset_Uint16_Box_t` ph)
- `int ppl_Pointset_Powerset_Uint16_Box_topological_closure_assign` (`ppl_Pointset_Powerset_Uint16_Box_t` ph)
- `int ppl_Pointset_Powerset_Uint16_Box_pairwise_reduce` (`ppl_Pointset_Powerset_Uint16_Box_t` ph)

- [int ppl_Pointset_Powerset_Uint16_Box_omega_reduce](#) (ppl_Pointset_Powerset_Uint16_Box_t ph)
- [int ppl_Pointset_Powerset_Uint16_Box_bounds_from_above](#) (ppl_const_Pointset_Powerset_Uint16_Box_t ph, ppl_const_Linear_Expression_t le)
- [int ppl_Pointset_Powerset_Uint16_Box_bounds_from_below](#) (ppl_const_Pointset_Powerset_Uint16_Box_t ph, ppl_const_Linear_Expression_t le)
- [int ppl_Pointset_Powerset_Uint16_Box_maximize](#) (ppl_const_Pointset_Powerset_Uint16_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- [int ppl_Pointset_Powerset_Uint16_Box_minimize](#) (ppl_const_Pointset_Powerset_Uint16_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- [int ppl_Pointset_Powerset_Uint16_Box_maximize_with_point](#) (ppl_const_Pointset_Powerset_Uint16_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- [int ppl_Pointset_Powerset_Uint16_Box_minimize_with_point](#) (ppl_const_Pointset_Powerset_Uint16_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- [int ppl_Pointset_Powerset_Uint16_Box_contains_Pointset_Powerset_Uint16_Box](#) (ppl_const_Pointset_Powerset_Uint16_Box_t x, ppl_const_Pointset_Powerset_Uint16_Box_t y)
- [int ppl_Pointset_Powerset_Uint16_Box_strictly_contains_Pointset_Powerset_Uint16_Box](#) (ppl_const_Pointset_Powerset_Uint16_Box_t x, ppl_const_Pointset_Powerset_Uint16_Box_t y)
- [int ppl_Pointset_Powerset_Uint16_Box_is_disjoint_from_Pointset_Powerset_Uint16_Box](#) (ppl_const_Pointset_Powerset_Uint16_Box_t x, ppl_const_Pointset_Powerset_Uint16_Box_t y)
- [int ppl_Pointset_Powerset_Uint16_Box_geometrically_covers_Pointset_Powerset_Uint16_Box](#) (ppl_const_Pointset_Powerset_Uint16_Box_t x, ppl_const_Pointset_Powerset_Uint16_Box_t y)
- [int ppl_Pointset_Powerset_Uint16_Box_geometrically_equals_Pointset_Powerset_Uint16_Box](#) (ppl_const_Pointset_Powerset_Uint16_Box_t x, ppl_const_Pointset_Powerset_Uint16_Box_t y)
- [int ppl_Pointset_Powerset_Uint16_Box_equals_Pointset_Powerset_Uint16_Box](#) (ppl_const_Pointset_Powerset_Uint16_Box_t x, ppl_const_Pointset_Powerset_Uint16_Box_t y)
- [int ppl_Pointset_Powerset_Uint16_Box_OK](#) (ppl_const_Pointset_Powerset_Uint16_Box_t ph)
- [int ppl_Pointset_Powerset_Uint16_Box_add_constraint](#) (ppl_Pointset_Powerset_Uint16_Box_t ph, ppl_const_Constraint_t c)
- [int ppl_Pointset_Powerset_Uint16_Box_add_congruence](#) (ppl_Pointset_Powerset_Uint16_Box_t ph, ppl_const_Congruence_t c)
- [int ppl_Pointset_Powerset_Uint16_Box_add_constraints](#) (ppl_Pointset_Powerset_Uint16_Box_t ph, ppl_const_Constraint_System_t cs)
- [int ppl_Pointset_Powerset_Uint16_Box_add_congruences](#) (ppl_Pointset_Powerset_Uint16_Box_t ph, ppl_const_Congruence_System_t cs)
- [int ppl_Pointset_Powerset_Uint16_Box_refine_with_constraint](#) (ppl_Pointset_Powerset_Uint16_Box_t ph, ppl_const_Constraint_t c)
- [int ppl_Pointset_Powerset_Uint16_Box_refine_with_congruence](#) (ppl_Pointset_Powerset_Uint16_Box_t ph, ppl_const_Congruence_t c)
- [int ppl_Pointset_Powerset_Uint16_Box_refine_with_constraints](#) (ppl_Pointset_Powerset_Uint16_Box_t ph, ppl_const_Constraint_System_t cs)
- [int ppl_Pointset_Powerset_Uint16_Box_refine_with_congruences](#) (ppl_Pointset_Powerset_Uint16_Box_t ph, ppl_const_Congruence_System_t cs)
- [int ppl_Pointset_Powerset_Uint16_Box_intersection_assign](#) (ppl_Pointset_Powerset_Uint16_Box_t x, ppl_const_Pointset_Powerset_Uint16_Box_t y)
- [int ppl_Pointset_Powerset_Uint16_Box_upper_bound_assign](#) (ppl_Pointset_Powerset_Uint16_Box_t x, ppl_const_Pointset_Powerset_Uint16_Box_t y)
- [int ppl_Pointset_Powerset_Uint16_Box_difference_assign](#) (ppl_Pointset_Powerset_Uint16_Box_t x, ppl_const_Pointset_Powerset_Uint16_Box_t y)

- int [ppl_Pointset_Powerset_Uint16_Box_concatenate_assign](#) (ppl_Pointset_Powerset_Uint16_Box_t x, ppl_const_Pointset_Powerset_Uint16_Box_t y)
- int [ppl_Pointset_Powerset_Uint16_Box_time_elapse_assign](#) (ppl_Pointset_Powerset_Uint16_Box_t x, ppl_const_Pointset_Powerset_Uint16_Box_t y)
- int [ppl_Pointset_Powerset_Uint16_Box_upper_bound_assign_if_exact](#) (ppl_Pointset_Powerset_Uint16_Box_t x, ppl_const_Pointset_Powerset_Uint16_Box_t y)
- int [ppl_Pointset_Powerset_Uint16_Box_simplify_using_context_assign](#) (ppl_Pointset_Powerset_Uint16_Box_t x, ppl_const_Pointset_Powerset_Uint16_Box_t y)
- int [ppl_Pointset_Powerset_Uint16_Box_constrains](#) (ppl_Pointset_Powerset_Uint16_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_Uint16_Box_unconstrain_space_dimension](#) (ppl_Pointset_Powerset_Uint16_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_Uint16_Box_unconstrain_space_dimensions](#) (ppl_Pointset_Powerset_Uint16_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_Uint16_Box_affine_image](#) (ppl_Pointset_Powerset_Uint16_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Uint16_Box_affine_preimage](#) (ppl_Pointset_Powerset_Uint16_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Uint16_Box_bounded_affine_image](#) (ppl_Pointset_Powerset_Uint16_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Uint16_Box_bounded_affine_preimage](#) (ppl_Pointset_Powerset_Uint16_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Uint16_Box_generalized_affine_image](#) (ppl_Pointset_Powerset_Uint16_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Uint16_Box_generalized_affine_preimage](#) (ppl_Pointset_Powerset_Uint16_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Uint16_Box_generalized_affine_image_lhs_rhs](#) (ppl_Pointset_Powerset_Uint16_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_Uint16_Box_generalized_affine_preimage_lhs_rhs](#) (ppl_Pointset_Powerset_Uint16_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_Uint16_Box_add_space_dimensions_and_embed](#) (ppl_Pointset_Powerset_Uint16_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Uint16_Box_add_space_dimensions_and_project](#) (ppl_Pointset_Powerset_Uint16_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Uint16_Box_remove_space_dimensions](#) (ppl_Pointset_Powerset_Uint16_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_Uint16_Box_remove_higher_space_dimensions](#) (ppl_Pointset_Powerset_Uint16_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Uint16_Box_expand_space_dimension](#) (ppl_Pointset_Powerset_Uint16_Box_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Pointset_Powerset_Uint16_Box_fold_space_dimensions](#) (ppl_Pointset_Powerset_Uint16_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Uint16_Box_map_space_dimensions](#) (ppl_Pointset_Powerset_Uint16_Box_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_Pointset_Powerset_Uint16_Box_drop_some_non_integer_points](#) (ppl_Pointset_Powerset_Uint16_Box_t ph, int complexity)

- `int ppl_Pointset_Powerset_Uint16_Box_drop_some_non_integer_points_2` (`ppl_Pointset_Powerset_Uint16_Box_t ph`, `ppl_dimension_type ds[]`, `size_t n`, `int complexity`)
- `int ppl_Pointset_Powerset_Uint16_Box_external_memory_in_bytes` (`ppl_const_Pointset_Powerset_Uint16_Box_t ps`, `size_t *sz`)
- `int ppl_Pointset_Powerset_Uint16_Box_total_memory_in_bytes` (`ppl_const_Pointset_Powerset_Uint16_Box_t ps`, `size_t *sz`)
- `int ppl_Pointset_Powerset_Uint16_Box_size` (`ppl_const_Pointset_Powerset_Uint16_Box_t ps`, `size_t *sz`)
- `int ppl_Pointset_Powerset_Uint16_Box_add_disjunct` (`ppl_Pointset_Powerset_Uint16_Box_t ps`, `ppl_const_Uint16_Box_t d`)
- `int ppl_Pointset_Powerset_Uint16_Box_drop_disjunct` (`ppl_Pointset_Powerset_Uint16_Box_t ps`, `ppl_const_Pointset_Powerset_Uint16_Box_iterator_t cit`, `ppl_Pointset_Powerset_Uint16_Box_iterator_t it`)
- `int ppl_Pointset_Powerset_Uint16_Box_drop_disjuncts` (`ppl_Pointset_Powerset_Uint16_Box_t ps`, `ppl_const_Pointset_Powerset_Uint16_Box_iterator_t first`, `ppl_const_Pointset_Powerset_Uint16_Box_iterator_t last`)

10.143.1 Detailed Description

Types and functions for `ppl_Pointset_Powerset_Uint16_Box_tag`.

10.143.2 Friends And Related Function Documentation

10.143.2.1 `int ppl_delete_Pointset_Powerset_Uint16_Box` (`ppl_const_Pointset_Powerset_Uint16_Box_t ph`) [**related**]

10.143.2.2 `int ppl_new_Pointset_Powerset_Uint16_Box_from_Congruence_System` (`ppl_Pointset_Powerset_Uint16_Box_t * pph`, `ppl_const_Congruence_System_t cs`) [**related**]

10.143.2.3 `int ppl_new_Pointset_Powerset_Uint16_Box_from_Constraint_System` (`ppl_Pointset_Powerset_Uint16_Box_t * pph`, `ppl_const_Constraint_System_t cs`) [**related**]

10.143.2.4 `int ppl_new_Pointset_Powerset_Uint16_Box_from_Pointset_Powerset_Uint16_Box` (`ppl_Pointset_Powerset_Uint16_Box_t * pph`, `ppl_const_Pointset_Powerset_Uint16_Box_t ph`) [**related**]

- 10.143.2.5** `int ppl_new_Pointset_Powerset_Uint16_Box_from_Pointset_Powerset_Uint16_Box_with_complexity (ppl_Pointset_Powerset_Uint16_Box_t * pph, ppl_const_Pointset_Powerset_Uint16_Box_t ph, int complexity)` [**related**]
- 10.143.2.6** `int ppl_new_Pointset_Powerset_Uint16_Box_from_space_dimension (ppl_Pointset_Powerset_Uint16_Box_t * pph, ppl_dimension_type d, int empty)` [**related**]
- 10.143.2.7** `int ppl_new_Pointset_Powerset_Uint16_Box_from_Uint16_Box (ppl_Pointset_Powerset_Uint16_Box_t * pph, ppl_const_Uint16_Box_t ph)` [**related**]
- 10.143.2.8** `int ppl_new_Pointset_Powerset_Uint16_Box_from_Uint16_Box_with_complexity (ppl_Pointset_Powerset_Uint16_Box_t * pph, ppl_const_Uint16_Box_t ph, int complexity)` [**related**]
- 10.143.2.9** `int ppl_Pointset_Powerset_Uint16_Box_add_congruence (ppl_Pointset_Powerset_Uint16_Box_t ph, ppl_const_Congruence_t c)` [**related**]
- 10.143.2.10** `int ppl_Pointset_Powerset_Uint16_Box_add_congruences (ppl_Pointset_Powerset_Uint16_Box_t ph, ppl_const_Congruence_System_t cs)` [**related**]
- 10.143.2.11** `int ppl_Pointset_Powerset_Uint16_Box_add_constraint (ppl_Pointset_Powerset_Uint16_Box_t ph, ppl_const_Constraint_t c)` [**related**]
- 10.143.2.12** `int ppl_Pointset_Powerset_Uint16_Box_add_constraints (ppl_Pointset_Powerset_Uint16_Box_t ph, ppl_const_Constraint_System_t cs)` [**related**]

- 10.143.2.13 `int ppl_Pointset_Powerset_Uint16_Box_add_disjunct (ppl_Pointset_Powerset_Uint16_Box_t ps, ppl_const_Uint16_Box_t d)` [**related**]
- 10.143.2.14 `int ppl_Pointset_Powerset_Uint16_Box_add_space_dimensions_and_embed (ppl_Pointset_Powerset_Uint16_Box_t ph, ppl_dimension_type d)` [**related**]
- 10.143.2.15 `int ppl_Pointset_Powerset_Uint16_Box_add_space_dimensions_and_project (ppl_Pointset_Powerset_Uint16_Box_t ph, ppl_dimension_type d)` [**related**]
- 10.143.2.16 `int ppl_Pointset_Powerset_Uint16_Box_affine_dimension (ppl_const_Pointset_Powerset_Uint16_Box_t ph, ppl_dimension_type * m)` [**related**]
- 10.143.2.17 `int ppl_Pointset_Powerset_Uint16_Box_affine_image (ppl_Pointset_Powerset_Uint16_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.143.2.18 `int ppl_Pointset_Powerset_Uint16_Box_affine_preimage (ppl_Pointset_Powerset_Uint16_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.143.2.19 `int ppl_Pointset_Powerset_Uint16_Box_bounded_affine_image (ppl_Pointset_Powerset_Uint16_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [**related**]
- 10.143.2.20 `int ppl_Pointset_Powerset_Uint16_Box_bounded_affine_preimage (ppl_Pointset_Powerset_Uint16_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [**related**]

- 10.143.2.21 **int** ppl_Pointset_Powerset_Uint16_Box_bounds_from_above
(ppl_const_Pointset_Powerset_Uint16_Box_t *ph*, ppl_const_Linear_Expression_t *le*)
[related]
- 10.143.2.22 **int** ppl_Pointset_Powerset_Uint16_Box_bounds_from_below
(ppl_const_Pointset_Powerset_Uint16_Box_t *ph*, ppl_const_Linear_Expression_t *le*)
[related]
- 10.143.2.23 **int** ppl_Pointset_Powerset_Uint16_Box_concatenate_assign (ppl_Pointset_
Powerset_Uint16_Box_t *x*, ppl_const_Pointset_Powerset_Uint16_Box_t *y*)
[related]
- 10.143.2.24 **int** ppl_Pointset_Powerset_Uint16_Box_constrains (ppl_Pointset_Powerset_Uint16_
Box_t *ph*, ppl_dimension_type *var*) [related]
- 10.143.2.25 **int** ppl_Pointset_Powerset_Uint16_Box_contains_integer_point
(ppl_const_Pointset_Powerset_Uint16_Box_t *ph*) [related]
- 10.143.2.26 **int** ppl_Pointset_Powerset_Uint16_Box_contains_Pointset_Powerset_
Uint16_Box (ppl_const_Pointset_Powerset_Uint16_Box_t *x*,
ppl_const_Pointset_Powerset_Uint16_Box_t *y*) [related]
- 10.143.2.27 **int** ppl_Pointset_Powerset_Uint16_Box_difference_assign (ppl_Pointset_
Powerset_Uint16_Box_t *x*, ppl_const_Pointset_Powerset_Uint16_Box_t *y*)
[related]
- 10.143.2.28 **int** ppl_Pointset_Powerset_Uint16_Box_drop_disjunct (ppl_Pointset_Powerset_
Uint16_Box_t *ps*, ppl_const_Pointset_Powerset_Uint16_Box_iterator_t *cit*,
ppl_Pointset_Powerset_Uint16_Box_iterator_t *it*) [related]

- 10.143.2.29 `int ppl_Pointset_Powerset_Uint16_Box_drop_disjuncts (ppl_Pointset_Powerset_Uint16_Box_t ps, ppl_const_Pointset_Powerset_Uint16_Box_iterator_t first, ppl_const_Pointset_Powerset_Uint16_Box_iterator_t last)` [**related**]
- 10.143.2.30 `int ppl_Pointset_Powerset_Uint16_Box_drop_some_non_integer_points (ppl_Pointset_Powerset_Uint16_Box_t ph, int complexity)` [**related**]
- 10.143.2.31 `int ppl_Pointset_Powerset_Uint16_Box_drop_some_non_integer_points_2 (ppl_Pointset_Powerset_Uint16_Box_t ph, ppl_dimension_type ds[], size_t n, int complexity)` [**related**]
- 10.143.2.32 `int ppl_Pointset_Powerset_Uint16_Box_equals_Pointset_Powerset_Uint16_Box (ppl_const_Pointset_Powerset_Uint16_Box_t x, ppl_const_Pointset_Powerset_Uint16_Box_t y)` [**related**]
- 10.143.2.33 `int ppl_Pointset_Powerset_Uint16_Box_expand_space_dimension (ppl_Pointset_Powerset_Uint16_Box_t ph, ppl_dimension_type d, ppl_dimension_type m)` [**related**]
- 10.143.2.34 `int ppl_Pointset_Powerset_Uint16_Box_external_memory_in_bytes (ppl_const_Pointset_Powerset_Uint16_Box_t ps, size_t * sz)` [**related**]
- 10.143.2.35 `int ppl_Pointset_Powerset_Uint16_Box_fold_space_dimensions (ppl_Pointset_Powerset_Uint16_Box_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [**related**]
- 10.143.2.36 `int ppl_Pointset_Powerset_Uint16_Box_generalized_affine_image (ppl_Pointset_Powerset_Uint16_Box_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]

- 10.143.2.37 `int ppl_Pointset_Powerset_Uint16_Box_generalized_affine_image_lhs_rhs`
(`ppl_Pointset_Powerset_Uint16_Box_t ph`, `ppl_const_Linear_Expression_t lhs`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
[related]
- 10.143.2.38 `int ppl_Pointset_Powerset_Uint16_Box_generalized_affine_preimage`
(`ppl_Pointset_Powerset_Uint16_Box_t ph`, `ppl_dimension_type var`, `enum`
`ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [related]
- 10.143.2.39 `int ppl_Pointset_Powerset_Uint16_Box_generalized_affine_preimage_lhs_rhs`
(`ppl_Pointset_Powerset_Uint16_Box_t ph`, `ppl_const_Linear_Expression_t lhs`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
[related]
- 10.143.2.40 `int ppl_Pointset_Powerset_Uint16_Box_geometrically_covers_Pointset_-`
`Powerset_Uint16_Box` (`ppl_const_Pointset_Powerset_Uint16_Box_t x`,
`ppl_const_Pointset_Powerset_Uint16_Box_t y`) [related]
- 10.143.2.41 `int ppl_Pointset_Powerset_Uint16_Box_geometrically_equals_Pointset_-`
`Powerset_Uint16_Box` (`ppl_const_Pointset_Powerset_Uint16_Box_t x`,
`ppl_const_Pointset_Powerset_Uint16_Box_t y`) [related]
- 10.143.2.42 `int ppl_Pointset_Powerset_Uint16_Box_intersection_assign` (`ppl_Pointset_-`
`Powerset_Uint16_Box_t x`, `ppl_const_Pointset_Powerset_Uint16_Box_t y`)
[related]
- 10.143.2.43 `int ppl_Pointset_Powerset_Uint16_Box_is_bounded` (`ppl_const_Pointset_Powerset_-`
`Uint16_Box_t ph`) [related]
- 10.143.2.44 `int ppl_Pointset_Powerset_Uint16_Box_is_discrete` (`ppl_const_Pointset_Powerset_-`
`Uint16_Box_t ph`) [related]

- 10.143.2.45 **int ppl_Pointset_Powerset_Uint16_Box_is_disjoint_from_Pointset_Powerset_Uint16_Box** (ppl_const_Pointset_Powerset_Uint16_Box_t *x*, ppl_const_Pointset_Powerset_Uint16_Box_t *y*) [**related**]
- 10.143.2.46 **int ppl_Pointset_Powerset_Uint16_Box_is_empty** (ppl_const_Pointset_Powerset_Uint16_Box_t *ph*) [**related**]
- 10.143.2.47 **int ppl_Pointset_Powerset_Uint16_Box_is_topologically_closed** (ppl_const_Pointset_Powerset_Uint16_Box_t *ph*) [**related**]
- 10.143.2.48 **int ppl_Pointset_Powerset_Uint16_Box_is_universe** (ppl_const_Pointset_Powerset_Uint16_Box_t *ph*) [**related**]
- 10.143.2.49 **int ppl_Pointset_Powerset_Uint16_Box_map_space_dimensions** (ppl_Pointset_Powerset_Uint16_Box_t *ph*, ppl_dimension_type *maps*[], size_t *n*) [**related**]
- 10.143.2.50 **int ppl_Pointset_Powerset_Uint16_Box_maximize** (ppl_const_Pointset_Powerset_Uint16_Box_t *ph*, ppl_const_Linear_Expression_t *le*, ppl_Coefficient_t *ext_n*, ppl_Coefficient_t *ext_d*, int **poptimum*) [**related**]
- 10.143.2.51 **int ppl_Pointset_Powerset_Uint16_Box_maximize_with_point** (ppl_const_Pointset_Powerset_Uint16_Box_t *ph*, ppl_const_Linear_Expression_t *le*, ppl_Coefficient_t *ext_n*, ppl_Coefficient_t *ext_d*, int **poptimum*, ppl_Generator_t *point*) [**related**]
- 10.143.2.52 **int ppl_Pointset_Powerset_Uint16_Box_minimize** (ppl_const_Pointset_Powerset_Uint16_Box_t *ph*, ppl_const_Linear_Expression_t *le*, ppl_Coefficient_t *ext_n*, ppl_Coefficient_t *ext_d*, int **poptimum*) [**related**]

- 10.143.2.53** `int ppl_Pointset_Powerset_Uint16_Box_minimize_with_point`
(`ppl_const_Pointset_Powerset_Uint16_Box_t ph`, `ppl_const_Linear_Expression_t le`,
`ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int *poptimum`, `ppl_Generator_t point`) [`related`]
- 10.143.2.54** `int ppl_Pointset_Powerset_Uint16_Box_OK` (`ppl_const_Pointset_Powerset_Uint16_Box_t ph`) [`related`]
- 10.143.2.55** `int ppl_Pointset_Powerset_Uint16_Box_omega_reduce` (`ppl_Pointset_Powerset_Uint16_Box_t ph`) [`related`]
- 10.143.2.56** `int ppl_Pointset_Powerset_Uint16_Box_pairwise_reduce`
(`ppl_Pointset_Powerset_Uint16_Box_t ph`) [`related`]
- 10.143.2.57** `int ppl_Pointset_Powerset_Uint16_Box_refine_with_congruence`
(`ppl_Pointset_Powerset_Uint16_Box_t ph`, `ppl_const_Congruence_t c`) [`related`]
- 10.143.2.58** `int ppl_Pointset_Powerset_Uint16_Box_refine_with_congruences`
(`ppl_Pointset_Powerset_Uint16_Box_t ph`, `ppl_const_Congruence_System_t cs`) [`related`]
- 10.143.2.59** `int ppl_Pointset_Powerset_Uint16_Box_refine_with_constraint`
(`ppl_Pointset_Powerset_Uint16_Box_t ph`, `ppl_const_Constraint_t c`) [`related`]
- 10.143.2.60** `int ppl_Pointset_Powerset_Uint16_Box_refine_with_constraints`
(`ppl_Pointset_Powerset_Uint16_Box_t ph`, `ppl_const_Constraint_System_t cs`) [`related`]

- 10.143.2.61** `int ppl_Pointset_Powerset_Uint16_Box_relation_with_Congruence`
 (`ppl_const_Pointset_Powerset_Uint16_Box_t ph`, `ppl_const_Congruence_t c`)
 [`related`]
- 10.143.2.62** `int ppl_Pointset_Powerset_Uint16_Box_relation_with_Constraint`
 (`ppl_const_Pointset_Powerset_Uint16_Box_t ph`, `ppl_const_Constraint_t c`)
 [`related`]
- 10.143.2.63** `int ppl_Pointset_Powerset_Uint16_Box_relation_with_Generator`
 (`ppl_const_Pointset_Powerset_Uint16_Box_t ph`, `ppl_const_Generator_t c`)
 [`related`]
- 10.143.2.64** `int ppl_Pointset_Powerset_Uint16_Box_remove_higher_space_dimensions`
 (`ppl_Pointset_Powerset_Uint16_Box_t ph`, `ppl_dimension_type d`) [`related`]
- 10.143.2.65** `int ppl_Pointset_Powerset_Uint16_Box_remove_space_dimensions`
 (`ppl_Pointset_Powerset_Uint16_Box_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`)
 [`related`]
- 10.143.2.66** `int ppl_Pointset_Powerset_Uint16_Box_simplify_using_context_assign`
 (`ppl_Pointset_Powerset_Uint16_Box_t x`, `ppl_const_Pointset_Powerset_Uint16_Box_t y`) [`related`]
- 10.143.2.67** `int ppl_Pointset_Powerset_Uint16_Box_size` (`ppl_const_Pointset_Powerset_Uint16_Box_t ps`, `size_t * sz`) [`related`]
- 10.143.2.68** `int ppl_Pointset_Powerset_Uint16_Box_space_dimension` (`ppl_const_Pointset_Powerset_Uint16_Box_t ph`, `ppl_dimension_type * m`)
 [`related`]

- 10.143.2.69 `int ppl_Pointset_Powerset_Uint16_Box_strictly_contains_Pointset_Powerset_Uint16_Box (ppl_const_Pointset_Powerset_Uint16_Box_t x, ppl_const_Pointset_Powerset_Uint16_Box_t y) [related]`
- 10.143.2.70 `int ppl_Pointset_Powerset_Uint16_Box_time_elapse_assign (ppl_Pointset_Powerset_Uint16_Box_t x, ppl_const_Pointset_Powerset_Uint16_Box_t y) [related]`
- 10.143.2.71 `int ppl_Pointset_Powerset_Uint16_Box_topological_closure_assign (ppl_Pointset_Powerset_Uint16_Box_t ph) [related]`
- 10.143.2.72 `int ppl_Pointset_Powerset_Uint16_Box_total_memory_in_bytes (ppl_const_Pointset_Powerset_Uint16_Box_t ps, size_t * sz) [related]`
- 10.143.2.73 `int ppl_Pointset_Powerset_Uint16_Box_unconstrain_space_dimension (ppl_Pointset_Powerset_Uint16_Box_t ph, ppl_dimension_type var) [related]`
- 10.143.2.74 `int ppl_Pointset_Powerset_Uint16_Box_unconstrain_space_dimensions (ppl_Pointset_Powerset_Uint16_Box_t ph, ppl_dimension_type ds[], size_t n) [related]`
- 10.143.2.75 `int ppl_Pointset_Powerset_Uint16_Box_upper_bound_assign (ppl_Pointset_Powerset_Uint16_Box_t x, ppl_const_Pointset_Powerset_Uint16_Box_t y) [related]`
- 10.143.2.76 `int ppl_Pointset_Powerset_Uint16_Box_upper_bound_assign_if_exact (ppl_Pointset_Powerset_Uint16_Box_t x, ppl_const_Pointset_Powerset_Uint16_Box_t y) [related]`

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.144 `ppl_Pointset_Powerset_Uint32_Box_const_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Uint32_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_Uint32_Box_const_iterator` (`ppl_Pointset_Powerset_Uint32_Box_const_iterator_t *pit`)
- `int ppl_new_Pointset_Powerset_Uint32_Box_const_iterator_from_const_iterator` (`ppl_Pointset_Powerset_Uint32_Box_const_iterator_t *px`, `ppl_const_Pointset_Powerset_Uint32_Box_const_iterator_t y`)
- `int ppl_Pointset_Powerset_Uint32_Box_const_iterator_begin` (`ppl_const_Pointset_Powerset_Uint32_Box_t ps`, `ppl_Pointset_Powerset_Uint32_Box_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Uint32_Box_const_iterator_end` (`ppl_const_Pointset_Powerset_Uint32_Box_t ps`, `ppl_Pointset_Powerset_Uint32_Box_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Uint32_Box_const_iterator_equal_test` (`ppl_const_Pointset_Powerset_Uint32_Box_const_iterator_t x`, `ppl_const_Pointset_Powerset_Uint32_Box_const_iterator_t y`)
- `int ppl_Pointset_Powerset_Uint32_Box_const_iterator_increment` (`ppl_Pointset_Powerset_Uint32_Box_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Uint32_Box_const_iterator_decrement` (`ppl_Pointset_Powerset_Uint32_Box_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Uint32_Box_const_iterator_dereference` (`ppl_const_Pointset_Powerset_Uint32_Box_const_iterator_t ps`, `ppl_const_Uint32_Box_t *d`)
- `int ppl_delete_Pointset_Powerset_Uint32_Box_const_iterator` (`ppl_const_Pointset_Powerset_Uint32_Box_const_iterator_t psit`)

10.144.1 Detailed Description

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Uint32_Box_tag](#).

10.144.2 Friends And Related Function Documentation

10.144.2.1 `int ppl_delete_Pointset_Powerset_Uint32_Box_const_iterator`
(`ppl_const_Pointset_Powerset_Uint32_Box_const_iterator_t psit`) [**related**]

10.144.2.2 `int ppl_new_Pointset_Powerset_Uint32_Box_const_iterator`
(`ppl_Pointset_Powerset_Uint32_Box_const_iterator_t *pit`) [**related**]

- 10.144.2.3** `int ppl_new_Pointset_Powerset_Uint32_Box_const_iterator_from_const_iterator (ppl_Pointset_Powerset_Uint32_Box_const_iterator_t * px, ppl_const_Pointset_Powerset_Uint32_Box_const_iterator_t y)` `[related]`
- 10.144.2.4** `int ppl_Pointset_Powerset_Uint32_Box_const_iterator_begin (ppl_const_Pointset_Powerset_Uint32_Box_t ps, ppl_Pointset_Powerset_Uint32_Box_const_iterator_t psit)` `[related]`
- 10.144.2.5** `int ppl_Pointset_Powerset_Uint32_Box_const_iterator_decrement (ppl_Pointset_Powerset_Uint32_Box_const_iterator_t psit)` `[related]`
- 10.144.2.6** `int ppl_Pointset_Powerset_Uint32_Box_const_iterator_dereference (ppl_const_Pointset_Powerset_Uint32_Box_const_iterator_t ps, ppl_const_Uint32_Box_t * d)` `[related]`
- 10.144.2.7** `int ppl_Pointset_Powerset_Uint32_Box_const_iterator_end (ppl_const_Pointset_Powerset_Uint32_Box_t ps, ppl_Pointset_Powerset_Uint32_Box_const_iterator_t psit)` `[related]`
- 10.144.2.8** `int ppl_Pointset_Powerset_Uint32_Box_const_iterator_equal_test (ppl_const_Pointset_Powerset_Uint32_Box_const_iterator_t x, ppl_const_Pointset_Powerset_Uint32_Box_const_iterator_t y)` `[related]`
- 10.144.2.9** `int ppl_Pointset_Powerset_Uint32_Box_const_iterator_increment (ppl_Pointset_Powerset_Uint32_Box_const_iterator_t psit)` `[related]`

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.145 `ppl_Pointset_Powerset_Uint32_Box_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Uint32_Box_tag](#).

```
#include <ppl_c.h>
```


Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_Uint32_Box_iterator` (`ppl_Pointset_Powerset_Uint32_Box_iterator_t *pit`)
- `int ppl_new_Pointset_Powerset_Uint32_Box_iterator_from_iterator` (`ppl_Pointset_Powerset_Uint32_Box_iterator_t *px`, `ppl_const_Pointset_Powerset_Uint32_Box_iterator_t y`)
- `int ppl_Pointset_Powerset_Uint32_Box_iterator_begin` (`ppl_Pointset_Powerset_Uint32_Box_t ps`, `ppl_Pointset_Powerset_Uint32_Box_iterator_t psit`)
- `int ppl_Pointset_Powerset_Uint32_Box_iterator_end` (`ppl_Pointset_Powerset_Uint32_Box_t ps`, `ppl_Pointset_Powerset_Uint32_Box_iterator_t psit`)
- `int ppl_Pointset_Powerset_Uint32_Box_iterator_equal_test` (`ppl_const_Pointset_Powerset_Uint32_Box_iterator_t x`, `ppl_const_Pointset_Powerset_Uint32_Box_iterator_t y`)
- `int ppl_Pointset_Powerset_Uint32_Box_iterator_increment` (`ppl_Pointset_Powerset_Uint32_Box_iterator_t psit`)
- `int ppl_Pointset_Powerset_Uint32_Box_iterator_decrement` (`ppl_Pointset_Powerset_Uint32_Box_iterator_t psit`)
- `int ppl_Pointset_Powerset_Uint32_Box_iterator_dereference` (`ppl_const_Pointset_Powerset_Uint32_Box_iterator_t ps`, `ppl_const_Uint32_Box_t *d`)
- `int ppl_delete_Pointset_Powerset_Uint32_Box_iterator` (`ppl_const_Pointset_Powerset_Uint32_Box_iterator_t psit`)

10.145.1 Detailed Description

Types and functions for iterating on the disjuncts of a `ppl_Pointset_Powerset_Uint32_Box_tag`.

10.145.2 Friends And Related Function Documentation

10.145.2.1 `int ppl_delete_Pointset_Powerset_Uint32_Box_iterator` (`ppl_const_Pointset_Powerset_Uint32_Box_iterator_t psit`) [**related**]

10.145.2.2 `int ppl_new_Pointset_Powerset_Uint32_Box_iterator` (`ppl_Pointset_Powerset_Uint32_Box_iterator_t *pit`) [**related**]

10.145.2.3 `int ppl_new_Pointset_Powerset_Uint32_Box_iterator_from_iterator` (`ppl_Pointset_Powerset_Uint32_Box_iterator_t *px`, `ppl_const_Pointset_Powerset_Uint32_Box_iterator_t y`) [**related**]

10.145.2.4 `int ppl_Pointset_Powerset_Uint32_Box_iterator_begin` (`ppl_Pointset_Powerset_Uint32_Box_t ps`, `ppl_Pointset_Powerset_Uint32_Box_iterator_t psit`) [**related**]

- 10.145.2.5** `int ppl_Pointset_Powerset_Uint32_Box_iterator_decrement`
 (`ppl_Pointset_Powerset_Uint32_Box_iterator_t psit`) [**related**]
- 10.145.2.6** `int ppl_Pointset_Powerset_Uint32_Box_iterator_dereference` (`ppl_const_Pointset_Powerset_Uint32_Box_iterator_t ps`, `ppl_const_Uint32_Box_t * d`)
 [**related**]
- 10.145.2.7** `int ppl_Pointset_Powerset_Uint32_Box_iterator_end` (`ppl_Pointset_Powerset_Uint32_Box_t ps`, `ppl_Pointset_Powerset_Uint32_Box_iterator_t psit`)
 [**related**]
- 10.145.2.8** `int ppl_Pointset_Powerset_Uint32_Box_iterator_equal_test`
 (`ppl_const_Pointset_Powerset_Uint32_Box_iterator_t x`, `ppl_const_Pointset_Powerset_Uint32_Box_iterator_t y`) [**related**]
- 10.145.2.9** `int ppl_Pointset_Powerset_Uint32_Box_iterator_increment`
 (`ppl_Pointset_Powerset_Uint32_Box_iterator_t psit`) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.146 ppl_Pointset_Powerset_Uint32_Box_tag Interface Reference

Types and functions for [ppl_Pointset_Powerset_Uint32_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Pointset_Powerset_Uint32_Box` (`ppl_const_Pointset_Powerset_Uint32_Box_t ph`)
- `int ppl_new_Pointset_Powerset_Uint32_Box_from_space_dimension` (`ppl_Pointset_Powerset_Uint32_Box_t *pph`, `ppl_dimension_type d`, `int empty`)
- `int ppl_new_Pointset_Powerset_Uint32_Box_from_Pointset_Powerset_Uint32_Box` (`ppl_Pointset_Powerset_Uint32_Box_t *pph`, `ppl_const_Pointset_Powerset_Uint32_Box_t ph`)
- `int ppl_new_Pointset_Powerset_Uint32_Box_from_Uint32_Box` (`ppl_Pointset_Powerset_Uint32_Box_t *pph`, `ppl_const_Uint32_Box_t ph`)

- int [ppl_new_Pointset_Powerset_Uint32_Box_from_Pointset_Powerset_Uint32_Box_with_complexity](#) (ppl_Pointset_Powerset_Uint32_Box_t *pph, ppl_const_Pointset_Powerset_Uint32_Box_t ph, int complexity)
- int [ppl_new_Pointset_Powerset_Uint32_Box_from_Uint32_Box_with_complexity](#) (ppl_Pointset_Powerset_Uint32_Box_t *pph, ppl_const_Uint32_Box_t ph, int complexity)
- int [ppl_new_Pointset_Powerset_Uint32_Box_from_Constraint_System](#) (ppl_Pointset_Powerset_Uint32_Box_t *pph, ppl_const_Constraint_System_t cs)
- int [ppl_new_Pointset_Powerset_Uint32_Box_from_Congruence_System](#) (ppl_Pointset_Powerset_Uint32_Box_t *pph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_Uint32_Box_space_dimension](#) (ppl_const_Pointset_Powerset_Uint32_Box_t ph, ppl_dimension_type *m)
- int [ppl_Pointset_Powerset_Uint32_Box_affine_dimension](#) (ppl_const_Pointset_Powerset_Uint32_Box_t ph, ppl_dimension_type *m)
- int [ppl_Pointset_Powerset_Uint32_Box_relation_with_Constraint](#) (ppl_const_Pointset_Powerset_Uint32_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Uint32_Box_relation_with_Generator](#) (ppl_const_Pointset_Powerset_Uint32_Box_t ph, ppl_const_Generator_t c)
- int [ppl_Pointset_Powerset_Uint32_Box_relation_with_Congruence](#) (ppl_const_Pointset_Powerset_Uint32_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Uint32_Box_is_empty](#) (ppl_const_Pointset_Powerset_Uint32_Box_t ph)
- int [ppl_Pointset_Powerset_Uint32_Box_is_universe](#) (ppl_const_Pointset_Powerset_Uint32_Box_t ph)
- int [ppl_Pointset_Powerset_Uint32_Box_is_bounded](#) (ppl_const_Pointset_Powerset_Uint32_Box_t ph)
- int [ppl_Pointset_Powerset_Uint32_Box_contains_integer_point](#) (ppl_const_Pointset_Powerset_Uint32_Box_t ph)
- int [ppl_Pointset_Powerset_Uint32_Box_is_topologically_closed](#) (ppl_const_Pointset_Powerset_Uint32_Box_t ph)
- int [ppl_Pointset_Powerset_Uint32_Box_is_discrete](#) (ppl_const_Pointset_Powerset_Uint32_Box_t ph)
- int [ppl_Pointset_Powerset_Uint32_Box_topological_closure_assign](#) (ppl_Pointset_Powerset_Uint32_Box_t ph)
- int [ppl_Pointset_Powerset_Uint32_Box_pairwise_reduce](#) (ppl_Pointset_Powerset_Uint32_Box_t ph)
- int [ppl_Pointset_Powerset_Uint32_Box_omega_reduce](#) (ppl_Pointset_Powerset_Uint32_Box_t ph)
- int [ppl_Pointset_Powerset_Uint32_Box_bounds_from_above](#) (ppl_const_Pointset_Powerset_Uint32_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_Uint32_Box_bounds_from_below](#) (ppl_const_Pointset_Powerset_Uint32_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_Uint32_Box_maximize](#) (ppl_const_Pointset_Powerset_Uint32_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_Uint32_Box_minimize](#) (ppl_const_Pointset_Powerset_Uint32_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_Uint32_Box_maximize_with_point](#) (ppl_const_Pointset_Powerset_Uint32_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_Uint32_Box_minimize_with_point](#) (ppl_const_Pointset_Powerset_Uint32_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)

- int [ppl_Pointset_Powerset_Uint32_Box_contains_Pointset_Powerset_Uint32_Box](#) (ppl_const_Pointset_Powerset_Uint32_Box_t x, ppl_const_Pointset_Powerset_Uint32_Box_t y)
- int [ppl_Pointset_Powerset_Uint32_Box_strictly_contains_Pointset_Powerset_Uint32_Box](#) (ppl_const_Pointset_Powerset_Uint32_Box_t x, ppl_const_Pointset_Powerset_Uint32_Box_t y)
- int [ppl_Pointset_Powerset_Uint32_Box_is_disjoint_from_Pointset_Powerset_Uint32_Box](#) (ppl_const_Pointset_Powerset_Uint32_Box_t x, ppl_const_Pointset_Powerset_Uint32_Box_t y)
- int [ppl_Pointset_Powerset_Uint32_Box_geometrically_covers_Pointset_Powerset_Uint32_Box](#) (ppl_const_Pointset_Powerset_Uint32_Box_t x, ppl_const_Pointset_Powerset_Uint32_Box_t y)
- int [ppl_Pointset_Powerset_Uint32_Box_geometrically_equals_Pointset_Powerset_Uint32_Box](#) (ppl_const_Pointset_Powerset_Uint32_Box_t x, ppl_const_Pointset_Powerset_Uint32_Box_t y)
- int [ppl_Pointset_Powerset_Uint32_Box_equals_Pointset_Powerset_Uint32_Box](#) (ppl_const_Pointset_Powerset_Uint32_Box_t x, ppl_const_Pointset_Powerset_Uint32_Box_t y)
- int [ppl_Pointset_Powerset_Uint32_Box_OK](#) (ppl_const_Pointset_Powerset_Uint32_Box_t ph)
- int [ppl_Pointset_Powerset_Uint32_Box_add_constraint](#) (ppl_Pointset_Powerset_Uint32_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Uint32_Box_add_congruence](#) (ppl_Pointset_Powerset_Uint32_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Uint32_Box_add_constraints](#) (ppl_Pointset_Powerset_Uint32_Box_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_Uint32_Box_add_congruences](#) (ppl_Pointset_Powerset_Uint32_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_Uint32_Box_refine_with_constraint](#) (ppl_Pointset_Powerset_Uint32_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Uint32_Box_refine_with_congruence](#) (ppl_Pointset_Powerset_Uint32_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Uint32_Box_refine_with_constraints](#) (ppl_Pointset_Powerset_Uint32_Box_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_Uint32_Box_refine_with_congruences](#) (ppl_Pointset_Powerset_Uint32_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_Uint32_Box_intersection_assign](#) (ppl_Pointset_Powerset_Uint32_Box_t x, ppl_const_Pointset_Powerset_Uint32_Box_t y)
- int [ppl_Pointset_Powerset_Uint32_Box_upper_bound_assign](#) (ppl_Pointset_Powerset_Uint32_Box_t x, ppl_const_Pointset_Powerset_Uint32_Box_t y)
- int [ppl_Pointset_Powerset_Uint32_Box_difference_assign](#) (ppl_Pointset_Powerset_Uint32_Box_t x, ppl_const_Pointset_Powerset_Uint32_Box_t y)
- int [ppl_Pointset_Powerset_Uint32_Box_concatenate_assign](#) (ppl_Pointset_Powerset_Uint32_Box_t x, ppl_const_Pointset_Powerset_Uint32_Box_t y)
- int [ppl_Pointset_Powerset_Uint32_Box_time_elapse_assign](#) (ppl_Pointset_Powerset_Uint32_Box_t x, ppl_const_Pointset_Powerset_Uint32_Box_t y)
- int [ppl_Pointset_Powerset_Uint32_Box_upper_bound_assign_if_exact](#) (ppl_Pointset_Powerset_Uint32_Box_t x, ppl_const_Pointset_Powerset_Uint32_Box_t y)
- int [ppl_Pointset_Powerset_Uint32_Box_simplify_using_context_assign](#) (ppl_Pointset_Powerset_Uint32_Box_t x, ppl_const_Pointset_Powerset_Uint32_Box_t y)
- int [ppl_Pointset_Powerset_Uint32_Box_constrains](#) (ppl_Pointset_Powerset_Uint32_Box_t ph, ppl_dimension_type var)
- int [ppl_Pointset_Powerset_Uint32_Box_unconstrain_space_dimension](#) (ppl_Pointset_Powerset_Uint32_Box_t ph, ppl_dimension_type var)
- int [ppl_Pointset_Powerset_Uint32_Box_unconstrain_space_dimensions](#) (ppl_Pointset_Powerset_Uint32_Box_t ph, ppl_dimension_type ds[], size_t n)
- int [ppl_Pointset_Powerset_Uint32_Box_affine_image](#) (ppl_Pointset_Powerset_Uint32_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)

- int [ppl_Pointset_Powerset_Uint32_Box_affine_preimage](#) (ppl_Pointset_Powerset_Uint32_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Uint32_Box_bounded_affine_image](#) (ppl_Pointset_Powerset_Uint32_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Uint32_Box_bounded_affine_preimage](#) (ppl_Pointset_Powerset_Uint32_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Uint32_Box_generalized_affine_image](#) (ppl_Pointset_Powerset_Uint32_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Uint32_Box_generalized_affine_preimage](#) (ppl_Pointset_Powerset_Uint32_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Uint32_Box_generalized_affine_image_lhs_rhs](#) (ppl_Pointset_Powerset_Uint32_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_Uint32_Box_generalized_affine_preimage_lhs_rhs](#) (ppl_Pointset_Powerset_Uint32_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_Uint32_Box_add_space_dimensions_and_embed](#) (ppl_Pointset_Powerset_Uint32_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Uint32_Box_add_space_dimensions_and_project](#) (ppl_Pointset_Powerset_Uint32_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Uint32_Box_remove_space_dimensions](#) (ppl_Pointset_Powerset_Uint32_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_Uint32_Box_remove_higher_space_dimensions](#) (ppl_Pointset_Powerset_Uint32_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Uint32_Box_expand_space_dimension](#) (ppl_Pointset_Powerset_Uint32_Box_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Pointset_Powerset_Uint32_Box_fold_space_dimensions](#) (ppl_Pointset_Powerset_Uint32_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Uint32_Box_map_space_dimensions](#) (ppl_Pointset_Powerset_Uint32_Box_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_Pointset_Powerset_Uint32_Box_drop_some_non_integer_points](#) (ppl_Pointset_Powerset_Uint32_Box_t ph, int complexity)
- int [ppl_Pointset_Powerset_Uint32_Box_drop_some_non_integer_points_2](#) (ppl_Pointset_Powerset_Uint32_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_Pointset_Powerset_Uint32_Box_external_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Uint32_Box_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Uint32_Box_total_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Uint32_Box_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Uint32_Box_size](#) (ppl_const_Pointset_Powerset_Uint32_Box_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Uint32_Box_add_disjunct](#) (ppl_Pointset_Powerset_Uint32_Box_t ps, ppl_const_Uint32_Box_t d)
- int [ppl_Pointset_Powerset_Uint32_Box_drop_disjunct](#) (ppl_Pointset_Powerset_Uint32_Box_t ps, ppl_const_Pointset_Powerset_Uint32_Box_iterator_t cit, ppl_Pointset_Powerset_Uint32_Box_iterator_t it)
- int [ppl_Pointset_Powerset_Uint32_Box_drop_disjuncts](#) (ppl_Pointset_Powerset_Uint32_Box_t ps, ppl_const_Pointset_Powerset_Uint32_Box_iterator_t first, ppl_const_Pointset_Powerset_Uint32_Box_iterator_t last)

10.146.1 Detailed Description

Types and functions for [ppl_Pointset_Powerset_Uint32_Box_tag](#).

10.146.2 Friends And Related Function Documentation

10.146.2.1 `int ppl_delete_Pointset_Powerset_Uint32_Box (ppl_const_Pointset_Powerset_Uint32_Box_t ph)` [[related](#)]

10.146.2.2 `int ppl_new_Pointset_Powerset_Uint32_Box_from_Congruence_System (ppl_Pointset_Powerset_Uint32_Box_t * pph, ppl_const_Congruence_System_t cs)` [[related](#)]

10.146.2.3 `int ppl_new_Pointset_Powerset_Uint32_Box_from_Constraint_System (ppl_Pointset_Powerset_Uint32_Box_t * pph, ppl_const_Constraint_System_t cs)` [[related](#)]

10.146.2.4 `int ppl_new_Pointset_Powerset_Uint32_Box_from_Pointset_Powerset_Uint32_Box (ppl_Pointset_Powerset_Uint32_Box_t * pph, ppl_const_Pointset_Powerset_Uint32_Box_t ph)` [[related](#)]

10.146.2.5 `int ppl_new_Pointset_Powerset_Uint32_Box_from_Pointset_Powerset_Uint32_Box_with_complexity (ppl_Pointset_Powerset_Uint32_Box_t * pph, ppl_const_Pointset_Powerset_Uint32_Box_t ph, int complexity)` [[related](#)]

10.146.2.6 `int ppl_new_Pointset_Powerset_Uint32_Box_from_space_dimension (ppl_Pointset_Powerset_Uint32_Box_t * pph, ppl_dimension_type d, int empty)` [[related](#)]

10.146.2.7 `int ppl_new_Pointset_Powerset_Uint32_Box_from_Uint32_Box (ppl_Pointset_Powerset_Uint32_Box_t * pph, ppl_const_Uint32_Box_t ph)` [[related](#)]

- 10.146.2.8 `int ppl_new_Pointset_Powerset_Uint32_Box_from_Uint32_Box_with_complexity`
(`ppl_Pointset_Powerset_Uint32_Box_t * pph`, `ppl_const_Uint32_Box_t ph`, `int complexity`) [`related`]
- 10.146.2.9 `int ppl_Pointset_Powerset_Uint32_Box_add_congruence` (`ppl_-`
`Pointset_Powerset_Uint32_Box_t ph`, `ppl_const_Congruence_t c`)
[`related`]
- 10.146.2.10 `int ppl_Pointset_Powerset_Uint32_Box_add_congruences` (`ppl_Pointset_-`
`Powerset_Uint32_Box_t ph`, `ppl_const_Congruence_System_t cs`)
[`related`]
- 10.146.2.11 `int ppl_Pointset_Powerset_Uint32_Box_add_constraint` (`ppl_-`
`Pointset_Powerset_Uint32_Box_t ph`, `ppl_const_Constraint_t c`)
[`related`]
- 10.146.2.12 `int ppl_Pointset_Powerset_Uint32_Box_add_constraints` (`ppl_Pointset_-`
`Powerset_Uint32_Box_t ph`, `ppl_const_Constraint_System_t cs`)
[`related`]
- 10.146.2.13 `int ppl_Pointset_Powerset_Uint32_Box_add_disjunct` (`ppl_-`
`Pointset_Powerset_Uint32_Box_t ps`, `ppl_const_Uint32_Box_t d`)
[`related`]
- 10.146.2.14 `int ppl_Pointset_Powerset_Uint32_Box_add_space_dimensions_and_embed`
(`ppl_Pointset_Powerset_Uint32_Box_t ph`, `ppl_dimension_type d`) [`related`]
- 10.146.2.15 `int ppl_Pointset_Powerset_Uint32_Box_add_space_dimensions_and_project`
(`ppl_Pointset_Powerset_Uint32_Box_t ph`, `ppl_dimension_type d`) [`related`]

- 10.146.2.16 `int ppl_Pointset_Powerset_Uint32_Box_affine_dimension (ppl_ -
const_Pointset_Powerset_Uint32_Box_t ph, ppl_dimension_type * m)`
[related]
- 10.146.2.17 `int ppl_Pointset_Powerset_Uint32_Box_affine_image (ppl_Pointset_Powerset_ -
Uint32_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le,
ppl_const_Coefficient_t d)` [related]
- 10.146.2.18 `int ppl_Pointset_Powerset_Uint32_Box_affine_preimage (ppl_Pointset_Powerset_ -
Uint32_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le,
ppl_const_Coefficient_t d)` [related]
- 10.146.2.19 `int ppl_Pointset_Powerset_Uint32_Box_bounded_affine_image
(ppl_Pointset_Powerset_Uint32_Box_t ph, ppl_dimension_type var,
ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub,
ppl_const_Coefficient_t d)` [related]
- 10.146.2.20 `int ppl_Pointset_Powerset_Uint32_Box_bounded_affine_preimage
(ppl_Pointset_Powerset_Uint32_Box_t ph, ppl_dimension_type var,
ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub,
ppl_const_Coefficient_t d)` [related]
- 10.146.2.21 `int ppl_Pointset_Powerset_Uint32_Box_bounds_from_above
(ppl_const_Pointset_Powerset_Uint32_Box_t ph, ppl_const_Linear_Expression_t le)`
[related]
- 10.146.2.22 `int ppl_Pointset_Powerset_Uint32_Box_bounds_from_below
(ppl_const_Pointset_Powerset_Uint32_Box_t ph, ppl_const_Linear_Expression_t le)`
[related]
- 10.146.2.23 `int ppl_Pointset_Powerset_Uint32_Box_concatenate_assign (ppl_Pointset_ -
Powerset_Uint32_Box_t x, ppl_const_Pointset_Powerset_Uint32_Box_t y)`
[related]

- 10.146.2.24 **int ppl_Pointset_Powerset_Uint32_Box_constrains** (ppl_Pointset_Powerset_Uint32_Box_t *ph*, ppl_dimension_type *var*) [**related**]
- 10.146.2.25 **int ppl_Pointset_Powerset_Uint32_Box_contains_integer_point** (ppl_const_Pointset_Powerset_Uint32_Box_t *ph*) [**related**]
- 10.146.2.26 **int ppl_Pointset_Powerset_Uint32_Box_contains_Pointset_Powerset_Uint32_Box** (ppl_const_Pointset_Powerset_Uint32_Box_t *x*, ppl_const_Pointset_Powerset_Uint32_Box_t *y*) [**related**]
- 10.146.2.27 **int ppl_Pointset_Powerset_Uint32_Box_difference_assign** (ppl_Pointset_Powerset_Uint32_Box_t *x*, ppl_const_Pointset_Powerset_Uint32_Box_t *y*) [**related**]
- 10.146.2.28 **int ppl_Pointset_Powerset_Uint32_Box_drop_disjunct** (ppl_Pointset_Powerset_Uint32_Box_t *ps*, ppl_const_Pointset_Powerset_Uint32_Box_iterator_t *cit*, ppl_Pointset_Powerset_Uint32_Box_iterator_t *it*) [**related**]
- 10.146.2.29 **int ppl_Pointset_Powerset_Uint32_Box_drop_disjuncts** (ppl_Pointset_Powerset_Uint32_Box_t *ps*, ppl_const_Pointset_Powerset_Uint32_Box_iterator_t *first*, ppl_const_Pointset_Powerset_Uint32_Box_iterator_t *last*) [**related**]
- 10.146.2.30 **int ppl_Pointset_Powerset_Uint32_Box_drop_some_non_integer_points** (ppl_Pointset_Powerset_Uint32_Box_t *ph*, int *complexity*) [**related**]
- 10.146.2.31 **int ppl_Pointset_Powerset_Uint32_Box_drop_some_non_integer_points_2** (ppl_Pointset_Powerset_Uint32_Box_t *ph*, ppl_dimension_type *ds*[], size_t *n*, int *complexity*) [**related**]

- 10.146.2.32** `int ppl_Pointset_Powerset_Uint32_Box_equals_Pointset_Powerset_Uint32_Box (ppl_const_Pointset_Powerset_Uint32_Box_t x, ppl_const_Pointset_Powerset_Uint32_Box_t y)` [**related**]
- 10.146.2.33** `int ppl_Pointset_Powerset_Uint32_Box_expand_space_dimension (ppl_Pointset_Powerset_Uint32_Box_t ph, ppl_dimension_type d, ppl_dimension_type m)` [**related**]
- 10.146.2.34** `int ppl_Pointset_Powerset_Uint32_Box_external_memory_in_bytes (ppl_const_Pointset_Powerset_Uint32_Box_t ps, size_t * sz)` [**related**]
- 10.146.2.35** `int ppl_Pointset_Powerset_Uint32_Box_fold_space_dimensions (ppl_Pointset_Powerset_Uint32_Box_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [**related**]
- 10.146.2.36** `int ppl_Pointset_Powerset_Uint32_Box_generalized_affine_image (ppl_Pointset_Powerset_Uint32_Box_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.146.2.37** `int ppl_Pointset_Powerset_Uint32_Box_generalized_affine_image_lhs_rhs (ppl_Pointset_Powerset_Uint32_Box_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` [**related**]
- 10.146.2.38** `int ppl_Pointset_Powerset_Uint32_Box_generalized_affine_preimage (ppl_Pointset_Powerset_Uint32_Box_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]

- 10.146.2.39 `int ppl_Pointset_Powerset_Uint32_Box_generalized_affine_preimage_lhs_rhs`
(`ppl_Pointset_Powerset_Uint32_Box_t ph`, `ppl_const_Linear_Expression_t lhs`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
[related]
- 10.146.2.40 `int ppl_Pointset_Powerset_Uint32_Box_geometrically_covers_Pointset_-`
`Powerset_Uint32_Box` (`ppl_const_Pointset_Powerset_Uint32_Box_t x`,
`ppl_const_Pointset_Powerset_Uint32_Box_t y`) [related]
- 10.146.2.41 `int ppl_Pointset_Powerset_Uint32_Box_geometrically_equals_Pointset_-`
`Powerset_Uint32_Box` (`ppl_const_Pointset_Powerset_Uint32_Box_t x`,
`ppl_const_Pointset_Powerset_Uint32_Box_t y`) [related]
- 10.146.2.42 `int ppl_Pointset_Powerset_Uint32_Box_intersection_assign` (`ppl_Pointset_-`
`Powerset_Uint32_Box_t x`, `ppl_const_Pointset_Powerset_Uint32_Box_t y`)
[related]
- 10.146.2.43 `int ppl_Pointset_Powerset_Uint32_Box_is_bounded` (`ppl_const_Pointset_Powerset_-`
`Uint32_Box_t ph`) [related]
- 10.146.2.44 `int ppl_Pointset_Powerset_Uint32_Box_is_discrete` (`ppl_const_Pointset_Powerset_-`
`Uint32_Box_t ph`) [related]
- 10.146.2.45 `int ppl_Pointset_Powerset_Uint32_Box_is_disjoint_from_Pointset_-`
`Powerset_Uint32_Box` (`ppl_const_Pointset_Powerset_Uint32_Box_t x`,
`ppl_const_Pointset_Powerset_Uint32_Box_t y`) [related]
- 10.146.2.46 `int ppl_Pointset_Powerset_Uint32_Box_is_empty` (`ppl_const_Pointset_Powerset_-`
`Uint32_Box_t ph`) [related]

- 10.146.2.47** `int ppl_Pointset_Powerset_Uint32_Box_is_topologically_closed`
`(ppl_const_Pointset_Powerset_Uint32_Box_t ph)` [**related**]
- 10.146.2.48** `int ppl_Pointset_Powerset_Uint32_Box_is_universe` (`ppl_const_Pointset_Powerset_Uint32_Box_t ph`) [**related**]
- 10.146.2.49** `int ppl_Pointset_Powerset_Uint32_Box_map_space_dimensions`
`(ppl_Pointset_Powerset_Uint32_Box_t ph, ppl_dimension_type maps[], size_t n)`
[related]
- 10.146.2.50** `int ppl_Pointset_Powerset_Uint32_Box_maximize` (`ppl_const_Pointset_Powerset_Uint32_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum`) [**related**]
- 10.146.2.51** `int ppl_Pointset_Powerset_Uint32_Box_maximize_with_point`
`(ppl_const_Pointset_Powerset_Uint32_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` [**related**]
- 10.146.2.52** `int ppl_Pointset_Powerset_Uint32_Box_minimize` (`ppl_const_Pointset_Powerset_Uint32_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum`) [**related**]
- 10.146.2.53** `int ppl_Pointset_Powerset_Uint32_Box_minimize_with_point`
`(ppl_const_Pointset_Powerset_Uint32_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` [**related**]
- 10.146.2.54** `int ppl_Pointset_Powerset_Uint32_Box_OK` (`ppl_const_Pointset_Powerset_Uint32_Box_t ph`) [**related**]

- 10.146.2.55 `int ppl_Pointset_Powerset_Uint32_Box_omega_reduce (ppl_Pointset_Powerset_Uint32_Box_t ph)` [`related`]
- 10.146.2.56 `int ppl_Pointset_Powerset_Uint32_Box_pairwise_reduce (ppl_Pointset_Powerset_Uint32_Box_t ph)` [`related`]
- 10.146.2.57 `int ppl_Pointset_Powerset_Uint32_Box_refine_with_congruence (ppl_Pointset_Powerset_Uint32_Box_t ph, ppl_const_Congruence_t c)` [`related`]
- 10.146.2.58 `int ppl_Pointset_Powerset_Uint32_Box_refine_with_congruences (ppl_Pointset_Powerset_Uint32_Box_t ph, ppl_const_Congruence_System_t cs)` [`related`]
- 10.146.2.59 `int ppl_Pointset_Powerset_Uint32_Box_refine_with_constraint (ppl_Pointset_Powerset_Uint32_Box_t ph, ppl_const_Constraint_t c)` [`related`]
- 10.146.2.60 `int ppl_Pointset_Powerset_Uint32_Box_refine_with_constraints (ppl_Pointset_Powerset_Uint32_Box_t ph, ppl_const_Constraint_System_t cs)` [`related`]
- 10.146.2.61 `int ppl_Pointset_Powerset_Uint32_Box_relation_with_Congruence (ppl_const_Pointset_Powerset_Uint32_Box_t ph, ppl_const_Congruence_t c)` [`related`]
- 10.146.2.62 `int ppl_Pointset_Powerset_Uint32_Box_relation_with_Constraint (ppl_const_Pointset_Powerset_Uint32_Box_t ph, ppl_const_Constraint_t c)` [`related`]

- 10.146.2.63 `int ppl_Pointset_Powerset_Uint32_Box_relation_with_Generator`
(`ppl_const_Pointset_Powerset_Uint32_Box_t ph`, `ppl_const_Generator_t c`)
[related]
- 10.146.2.64 `int ppl_Pointset_Powerset_Uint32_Box_remove_higher_space_dimensions`
(`ppl_Pointset_Powerset_Uint32_Box_t ph`, `ppl_dimension_type d`) [related]
- 10.146.2.65 `int ppl_Pointset_Powerset_Uint32_Box_remove_space_dimensions`
(`ppl_Pointset_Powerset_Uint32_Box_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`)
[related]
- 10.146.2.66 `int ppl_Pointset_Powerset_Uint32_Box_simplify_using_context_assign`
(`ppl_Pointset_Powerset_Uint32_Box_t x`, `ppl_const_Pointset_Powerset_Uint32_Box_t y`) [related]
- 10.146.2.67 `int ppl_Pointset_Powerset_Uint32_Box_size` (`ppl_const_Pointset_Powerset_Uint32_Box_t ps`, `size_t * sz`) [related]
- 10.146.2.68 `int ppl_Pointset_Powerset_Uint32_Box_space_dimension` (`ppl_const_Pointset_Powerset_Uint32_Box_t ph`, `ppl_dimension_type * m`)
[related]
- 10.146.2.69 `int ppl_Pointset_Powerset_Uint32_Box_strictly_contains_Pointset_Powerset_Uint32_Box` (`ppl_const_Pointset_Powerset_Uint32_Box_t x`, `ppl_const_Pointset_Powerset_Uint32_Box_t y`) [related]
- 10.146.2.70 `int ppl_Pointset_Powerset_Uint32_Box_time_elapse_assign` (`ppl_Pointset_Powerset_Uint32_Box_t x`, `ppl_const_Pointset_Powerset_Uint32_Box_t y`)
[related]

- 10.146.2.71 `int ppl_Pointset_Powerset_Uint32_Box_topological_closure_assign`
(`ppl_Pointset_Powerset_Uint32_Box_t ph`) [**related**]

- 10.146.2.72 `int ppl_Pointset_Powerset_Uint32_Box_total_memory_in_bytes`
(`ppl_const_Pointset_Powerset_Uint32_Box_t ps`, `size_t * sz`) [**related**]

- 10.146.2.73 `int ppl_Pointset_Powerset_Uint32_Box_unconstrain_space_dimension`
(`ppl_Pointset_Powerset_Uint32_Box_t ph`, `ppl_dimension_type var`) [**related**]

- 10.146.2.74 `int ppl_Pointset_Powerset_Uint32_Box_unconstrain_space_dimensions`
(`ppl_Pointset_Powerset_Uint32_Box_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`)
[**related**]

- 10.146.2.75 `int ppl_Pointset_Powerset_Uint32_Box_upper_bound_assign`
(`ppl_Pointset_Powerset_Uint32_Box_t x`, `ppl_const_Pointset_Powerset_Uint32_Box_t y`) [**related**]

- 10.146.2.76 `int ppl_Pointset_Powerset_Uint32_Box_upper_bound_assign_if_exact`
(`ppl_Pointset_Powerset_Uint32_Box_t x`, `ppl_const_Pointset_Powerset_Uint32_Box_t y`) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.147 `ppl_Pointset_Powerset_Uint64_Box_const_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Uint64_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_Uint64_Box_const_iterator` (`ppl_Pointset_Powerset_Uint64_Box_-const_iterator_t *pit`)

- int [ppl_new_Pointset_Powerset_Uint64_Box_const_iterator_from_const_iterator](#) (ppl_Pointset_Powerset_Uint64_Box_const_iterator_t *px, ppl_const_Pointset_Powerset_Uint64_Box_const_iterator_t y)
- int [ppl_Pointset_Powerset_Uint64_Box_const_iterator_begin](#) (ppl_const_Pointset_Powerset_Uint64_Box_t ps, ppl_Pointset_Powerset_Uint64_Box_const_iterator_t psit)
- int [ppl_Pointset_Powerset_Uint64_Box_const_iterator_end](#) (ppl_const_Pointset_Powerset_Uint64_Box_t ps, ppl_Pointset_Powerset_Uint64_Box_const_iterator_t psit)
- int [ppl_Pointset_Powerset_Uint64_Box_const_iterator_equal_test](#) (ppl_const_Pointset_Powerset_Uint64_Box_const_iterator_t x, ppl_const_Pointset_Powerset_Uint64_Box_const_iterator_t y)
- int [ppl_Pointset_Powerset_Uint64_Box_const_iterator_increment](#) (ppl_Pointset_Powerset_Uint64_Box_const_iterator_t psit)
- int [ppl_Pointset_Powerset_Uint64_Box_const_iterator_decrement](#) (ppl_Pointset_Powerset_Uint64_Box_const_iterator_t psit)
- int [ppl_Pointset_Powerset_Uint64_Box_const_iterator_dereference](#) (ppl_const_Pointset_Powerset_Uint64_Box_const_iterator_t ps, ppl_const_Uint64_Box_t *d)
- int [ppl_delete_Pointset_Powerset_Uint64_Box_const_iterator](#) (ppl_const_Pointset_Powerset_Uint64_Box_const_iterator_t psit)

10.147.1 Detailed Description

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Uint64_Box_tag](#).

10.147.2 Friends And Related Function Documentation

- 10.147.2.1** int [ppl_delete_Pointset_Powerset_Uint64_Box_const_iterator](#)
(ppl_const_Pointset_Powerset_Uint64_Box_const_iterator_t *psit*) [[related](#)]
- 10.147.2.2** int [ppl_new_Pointset_Powerset_Uint64_Box_const_iterator](#)
(ppl_Pointset_Powerset_Uint64_Box_const_iterator_t * *pit*) [[related](#)]
- 10.147.2.3** int [ppl_new_Pointset_Powerset_Uint64_Box_const_iterator_from_const_iterator](#) (ppl_Pointset_Powerset_Uint64_Box_const_iterator_t * *px*,
ppl_const_Pointset_Powerset_Uint64_Box_const_iterator_t *y*) [[related](#)]
- 10.147.2.4** int [ppl_Pointset_Powerset_Uint64_Box_const_iterator_begin](#) (ppl_const_Pointset_Powerset_Uint64_Box_t *ps*, ppl_Pointset_Powerset_Uint64_Box_const_iterator_t *psit*)
[[related](#)]
- 10.147.2.5** int [ppl_Pointset_Powerset_Uint64_Box_const_iterator_decrement](#)
(ppl_Pointset_Powerset_Uint64_Box_const_iterator_t *psit*) [[related](#)]

- 10.147.2.6** `int ppl_Pointset_Powerset_Uint64_Box_const_iterator_dereference (ppl_const_Pointset_Powerset_Uint64_Box_const_iterator_t ps, ppl_const_Uint64_Box_t * d)` **[related]**
- 10.147.2.7** `int ppl_Pointset_Powerset_Uint64_Box_const_iterator_end (ppl_const_Pointset_Powerset_Uint64_Box_t ps, ppl_Pointset_Powerset_Uint64_Box_const_iterator_t psit)` **[related]**
- 10.147.2.8** `int ppl_Pointset_Powerset_Uint64_Box_const_iterator_equal_test (ppl_const_Pointset_Powerset_Uint64_Box_const_iterator_t x, ppl_const_Pointset_Powerset_Uint64_Box_const_iterator_t y)` **[related]**
- 10.147.2.9** `int ppl_Pointset_Powerset_Uint64_Box_const_iterator_increment (ppl_Pointset_Powerset_Uint64_Box_const_iterator_t psit)` **[related]**

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.148 `ppl_Pointset_Powerset_Uint64_Box_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a `ppl_Pointset_Powerset_Uint64_Box_tag`.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_Uint64_Box_iterator (ppl_Pointset_Powerset_Uint64_Box_iterator_t *pit)`
- `int ppl_new_Pointset_Powerset_Uint64_Box_iterator_from_iterator (ppl_Pointset_Powerset_Uint64_Box_iterator_t *px, ppl_const_Pointset_Powerset_Uint64_Box_iterator_t y)`
- `int ppl_Pointset_Powerset_Uint64_Box_iterator_begin (ppl_Pointset_Powerset_Uint64_Box_t ps, ppl_Pointset_Powerset_Uint64_Box_iterator_t psit)`
- `int ppl_Pointset_Powerset_Uint64_Box_iterator_end (ppl_Pointset_Powerset_Uint64_Box_t ps, ppl_Pointset_Powerset_Uint64_Box_iterator_t psit)`
- `int ppl_Pointset_Powerset_Uint64_Box_iterator_equal_test (ppl_const_Pointset_Powerset_Uint64_Box_iterator_t x, ppl_const_Pointset_Powerset_Uint64_Box_iterator_t y)`
- `int ppl_Pointset_Powerset_Uint64_Box_iterator_increment (ppl_Pointset_Powerset_Uint64_Box_iterator_t psit)`
- `int ppl_Pointset_Powerset_Uint64_Box_iterator_decrement (ppl_Pointset_Powerset_Uint64_Box_iterator_t psit)`

- int [ppl_Pointset_Powerset_Uint64_Box_iterator_dereference](#) (ppl_const_Pointset_Powerset_Uint64_Box_iterator_t ps, ppl_const_Uint64_Box_t *d)
- int [ppl_delete_Pointset_Powerset_Uint64_Box_iterator](#) (ppl_const_Pointset_Powerset_Uint64_Box_iterator_t psit)

10.148.1 Detailed Description

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Uint64_Box_tag](#).

10.148.2 Friends And Related Function Documentation

10.148.2.1 int [ppl_delete_Pointset_Powerset_Uint64_Box_iterator](#) (ppl_const_Pointset_Powerset_Uint64_Box_iterator_t *psit*) [[related](#)]

10.148.2.2 int [ppl_new_Pointset_Powerset_Uint64_Box_iterator](#) (ppl_Pointset_Powerset_Uint64_Box_iterator_t * *pit*) [[related](#)]

10.148.2.3 int [ppl_new_Pointset_Powerset_Uint64_Box_iterator_from_iterator](#) (ppl_Pointset_Powerset_Uint64_Box_iterator_t * *px*, ppl_const_Pointset_Powerset_Uint64_Box_iterator_t *y*) [[related](#)]

10.148.2.4 int [ppl_Pointset_Powerset_Uint64_Box_iterator_begin](#) (ppl_Pointset_Powerset_Uint64_Box_t *ps*, ppl_Pointset_Powerset_Uint64_Box_iterator_t *psit*) [[related](#)]

10.148.2.5 int [ppl_Pointset_Powerset_Uint64_Box_iterator_decrement](#) (ppl_Pointset_Powerset_Uint64_Box_iterator_t *psit*) [[related](#)]

10.148.2.6 int [ppl_Pointset_Powerset_Uint64_Box_iterator_dereference](#) (ppl_const_Pointset_Powerset_Uint64_Box_iterator_t *ps*, ppl_const_Uint64_Box_t * *d*) [[related](#)]

10.148.2.7 `int ppl_Pointset_Powerset_Uint64_Box_iterator_end (ppl_Pointset_Powerset_Uint64_Box_t ps, ppl_Pointset_Powerset_Uint64_Box_iterator_t psit)` [**related**]

10.148.2.8 `int ppl_Pointset_Powerset_Uint64_Box_iterator_equal_test (ppl_const_Pointset_Powerset_Uint64_Box_iterator_t x, ppl_const_Pointset_Powerset_Uint64_Box_iterator_t y)` [**related**]

10.148.2.9 `int ppl_Pointset_Powerset_Uint64_Box_iterator_increment (ppl_Pointset_Powerset_Uint64_Box_iterator_t psit)` [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.149 `ppl_Pointset_Powerset_Uint64_Box_tag` Interface Reference

Types and functions for [ppl_Pointset_Powerset_Uint64_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Pointset_Powerset_Uint64_Box (ppl_const_Pointset_Powerset_Uint64_Box_t ph)`
- `int ppl_new_Pointset_Powerset_Uint64_Box_from_space_dimension (ppl_Pointset_Powerset_Uint64_Box_t *pph, ppl_dimension_type d, int empty)`
- `int ppl_new_Pointset_Powerset_Uint64_Box_from_Pointset_Powerset_Uint64_Box (ppl_Pointset_Powerset_Uint64_Box_t *pph, ppl_const_Pointset_Powerset_Uint64_Box_t ph)`
- `int ppl_new_Pointset_Powerset_Uint64_Box_from_Uint64_Box (ppl_Pointset_Powerset_Uint64_Box_t *pph, ppl_const_Uint64_Box_t ph)`
- `int ppl_new_Pointset_Powerset_Uint64_Box_from_Pointset_Powerset_Uint64_Box_with_complexity (ppl_Pointset_Powerset_Uint64_Box_t *pph, ppl_const_Pointset_Powerset_Uint64_Box_t ph, int complexity)`
- `int ppl_new_Pointset_Powerset_Uint64_Box_from_Uint64_Box_with_complexity (ppl_Pointset_Powerset_Uint64_Box_t *pph, ppl_const_Uint64_Box_t ph, int complexity)`
- `int ppl_new_Pointset_Powerset_Uint64_Box_from_Constraint_System (ppl_Pointset_Powerset_Uint64_Box_t *pph, ppl_const_Constraint_System_t cs)`
- `int ppl_new_Pointset_Powerset_Uint64_Box_from_Congruence_System (ppl_Pointset_Powerset_Uint64_Box_t *pph, ppl_const_Congruence_System_t cs)`
- `int ppl_Pointset_Powerset_Uint64_Box_space_dimension (ppl_const_Pointset_Powerset_Uint64_Box_t ph, ppl_dimension_type *m)`
- `int ppl_Pointset_Powerset_Uint64_Box_affine_dimension (ppl_const_Pointset_Powerset_Uint64_Box_t ph, ppl_dimension_type *m)`

- int [ppl_Pointset_Powerset_Uint64_Box_relation_with_Constraint](#) (ppl_const_Pointset_Powerset_Uint64_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Uint64_Box_relation_with_Generator](#) (ppl_const_Pointset_Powerset_Uint64_Box_t ph, ppl_const_Generator_t c)
- int [ppl_Pointset_Powerset_Uint64_Box_relation_with_Congruence](#) (ppl_const_Pointset_Powerset_Uint64_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Uint64_Box_is_empty](#) (ppl_const_Pointset_Powerset_Uint64_Box_t ph)
- int [ppl_Pointset_Powerset_Uint64_Box_is_universe](#) (ppl_const_Pointset_Powerset_Uint64_Box_t ph)
- int [ppl_Pointset_Powerset_Uint64_Box_is_bounded](#) (ppl_const_Pointset_Powerset_Uint64_Box_t ph)
- int [ppl_Pointset_Powerset_Uint64_Box_contains_integer_point](#) (ppl_const_Pointset_Powerset_Uint64_Box_t ph)
- int [ppl_Pointset_Powerset_Uint64_Box_is_topologically_closed](#) (ppl_const_Pointset_Powerset_Uint64_Box_t ph)
- int [ppl_Pointset_Powerset_Uint64_Box_is_discrete](#) (ppl_const_Pointset_Powerset_Uint64_Box_t ph)
- int [ppl_Pointset_Powerset_Uint64_Box_topological_closure_assign](#) (ppl_Pointset_Powerset_Uint64_Box_t ph)
- int [ppl_Pointset_Powerset_Uint64_Box_pairwise_reduce](#) (ppl_Pointset_Powerset_Uint64_Box_t ph)
- int [ppl_Pointset_Powerset_Uint64_Box_omega_reduce](#) (ppl_Pointset_Powerset_Uint64_Box_t ph)
- int [ppl_Pointset_Powerset_Uint64_Box_bounds_from_above](#) (ppl_const_Pointset_Powerset_Uint64_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_Uint64_Box_bounds_from_below](#) (ppl_const_Pointset_Powerset_Uint64_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Pointset_Powerset_Uint64_Box_maximize](#) (ppl_const_Pointset_Powerset_Uint64_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_Uint64_Box_minimize](#) (ppl_const_Pointset_Powerset_Uint64_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Pointset_Powerset_Uint64_Box_maximize_with_point](#) (ppl_const_Pointset_Powerset_Uint64_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_Uint64_Box_minimize_with_point](#) (ppl_const_Pointset_Powerset_Uint64_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Pointset_Powerset_Uint64_Box_contains_Pointset_Powerset_Uint64_Box](#) (ppl_const_Pointset_Powerset_Uint64_Box_t x, ppl_const_Pointset_Powerset_Uint64_Box_t y)
- int [ppl_Pointset_Powerset_Uint64_Box_strictly_contains_Pointset_Powerset_Uint64_Box](#) (ppl_const_Pointset_Powerset_Uint64_Box_t x, ppl_const_Pointset_Powerset_Uint64_Box_t y)
- int [ppl_Pointset_Powerset_Uint64_Box_is_disjoint_from_Pointset_Powerset_Uint64_Box](#) (ppl_const_Pointset_Powerset_Uint64_Box_t x, ppl_const_Pointset_Powerset_Uint64_Box_t y)
- int [ppl_Pointset_Powerset_Uint64_Box_geometrically_covers_Pointset_Powerset_Uint64_Box](#) (ppl_const_Pointset_Powerset_Uint64_Box_t x, ppl_const_Pointset_Powerset_Uint64_Box_t y)
- int [ppl_Pointset_Powerset_Uint64_Box_geometrically_equals_Pointset_Powerset_Uint64_Box](#) (ppl_const_Pointset_Powerset_Uint64_Box_t x, ppl_const_Pointset_Powerset_Uint64_Box_t y)
- int [ppl_Pointset_Powerset_Uint64_Box_equals_Pointset_Powerset_Uint64_Box](#) (ppl_const_Pointset_Powerset_Uint64_Box_t x, ppl_const_Pointset_Powerset_Uint64_Box_t y)
- int [ppl_Pointset_Powerset_Uint64_Box_OK](#) (ppl_const_Pointset_Powerset_Uint64_Box_t ph)

- int [ppl_Pointset_Powerset_Uint64_Box_add_constraint](#) (ppl_Pointset_Powerset_Uint64_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Uint64_Box_add_congruence](#) (ppl_Pointset_Powerset_Uint64_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Uint64_Box_add_constraints](#) (ppl_Pointset_Powerset_Uint64_Box_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_Uint64_Box_add_congruences](#) (ppl_Pointset_Powerset_Uint64_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_Uint64_Box_refine_with_constraint](#) (ppl_Pointset_Powerset_Uint64_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Uint64_Box_refine_with_congruence](#) (ppl_Pointset_Powerset_Uint64_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Uint64_Box_refine_with_constraints](#) (ppl_Pointset_Powerset_Uint64_Box_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_Uint64_Box_refine_with_congruences](#) (ppl_Pointset_Powerset_Uint64_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_Uint64_Box_intersection_assign](#) (ppl_Pointset_Powerset_Uint64_Box_t x, ppl_const_Pointset_Powerset_Uint64_Box_t y)
- int [ppl_Pointset_Powerset_Uint64_Box_upper_bound_assign](#) (ppl_Pointset_Powerset_Uint64_Box_t x, ppl_const_Pointset_Powerset_Uint64_Box_t y)
- int [ppl_Pointset_Powerset_Uint64_Box_difference_assign](#) (ppl_Pointset_Powerset_Uint64_Box_t x, ppl_const_Pointset_Powerset_Uint64_Box_t y)
- int [ppl_Pointset_Powerset_Uint64_Box_concatenate_assign](#) (ppl_Pointset_Powerset_Uint64_Box_t x, ppl_const_Pointset_Powerset_Uint64_Box_t y)
- int [ppl_Pointset_Powerset_Uint64_Box_time_elapse_assign](#) (ppl_Pointset_Powerset_Uint64_Box_t x, ppl_const_Pointset_Powerset_Uint64_Box_t y)
- int [ppl_Pointset_Powerset_Uint64_Box_upper_bound_assign_if_exact](#) (ppl_Pointset_Powerset_Uint64_Box_t x, ppl_const_Pointset_Powerset_Uint64_Box_t y)
- int [ppl_Pointset_Powerset_Uint64_Box_simplify_using_context_assign](#) (ppl_Pointset_Powerset_Uint64_Box_t x, ppl_const_Pointset_Powerset_Uint64_Box_t y)
- int [ppl_Pointset_Powerset_Uint64_Box_constrains](#) (ppl_Pointset_Powerset_Uint64_Box_t ph, ppl_dimension_type var)
- int [ppl_Pointset_Powerset_Uint64_Box_unconstrain_space_dimension](#) (ppl_Pointset_Powerset_Uint64_Box_t ph, ppl_dimension_type var)
- int [ppl_Pointset_Powerset_Uint64_Box_unconstrain_space_dimensions](#) (ppl_Pointset_Powerset_Uint64_Box_t ph, ppl_dimension_type ds[], size_t n)
- int [ppl_Pointset_Powerset_Uint64_Box_affine_image](#) (ppl_Pointset_Powerset_Uint64_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Uint64_Box_affine_preimage](#) (ppl_Pointset_Powerset_Uint64_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Uint64_Box_bounded_affine_image](#) (ppl_Pointset_Powerset_Uint64_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Uint64_Box_bounded_affine_preimage](#) (ppl_Pointset_Powerset_Uint64_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Uint64_Box_generalized_affine_image](#) (ppl_Pointset_Powerset_Uint64_Box_t ph, ppl_dimension_type var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Uint64_Box_generalized_affine_preimage](#) (ppl_Pointset_Powerset_Uint64_Box_t ph, ppl_dimension_type var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)

- int [ppl_Pointset_Powerset_Uint64_Box_generalized_affine_image_lhs_rhs](#) (ppl_Pointset_Powerset_Uint64_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_Uint64_Box_generalized_affine_preimage_lhs_rhs](#) (ppl_Pointset_Powerset_Uint64_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_Uint64_Box_add_space_dimensions_and_embed](#) (ppl_Pointset_Powerset_Uint64_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Uint64_Box_add_space_dimensions_and_project](#) (ppl_Pointset_Powerset_Uint64_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Uint64_Box_remove_space_dimensions](#) (ppl_Pointset_Powerset_Uint64_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_Uint64_Box_remove_higher_space_dimensions](#) (ppl_Pointset_Powerset_Uint64_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Uint64_Box_expand_space_dimension](#) (ppl_Pointset_Powerset_Uint64_Box_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Pointset_Powerset_Uint64_Box_fold_space_dimensions](#) (ppl_Pointset_Powerset_Uint64_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Uint64_Box_map_space_dimensions](#) (ppl_Pointset_Powerset_Uint64_Box_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_Pointset_Powerset_Uint64_Box_drop_some_non_integer_points](#) (ppl_Pointset_Powerset_Uint64_Box_t ph, int complexity)
- int [ppl_Pointset_Powerset_Uint64_Box_drop_some_non_integer_points_2](#) (ppl_Pointset_Powerset_Uint64_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_Pointset_Powerset_Uint64_Box_external_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Uint64_Box_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Uint64_Box_total_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Uint64_Box_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Uint64_Box_size](#) (ppl_const_Pointset_Powerset_Uint64_Box_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Uint64_Box_add_disjunct](#) (ppl_Pointset_Powerset_Uint64_Box_t ps, ppl_const_Uint64_Box_t d)
- int [ppl_Pointset_Powerset_Uint64_Box_drop_disjunct](#) (ppl_Pointset_Powerset_Uint64_Box_t ps, ppl_const_Pointset_Powerset_Uint64_Box_iterator_t cit, ppl_Pointset_Powerset_Uint64_Box_iterator_t it)
- int [ppl_Pointset_Powerset_Uint64_Box_drop_disjuncts](#) (ppl_Pointset_Powerset_Uint64_Box_t ps, ppl_const_Pointset_Powerset_Uint64_Box_iterator_t first, ppl_const_Pointset_Powerset_Uint64_Box_iterator_t last)

10.149.1 Detailed Description

Types and functions for [ppl_Pointset_Powerset_Uint64_Box_tag](#).

10.149.2 Friends And Related Function Documentation

10.149.2.1 int ppl_delete_Pointset_Powerset_Uint64_Box (ppl_const_Pointset_Powerset_Uint64_Box_t ph) [related]

- 10.149.2.2 `int ppl_new_Pointset_Powerset_Uint64_Box_from_Congruence_System`
 (`ppl_Pointset_Powerset_Uint64_Box_t * pph`, `ppl_const_Congruence_System_t cs`)
 [related]
- 10.149.2.3 `int ppl_new_Pointset_Powerset_Uint64_Box_from_Constraint_System`
 (`ppl_Pointset_Powerset_Uint64_Box_t * pph`, `ppl_const_Constraint_System_t cs`)
 [related]
- 10.149.2.4 `int ppl_new_Pointset_Powerset_Uint64_Box_from_Pointset_-`
`Powerset_Uint64_Box` (`ppl_Pointset_Powerset_Uint64_Box_t * pph`,
`ppl_const_Pointset_Powerset_Uint64_Box_t ph`) [related]
- 10.149.2.5 `int ppl_new_Pointset_Powerset_Uint64_Box_from_Pointset_Powerset_-`
`Uint64_Box_with_complexity` (`ppl_Pointset_Powerset_Uint64_Box_t * pph`,
`ppl_const_Pointset_Powerset_Uint64_Box_t ph`, `int complexity`) [related]
- 10.149.2.6 `int ppl_new_Pointset_Powerset_Uint64_Box_from_space_dimension`
 (`ppl_Pointset_Powerset_Uint64_Box_t * pph`, `ppl_dimension_type d`, `int empty`)
 [related]
- 10.149.2.7 `int ppl_new_Pointset_Powerset_Uint64_Box_from_Uint64_Box`
 (`ppl_Pointset_Powerset_Uint64_Box_t * pph`, `ppl_const_Uint64_Box_t ph`)
 [related]
- 10.149.2.8 `int ppl_new_Pointset_Powerset_Uint64_Box_from_Uint64_Box_with_complexity`
 (`ppl_Pointset_Powerset_Uint64_Box_t * pph`, `ppl_const_Uint64_Box_t ph`, `int`
`complexity`) [related]
- 10.149.2.9 `int ppl_Pointset_Powerset_Uint64_Box_add_congruence` (`ppl_-`
`Pointset_Powerset_Uint64_Box_t ph`, `ppl_const_Congruence_t c`)
 [related]

- 10.149.2.10** `int ppl_Pointset_Powerset_Uint64_Box_add_congruences (ppl_Pointset_Powerset_Uint64_Box_t ph, ppl_const_Congruence_System_t cs)`
[related]
- 10.149.2.11** `int ppl_Pointset_Powerset_Uint64_Box_add_constraint (ppl_Pointset_Powerset_Uint64_Box_t ph, ppl_const_Constraint_t c)`
[related]
- 10.149.2.12** `int ppl_Pointset_Powerset_Uint64_Box_add_constraints (ppl_Pointset_Powerset_Uint64_Box_t ph, ppl_const_Constraint_System_t cs)`
[related]
- 10.149.2.13** `int ppl_Pointset_Powerset_Uint64_Box_add_disjunct (ppl_Pointset_Powerset_Uint64_Box_t ps, ppl_const_Uint64_Box_t d)`
[related]
- 10.149.2.14** `int ppl_Pointset_Powerset_Uint64_Box_add_space_dimensions_and_embed (ppl_Pointset_Powerset_Uint64_Box_t ph, ppl_dimension_type d)` [related]
- 10.149.2.15** `int ppl_Pointset_Powerset_Uint64_Box_add_space_dimensions_and_project (ppl_Pointset_Powerset_Uint64_Box_t ph, ppl_dimension_type d)` [related]
- 10.149.2.16** `int ppl_Pointset_Powerset_Uint64_Box_affine_dimension (ppl_const_Pointset_Powerset_Uint64_Box_t ph, ppl_dimension_type * m)`
[related]
- 10.149.2.17** `int ppl_Pointset_Powerset_Uint64_Box_affine_image (ppl_Pointset_Powerset_Uint64_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [related]

- 10.149.2.18 `int ppl_Pointset_Powerset_Uint64_Box_affine_preimage (ppl_Pointset_Powerset_Uint64_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.149.2.19 `int ppl_Pointset_Powerset_Uint64_Box_bounded_affine_image (ppl_Pointset_Powerset_Uint64_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [`related`]
- 10.149.2.20 `int ppl_Pointset_Powerset_Uint64_Box_bounded_affine_preimage (ppl_Pointset_Powerset_Uint64_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [`related`]
- 10.149.2.21 `int ppl_Pointset_Powerset_Uint64_Box_bounds_from_above (ppl_const_Pointset_Powerset_Uint64_Box_t ph, ppl_const_Linear_Expression_t le)` [`related`]
- 10.149.2.22 `int ppl_Pointset_Powerset_Uint64_Box_bounds_from_below (ppl_const_Pointset_Powerset_Uint64_Box_t ph, ppl_const_Linear_Expression_t le)` [`related`]
- 10.149.2.23 `int ppl_Pointset_Powerset_Uint64_Box_concatenate_assign (ppl_Pointset_Powerset_Uint64_Box_t x, ppl_const_Pointset_Powerset_Uint64_Box_t y)` [`related`]
- 10.149.2.24 `int ppl_Pointset_Powerset_Uint64_Box_constrains (ppl_Pointset_Powerset_Uint64_Box_t ph, ppl_dimension_type var)` [`related`]
- 10.149.2.25 `int ppl_Pointset_Powerset_Uint64_Box_contains_integer_point (ppl_const_Pointset_Powerset_Uint64_Box_t ph)` [`related`]

- 10.149.2.26** `int ppl_Pointset_Powerset_Uint64_Box_contains_Pointset_Powerset_Uint64_Box (ppl_const_Pointset_Powerset_Uint64_Box_t x, ppl_const_Pointset_Powerset_Uint64_Box_t y)` [related]
- 10.149.2.27** `int ppl_Pointset_Powerset_Uint64_Box_difference_assign (ppl_Pointset_Powerset_Uint64_Box_t x, ppl_const_Pointset_Powerset_Uint64_Box_t y)` [related]
- 10.149.2.28** `int ppl_Pointset_Powerset_Uint64_Box_drop_disjunct (ppl_Pointset_Powerset_Uint64_Box_t ps, ppl_const_Pointset_Powerset_Uint64_Box_iterator_t cit, ppl_Pointset_Powerset_Uint64_Box_iterator_t it)` [related]
- 10.149.2.29** `int ppl_Pointset_Powerset_Uint64_Box_drop_disjuncts (ppl_Pointset_Powerset_Uint64_Box_t ps, ppl_const_Pointset_Powerset_Uint64_Box_iterator_t first, ppl_const_Pointset_Powerset_Uint64_Box_iterator_t last)` [related]
- 10.149.2.30** `int ppl_Pointset_Powerset_Uint64_Box_drop_some_non_integer_points (ppl_Pointset_Powerset_Uint64_Box_t ph, int complexity)` [related]
- 10.149.2.31** `int ppl_Pointset_Powerset_Uint64_Box_drop_some_non_integer_points_2 (ppl_Pointset_Powerset_Uint64_Box_t ph, ppl_dimension_type ds[], size_t n, int complexity)` [related]
- 10.149.2.32** `int ppl_Pointset_Powerset_Uint64_Box_equals_Pointset_Powerset_Uint64_Box (ppl_const_Pointset_Powerset_Uint64_Box_t x, ppl_const_Pointset_Powerset_Uint64_Box_t y)` [related]
- 10.149.2.33** `int ppl_Pointset_Powerset_Uint64_Box_expand_space_dimension (ppl_Pointset_Powerset_Uint64_Box_t ph, ppl_dimension_type d, ppl_dimension_type m)` [related]

- 10.149.2.34** `int ppl_Pointset_Powerset_Uint64_Box_external_memory_in_bytes`
 (`ppl_const_Pointset_Powerset_Uint64_Box_t ps`, `size_t * sz`) [**related**]
- 10.149.2.35** `int ppl_Pointset_Powerset_Uint64_Box_fold_space_dimensions`
 (`ppl_Pointset_Powerset_Uint64_Box_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`,
`ppl_dimension_type d`) [**related**]
- 10.149.2.36** `int ppl_Pointset_Powerset_Uint64_Box_generalized_affine_image`
 (`ppl_Pointset_Powerset_Uint64_Box_t ph`, `ppl_dimension_type var`, `enum`
`ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [**related**]
- 10.149.2.37** `int ppl_Pointset_Powerset_Uint64_Box_generalized_affine_image_lhs_rhs`
 (`ppl_Pointset_Powerset_Uint64_Box_t ph`, `ppl_const_Linear_Expression_t lhs`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
 [**related**]
- 10.149.2.38** `int ppl_Pointset_Powerset_Uint64_Box_generalized_affine_preimage`
 (`ppl_Pointset_Powerset_Uint64_Box_t ph`, `ppl_dimension_type var`, `enum`
`ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [**related**]
- 10.149.2.39** `int ppl_Pointset_Powerset_Uint64_Box_generalized_affine_preimage_lhs_rhs`
 (`ppl_Pointset_Powerset_Uint64_Box_t ph`, `ppl_const_Linear_Expression_t lhs`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
 [**related**]
- 10.149.2.40** `int ppl_Pointset_Powerset_Uint64_Box_geometrically_covers_Pointset_-`
`Powerset_Uint64_Box` (`ppl_const_Pointset_Powerset_Uint64_Box_t x`,
`ppl_const_Pointset_Powerset_Uint64_Box_t y`) [**related**]

- 10.149.2.41** `int ppl_Pointset_Powerset_Uint64_Box_geometrically_equals_Pointset_Powerset_Uint64_Box (ppl_const_Pointset_Powerset_Uint64_Box_t x, ppl_const_Pointset_Powerset_Uint64_Box_t y)` [`related`]
- 10.149.2.42** `int ppl_Pointset_Powerset_Uint64_Box_intersection_assign (ppl_Pointset_Powerset_Uint64_Box_t x, ppl_const_Pointset_Powerset_Uint64_Box_t y)` [`related`]
- 10.149.2.43** `int ppl_Pointset_Powerset_Uint64_Box_is_bounded (ppl_const_Pointset_Powerset_Uint64_Box_t ph)` [`related`]
- 10.149.2.44** `int ppl_Pointset_Powerset_Uint64_Box_is_discrete (ppl_const_Pointset_Powerset_Uint64_Box_t ph)` [`related`]
- 10.149.2.45** `int ppl_Pointset_Powerset_Uint64_Box_is_disjoint_from_Pointset_Powerset_Uint64_Box (ppl_const_Pointset_Powerset_Uint64_Box_t x, ppl_const_Pointset_Powerset_Uint64_Box_t y)` [`related`]
- 10.149.2.46** `int ppl_Pointset_Powerset_Uint64_Box_is_empty (ppl_const_Pointset_Powerset_Uint64_Box_t ph)` [`related`]
- 10.149.2.47** `int ppl_Pointset_Powerset_Uint64_Box_is_topologically_closed (ppl_const_Pointset_Powerset_Uint64_Box_t ph)` [`related`]
- 10.149.2.48** `int ppl_Pointset_Powerset_Uint64_Box_is_universe (ppl_const_Pointset_Powerset_Uint64_Box_t ph)` [`related`]
- 10.149.2.49** `int ppl_Pointset_Powerset_Uint64_Box_map_space_dimensions (ppl_Pointset_Powerset_Uint64_Box_t ph, ppl_dimension_type maps[], size_t n)` [`related`]

- 10.149.2.50** `int ppl_Pointset_Powerset_Uint64_Box_maximize (ppl_const_Pointset_Powerset_Uint64_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)` [**related**]
- 10.149.2.51** `int ppl_Pointset_Powerset_Uint64_Box_maximize_with_point (ppl_const_Pointset_Powerset_Uint64_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` [**related**]
- 10.149.2.52** `int ppl_Pointset_Powerset_Uint64_Box_minimize (ppl_const_Pointset_Powerset_Uint64_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)` [**related**]
- 10.149.2.53** `int ppl_Pointset_Powerset_Uint64_Box_minimize_with_point (ppl_const_Pointset_Powerset_Uint64_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` [**related**]
- 10.149.2.54** `int ppl_Pointset_Powerset_Uint64_Box_OK (ppl_const_Pointset_Powerset_Uint64_Box_t ph)` [**related**]
- 10.149.2.55** `int ppl_Pointset_Powerset_Uint64_Box_omega_reduce (ppl_Pointset_Powerset_Uint64_Box_t ph)` [**related**]
- 10.149.2.56** `int ppl_Pointset_Powerset_Uint64_Box_pairwise_reduce (ppl_Pointset_Powerset_Uint64_Box_t ph)` [**related**]
- 10.149.2.57** `int ppl_Pointset_Powerset_Uint64_Box_refine_with_congruence (ppl_Pointset_Powerset_Uint64_Box_t ph, ppl_const_Congruence_t c)` [**related**]

- 10.149.2.58** int ppl_Pointset_Powerset_Uint64_Box_refine_with_congruences
(ppl_Pointset_Powerset_Uint64_Box_t *ph*, ppl_const_Congruence_System_t *cs*)
[related]
- 10.149.2.59** int ppl_Pointset_Powerset_Uint64_Box_refine_with_constraint
(ppl_Pointset_Powerset_Uint64_Box_t *ph*, ppl_const_Constraint_t *c*) [related]
- 10.149.2.60** int ppl_Pointset_Powerset_Uint64_Box_refine_with_constraints
(ppl_Pointset_Powerset_Uint64_Box_t *ph*, ppl_const_Constraint_System_t *cs*)
[related]
- 10.149.2.61** int ppl_Pointset_Powerset_Uint64_Box_relation_with_Congruence
(ppl_const_Pointset_Powerset_Uint64_Box_t *ph*, ppl_const_Congruence_t *c*)
[related]
- 10.149.2.62** int ppl_Pointset_Powerset_Uint64_Box_relation_with_Constraint
(ppl_const_Pointset_Powerset_Uint64_Box_t *ph*, ppl_const_Constraint_t *c*)
[related]
- 10.149.2.63** int ppl_Pointset_Powerset_Uint64_Box_relation_with_Generator
(ppl_const_Pointset_Powerset_Uint64_Box_t *ph*, ppl_const_Generator_t *c*)
[related]
- 10.149.2.64** int ppl_Pointset_Powerset_Uint64_Box_remove_higher_space_dimensions
(ppl_Pointset_Powerset_Uint64_Box_t *ph*, ppl_dimension_type *d*) [related]
- 10.149.2.65** int ppl_Pointset_Powerset_Uint64_Box_remove_space_dimensions
(ppl_Pointset_Powerset_Uint64_Box_t *ph*, ppl_dimension_type *ds*[], size_t *n*)
[related]

- 10.149.2.66 `int ppl_Pointset_Powerset_Uint64_Box_simplify_using_context_assign`
 (`ppl_Pointset_Powerset_Uint64_Box_t x`, `ppl_const_Pointset_Powerset_Uint64_Box_t y`) [`related`]
- 10.149.2.67 `int ppl_Pointset_Powerset_Uint64_Box_size` (`ppl_const_Pointset_Powerset_Uint64_Box_t ps`, `size_t * sz`) [`related`]
- 10.149.2.68 `int ppl_Pointset_Powerset_Uint64_Box_space_dimension` (`ppl_const_Pointset_Powerset_Uint64_Box_t ph`, `ppl_dimension_type * m`) [`related`]
- 10.149.2.69 `int ppl_Pointset_Powerset_Uint64_Box_strictly_contains_Pointset_Powerset_Uint64_Box` (`ppl_const_Pointset_Powerset_Uint64_Box_t x`, `ppl_const_Pointset_Powerset_Uint64_Box_t y`) [`related`]
- 10.149.2.70 `int ppl_Pointset_Powerset_Uint64_Box_time_elapse_assign` (`ppl_Pointset_Powerset_Uint64_Box_t x`, `ppl_const_Pointset_Powerset_Uint64_Box_t y`) [`related`]
- 10.149.2.71 `int ppl_Pointset_Powerset_Uint64_Box_topological_closure_assign`
 (`ppl_Pointset_Powerset_Uint64_Box_t ph`) [`related`]
- 10.149.2.72 `int ppl_Pointset_Powerset_Uint64_Box_total_memory_in_bytes`
 (`ppl_const_Pointset_Powerset_Uint64_Box_t ps`, `size_t * sz`) [`related`]
- 10.149.2.73 `int ppl_Pointset_Powerset_Uint64_Box_unconstrain_space_dimension`
 (`ppl_Pointset_Powerset_Uint64_Box_t ph`, `ppl_dimension_type var`) [`related`]

- 10.149.2.74** `int ppl_Pointset_Powerset_Uint64_Box_unconstrain_space_dimensions`
 (`ppl_Pointset_Powerset_Uint64_Box_t` *ph*, `ppl_dimension_type` *ds*[], `size_t` *n*)
 [**related**]
- 10.149.2.75** `int ppl_Pointset_Powerset_Uint64_Box_upper_bound_assign`
 (`ppl_Pointset_Powerset_Uint64_Box_t` *x*, `ppl_const_Pointset_Powerset_Uint64_Box_t` *y*) [**related**]
- 10.149.2.76** `int ppl_Pointset_Powerset_Uint64_Box_upper_bound_assign_if_exact`
 (`ppl_Pointset_Powerset_Uint64_Box_t` *x*, `ppl_const_Pointset_Powerset_Uint64_Box_t` *y*) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.150 `ppl_Pointset_Powerset_Uint8_Box_const_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Uint8_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_Uint8_Box_const_iterator` (`ppl_Pointset_Powerset_Uint8_Box_const_iterator_t` **pit*)
- `int ppl_new_Pointset_Powerset_Uint8_Box_const_iterator_from_const_iterator` (`ppl_Pointset_Powerset_Uint8_Box_const_iterator_t` **px*, `ppl_const_Pointset_Powerset_Uint8_Box_const_iterator_t` *y*)
- `int ppl_Pointset_Powerset_Uint8_Box_const_iterator_begin` (`ppl_const_Pointset_Powerset_Uint8_Box_t` *ps*, `ppl_Pointset_Powerset_Uint8_Box_const_iterator_t` *psit*)
- `int ppl_Pointset_Powerset_Uint8_Box_const_iterator_end` (`ppl_const_Pointset_Powerset_Uint8_Box_t` *ps*, `ppl_Pointset_Powerset_Uint8_Box_const_iterator_t` *psit*)
- `int ppl_Pointset_Powerset_Uint8_Box_const_iterator_equal_test` (`ppl_const_Pointset_Powerset_Uint8_Box_const_iterator_t` *x*, `ppl_const_Pointset_Powerset_Uint8_Box_const_iterator_t` *y*)
- `int ppl_Pointset_Powerset_Uint8_Box_const_iterator_increment` (`ppl_Pointset_Powerset_Uint8_Box_const_iterator_t` *psit*)
- `int ppl_Pointset_Powerset_Uint8_Box_const_iterator_decrement` (`ppl_Pointset_Powerset_Uint8_Box_const_iterator_t` *psit*)
- `int ppl_Pointset_Powerset_Uint8_Box_const_iterator_dereference` (`ppl_const_Pointset_Powerset_Uint8_Box_const_iterator_t` *ps*, `ppl_const_Uint8_Box_t` **d*)
- `int ppl_delete_Pointset_Powerset_Uint8_Box_const_iterator` (`ppl_const_Pointset_Powerset_Uint8_Box_const_iterator_t` *psit*)

10.150.1 Detailed Description

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Uint8_Box_tag](#).

10.150.2 Friends And Related Function Documentation

- 10.150.2.1** `int ppl_delete_Pointset_Powerset_Uint8_Box_const_iterator`
`(ppl_const_Pointset_Powerset_Uint8_Box_const_iterator_t psit)` [**related**]
- 10.150.2.2** `int ppl_new_Pointset_Powerset_Uint8_Box_const_iterator`
`(ppl_Pointset_Powerset_Uint8_Box_const_iterator_t * pit)` [**related**]
- 10.150.2.3** `int ppl_new_Pointset_Powerset_Uint8_Box_const_iterator_from_const_`
`iterator (ppl_Pointset_Powerset_Uint8_Box_const_iterator_t * px,`
`ppl_const_Pointset_Powerset_Uint8_Box_const_iterator_t y)` [**related**]
- 10.150.2.4** `int ppl_Pointset_Powerset_Uint8_Box_const_iterator_begin` `(ppl_const_Pointset_`
`Powerset_Uint8_Box_t ps, ppl_Pointset_Powerset_Uint8_Box_const_iterator_t psit)`
[related]
- 10.150.2.5** `int ppl_Pointset_Powerset_Uint8_Box_const_iterator_decrement`
`(ppl_Pointset_Powerset_Uint8_Box_const_iterator_t psit)` [**related**]
- 10.150.2.6** `int ppl_Pointset_Powerset_Uint8_Box_const_iterator_dereference`
`(ppl_const_Pointset_Powerset_Uint8_Box_const_iterator_t ps, ppl_const_Uint8_Box_t`
`* d)` [**related**]
- 10.150.2.7** `int ppl_Pointset_Powerset_Uint8_Box_const_iterator_end` `(ppl_const_Pointset_`
`Powerset_Uint8_Box_t ps, ppl_Pointset_Powerset_Uint8_Box_const_iterator_t psit)`
[related]

10.150.2.8 `int ppl_Pointset_Powerset_Uint8_Box_const_iterator_equal_test`
 (`ppl_const_Pointset_Powerset_Uint8_Box_const_iterator_t x`,
`ppl_const_Pointset_Powerset_Uint8_Box_const_iterator_t y`) [**related**]

10.150.2.9 `int ppl_Pointset_Powerset_Uint8_Box_const_iterator_increment`
 (`ppl_Pointset_Powerset_Uint8_Box_const_iterator_t psit`) [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.151 `ppl_Pointset_Powerset_Uint8_Box_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Uint8_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_Uint8_Box_iterator` (`ppl_Pointset_Powerset_Uint8_Box_iterator_t *pit`)
- `int ppl_new_Pointset_Powerset_Uint8_Box_iterator_from_iterator` (`ppl_Pointset_Powerset_Uint8_Box_iterator_t *px`, `ppl_const_Pointset_Powerset_Uint8_Box_iterator_t y`)
- `int ppl_Pointset_Powerset_Uint8_Box_iterator_begin` (`ppl_Pointset_Powerset_Uint8_Box_t ps`, `ppl_Pointset_Powerset_Uint8_Box_iterator_t psit`)
- `int ppl_Pointset_Powerset_Uint8_Box_iterator_end` (`ppl_Pointset_Powerset_Uint8_Box_t ps`, `ppl_Pointset_Powerset_Uint8_Box_iterator_t psit`)
- `int ppl_Pointset_Powerset_Uint8_Box_iterator_equal_test` (`ppl_const_Pointset_Powerset_Uint8_Box_iterator_t x`, `ppl_const_Pointset_Powerset_Uint8_Box_iterator_t y`)
- `int ppl_Pointset_Powerset_Uint8_Box_iterator_increment` (`ppl_Pointset_Powerset_Uint8_Box_iterator_t psit`)
- `int ppl_Pointset_Powerset_Uint8_Box_iterator_decrement` (`ppl_Pointset_Powerset_Uint8_Box_iterator_t psit`)
- `int ppl_Pointset_Powerset_Uint8_Box_iterator_dereference` (`ppl_const_Pointset_Powerset_Uint8_Box_iterator_t ps`, `ppl_const_Uint8_Box_t *d`)
- `int ppl_delete_Pointset_Powerset_Uint8_Box_iterator` (`ppl_const_Pointset_Powerset_Uint8_Box_iterator_t psit`)

10.151.1 Detailed Description

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Uint8_Box_tag](#).

10.151.2 Friends And Related Function Documentation

- 10.151.2.1** `int ppl_delete_Pointset_Powerset_UInt8_Box_iterator (ppl_const_Pointset_Powerset_UInt8_Box_iterator_t psit)` [**related**]
- 10.151.2.2** `int ppl_new_Pointset_Powerset_UInt8_Box_iterator (ppl_Pointset_Powerset_UInt8_Box_iterator_t * pit)` [**related**]
- 10.151.2.3** `int ppl_new_Pointset_Powerset_UInt8_Box_iterator_from_iterator (ppl_Pointset_Powerset_UInt8_Box_iterator_t * px, ppl_const_Pointset_Powerset_UInt8_Box_iterator_t y)` [**related**]
- 10.151.2.4** `int ppl_Pointset_Powerset_UInt8_Box_iterator_begin (ppl_Pointset_Powerset_UInt8_Box_t ps, ppl_Pointset_Powerset_UInt8_Box_iterator_t psit)` [**related**]
- 10.151.2.5** `int ppl_Pointset_Powerset_UInt8_Box_iterator_decrement (ppl_Pointset_Powerset_UInt8_Box_iterator_t psit)` [**related**]
- 10.151.2.6** `int ppl_Pointset_Powerset_UInt8_Box_iterator_dereference (ppl_const_Pointset_Powerset_UInt8_Box_iterator_t ps, ppl_const_UInt8_Box_t * d)` [**related**]
- 10.151.2.7** `int ppl_Pointset_Powerset_UInt8_Box_iterator_end (ppl_Pointset_Powerset_UInt8_Box_t ps, ppl_Pointset_Powerset_UInt8_Box_iterator_t psit)` [**related**]
- 10.151.2.8** `int ppl_Pointset_Powerset_UInt8_Box_iterator_equal_test (ppl_const_Pointset_Powerset_UInt8_Box_iterator_t x, ppl_const_Pointset_Powerset_UInt8_Box_iterator_t y)` [**related**]

10.151.2.9 int ppl_Pointset_Powerset_Uint8_Box_iterator_increment (ppl_Pointset_Powerset_Uint8_Box_iterator_t *psit*) [related]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.152 ppl_Pointset_Powerset_Uint8_Box_tag Interface Reference

Types and functions for [ppl_Pointset_Powerset_Uint8_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- int [ppl_delete_Pointset_Powerset_Uint8_Box](#) (ppl_const_Pointset_Powerset_Uint8_Box_t ph)
- int [ppl_new_Pointset_Powerset_Uint8_Box_from_space_dimension](#) (ppl_Pointset_Powerset_Uint8_Box_t *pph, ppl_dimension_type d, int empty)
- int [ppl_new_Pointset_Powerset_Uint8_Box_from_Pointset_Powerset_Uint8_Box](#) (ppl_Pointset_Powerset_Uint8_Box_t *pph, ppl_const_Pointset_Powerset_Uint8_Box_t ph)
- int [ppl_new_Pointset_Powerset_Uint8_Box_from_Uint8_Box](#) (ppl_Pointset_Powerset_Uint8_Box_t *pph, ppl_const_Uint8_Box_t ph)
- int [ppl_new_Pointset_Powerset_Uint8_Box_from_Pointset_Powerset_Uint8_Box_with_complexity](#) (ppl_Pointset_Powerset_Uint8_Box_t *pph, ppl_const_Pointset_Powerset_Uint8_Box_t ph, int complexity)
- int [ppl_new_Pointset_Powerset_Uint8_Box_from_Uint8_Box_with_complexity](#) (ppl_Pointset_Powerset_Uint8_Box_t *pph, ppl_const_Uint8_Box_t ph, int complexity)
- int [ppl_new_Pointset_Powerset_Uint8_Box_from_Constraint_System](#) (ppl_Pointset_Powerset_Uint8_Box_t *pph, ppl_const_Constraint_System_t cs)
- int [ppl_new_Pointset_Powerset_Uint8_Box_from_Congruence_System](#) (ppl_Pointset_Powerset_Uint8_Box_t *pph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_Uint8_Box_space_dimension](#) (ppl_const_Pointset_Powerset_Uint8_Box_t ph, ppl_dimension_type *m)
- int [ppl_Pointset_Powerset_Uint8_Box_affine_dimension](#) (ppl_const_Pointset_Powerset_Uint8_Box_t ph, ppl_dimension_type *m)
- int [ppl_Pointset_Powerset_Uint8_Box_relation_with_Constraint](#) (ppl_const_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Uint8_Box_relation_with_Generator](#) (ppl_const_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Generator_t c)
- int [ppl_Pointset_Powerset_Uint8_Box_relation_with_Congruence](#) (ppl_const_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Uint8_Box_is_empty](#) (ppl_const_Pointset_Powerset_Uint8_Box_t ph)
- int [ppl_Pointset_Powerset_Uint8_Box_is_universe](#) (ppl_const_Pointset_Powerset_Uint8_Box_t ph)
- int [ppl_Pointset_Powerset_Uint8_Box_is_bounded](#) (ppl_const_Pointset_Powerset_Uint8_Box_t ph)
- int [ppl_Pointset_Powerset_Uint8_Box_contains_integer_point](#) (ppl_const_Pointset_Powerset_Uint8_Box_t ph)

- [int ppl_Pointset_Powerset_Uint8_Box_is_topologically_closed](#) (ppl_const_Pointset_Powerset_Uint8_Box_t ph)
- [int ppl_Pointset_Powerset_Uint8_Box_is_discrete](#) (ppl_const_Pointset_Powerset_Uint8_Box_t ph)
- [int ppl_Pointset_Powerset_Uint8_Box_topological_closure_assign](#) (ppl_Pointset_Powerset_Uint8_Box_t ph)
- [int ppl_Pointset_Powerset_Uint8_Box_pairwise_reduce](#) (ppl_Pointset_Powerset_Uint8_Box_t ph)
- [int ppl_Pointset_Powerset_Uint8_Box_omega_reduce](#) (ppl_Pointset_Powerset_Uint8_Box_t ph)
- [int ppl_Pointset_Powerset_Uint8_Box_bounds_from_above](#) (ppl_const_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Linear_Expression_t le)
- [int ppl_Pointset_Powerset_Uint8_Box_bounds_from_below](#) (ppl_const_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Linear_Expression_t le)
- [int ppl_Pointset_Powerset_Uint8_Box_maximize](#) (ppl_const_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- [int ppl_Pointset_Powerset_Uint8_Box_minimize](#) (ppl_const_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- [int ppl_Pointset_Powerset_Uint8_Box_maximize_with_point](#) (ppl_const_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- [int ppl_Pointset_Powerset_Uint8_Box_minimize_with_point](#) (ppl_const_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- [int ppl_Pointset_Powerset_Uint8_Box_contains_Pointset_Powerset_Uint8_Box](#) (ppl_const_Pointset_Powerset_Uint8_Box_t x, ppl_const_Pointset_Powerset_Uint8_Box_t y)
- [int ppl_Pointset_Powerset_Uint8_Box_strictly_contains_Pointset_Powerset_Uint8_Box](#) (ppl_const_Pointset_Powerset_Uint8_Box_t x, ppl_const_Pointset_Powerset_Uint8_Box_t y)
- [int ppl_Pointset_Powerset_Uint8_Box_is_disjoint_from_Pointset_Powerset_Uint8_Box](#) (ppl_const_Pointset_Powerset_Uint8_Box_t x, ppl_const_Pointset_Powerset_Uint8_Box_t y)
- [int ppl_Pointset_Powerset_Uint8_Box_geometrically_covers_Pointset_Powerset_Uint8_Box](#) (ppl_const_Pointset_Powerset_Uint8_Box_t x, ppl_const_Pointset_Powerset_Uint8_Box_t y)
- [int ppl_Pointset_Powerset_Uint8_Box_geometrically_equals_Pointset_Powerset_Uint8_Box](#) (ppl_const_Pointset_Powerset_Uint8_Box_t x, ppl_const_Pointset_Powerset_Uint8_Box_t y)
- [int ppl_Pointset_Powerset_Uint8_Box_equals_Pointset_Powerset_Uint8_Box](#) (ppl_const_Pointset_Powerset_Uint8_Box_t x, ppl_const_Pointset_Powerset_Uint8_Box_t y)
- [int ppl_Pointset_Powerset_Uint8_Box_OK](#) (ppl_const_Pointset_Powerset_Uint8_Box_t ph)
- [int ppl_Pointset_Powerset_Uint8_Box_add_constraint](#) (ppl_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Constraint_t c)
- [int ppl_Pointset_Powerset_Uint8_Box_add_congruence](#) (ppl_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Congruence_t c)
- [int ppl_Pointset_Powerset_Uint8_Box_add_constraints](#) (ppl_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Constraint_System_t cs)
- [int ppl_Pointset_Powerset_Uint8_Box_add_congruences](#) (ppl_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Congruence_System_t cs)
- [int ppl_Pointset_Powerset_Uint8_Box_refine_with_constraint](#) (ppl_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Constraint_t c)
- [int ppl_Pointset_Powerset_Uint8_Box_refine_with_congruence](#) (ppl_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Congruence_t c)
- [int ppl_Pointset_Powerset_Uint8_Box_refine_with_constraints](#) (ppl_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Constraint_System_t cs)
- [int ppl_Pointset_Powerset_Uint8_Box_refine_with_congruences](#) (ppl_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Congruence_System_t cs)
- [int ppl_Pointset_Powerset_Uint8_Box_intersection_assign](#) (ppl_Pointset_Powerset_Uint8_Box_t x, ppl_const_Pointset_Powerset_Uint8_Box_t y)

- int [ppl_Pointset_Powerset_Uint8_Box_upper_bound_assign](#) (ppl_Pointset_Powerset_Uint8_Box_t x, ppl_const_Pointset_Powerset_Uint8_Box_t y)
- int [ppl_Pointset_Powerset_Uint8_Box_difference_assign](#) (ppl_Pointset_Powerset_Uint8_Box_t x, ppl_const_Pointset_Powerset_Uint8_Box_t y)
- int [ppl_Pointset_Powerset_Uint8_Box_concatenate_assign](#) (ppl_Pointset_Powerset_Uint8_Box_t x, ppl_const_Pointset_Powerset_Uint8_Box_t y)
- int [ppl_Pointset_Powerset_Uint8_Box_time_elapse_assign](#) (ppl_Pointset_Powerset_Uint8_Box_t x, ppl_const_Pointset_Powerset_Uint8_Box_t y)
- int [ppl_Pointset_Powerset_Uint8_Box_upper_bound_assign_if_exact](#) (ppl_Pointset_Powerset_Uint8_Box_t x, ppl_const_Pointset_Powerset_Uint8_Box_t y)
- int [ppl_Pointset_Powerset_Uint8_Box_simplify_using_context_assign](#) (ppl_Pointset_Powerset_Uint8_Box_t x, ppl_const_Pointset_Powerset_Uint8_Box_t y)
- int [ppl_Pointset_Powerset_Uint8_Box_constrains](#) (ppl_Pointset_Powerset_Uint8_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_Uint8_Box_unconstrain_space_dimension](#) (ppl_Pointset_Powerset_Uint8_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_Uint8_Box_unconstrain_space_dimensions](#) (ppl_Pointset_Powerset_Uint8_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_Uint8_Box_affine_image](#) (ppl_Pointset_Powerset_Uint8_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Uint8_Box_affine_preimage](#) (ppl_Pointset_Powerset_Uint8_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Uint8_Box_bounded_affine_image](#) (ppl_Pointset_Powerset_Uint8_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Uint8_Box_bounded_affine_preimage](#) (ppl_Pointset_Powerset_Uint8_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Uint8_Box_generalized_affine_image](#) (ppl_Pointset_Powerset_Uint8_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Uint8_Box_generalized_affine_preimage](#) (ppl_Pointset_Powerset_Uint8_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Uint8_Box_generalized_affine_image_lhs_rhs](#) (ppl_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_Uint8_Box_generalized_affine_preimage_lhs_rhs](#) (ppl_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_Uint8_Box_add_space_dimensions_and_embed](#) (ppl_Pointset_Powerset_Uint8_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Uint8_Box_add_space_dimensions_and_project](#) (ppl_Pointset_Powerset_Uint8_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Uint8_Box_remove_space_dimensions](#) (ppl_Pointset_Powerset_Uint8_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_Uint8_Box_remove_higher_space_dimensions](#) (ppl_Pointset_Powerset_Uint8_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Uint8_Box_expand_space_dimension](#) (ppl_Pointset_Powerset_Uint8_Box_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Pointset_Powerset_Uint8_Box_fold_space_dimensions](#) (ppl_Pointset_Powerset_Uint8_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)

- int [ppl_Pointset_Powerset_Uint8_Box_map_space_dimensions](#) (ppl_Pointset_Powerset_Uint8_Box_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_Pointset_Powerset_Uint8_Box_drop_some_non_integer_points](#) (ppl_Pointset_Powerset_Uint8_Box_t ph, int complexity)
- int [ppl_Pointset_Powerset_Uint8_Box_drop_some_non_integer_points_2](#) (ppl_Pointset_Powerset_Uint8_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_Pointset_Powerset_Uint8_Box_external_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Uint8_Box_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Uint8_Box_total_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Uint8_Box_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Uint8_Box_size](#) (ppl_const_Pointset_Powerset_Uint8_Box_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Uint8_Box_add_disjunct](#) (ppl_Pointset_Powerset_Uint8_Box_t ps, ppl_const_Uint8_Box_t d)
- int [ppl_Pointset_Powerset_Uint8_Box_drop_disjunct](#) (ppl_Pointset_Powerset_Uint8_Box_t ps, ppl_const_Pointset_Powerset_Uint8_Box_iterator_t cit, ppl_Pointset_Powerset_Uint8_Box_iterator_t it)
- int [ppl_Pointset_Powerset_Uint8_Box_drop_disjuncts](#) (ppl_Pointset_Powerset_Uint8_Box_t ps, ppl_const_Pointset_Powerset_Uint8_Box_iterator_t first, ppl_const_Pointset_Powerset_Uint8_Box_iterator_t last)

10.152.1 Detailed Description

Types and functions for [ppl_Pointset_Powerset_Uint8_Box_tag](#).

10.152.2 Friends And Related Function Documentation

10.152.2.1 int [ppl_delete_Pointset_Powerset_Uint8_Box](#) (ppl_const_Pointset_Powerset_Uint8_Box_t *ph*) [[related](#)]

10.152.2.2 int [ppl_new_Pointset_Powerset_Uint8_Box_from_Congruence_System](#) (ppl_Pointset_Powerset_Uint8_Box_t * *pph*, ppl_const_Congruence_System_t *cs*) [[related](#)]

10.152.2.3 int [ppl_new_Pointset_Powerset_Uint8_Box_from_Constraint_System](#) (ppl_Pointset_Powerset_Uint8_Box_t * *pph*, ppl_const_Constraint_System_t *cs*) [[related](#)]

10.152.2.4 int [ppl_new_Pointset_Powerset_Uint8_Box_from_Pointset_Powerset_Uint8_Box](#) (ppl_Pointset_Powerset_Uint8_Box_t * *pph*, ppl_const_Pointset_Powerset_Uint8_Box_t *ph*) [[related](#)]

- 10.152.2.5** `int ppl_new_Pointset_Powerset_Uint8_Box_from_Pointset_Powerset_Uint8_Box_with_complexity (ppl_Pointset_Powerset_Uint8_Box_t * pph, ppl_const_Pointset_Powerset_Uint8_Box_t ph, int complexity)` `[related]`
- 10.152.2.6** `int ppl_new_Pointset_Powerset_Uint8_Box_from_space_dimension (ppl_Pointset_Powerset_Uint8_Box_t * pph, ppl_dimension_type d, int empty)` `[related]`
- 10.152.2.7** `int ppl_new_Pointset_Powerset_Uint8_Box_from_Uint8_Box (ppl_Pointset_Powerset_Uint8_Box_t * pph, ppl_const_Uint8_Box_t ph)` `[related]`
- 10.152.2.8** `int ppl_new_Pointset_Powerset_Uint8_Box_from_Uint8_Box_with_complexity (ppl_Pointset_Powerset_Uint8_Box_t * pph, ppl_const_Uint8_Box_t ph, int complexity)` `[related]`
- 10.152.2.9** `int ppl_Pointset_Powerset_Uint8_Box_add_congruence (ppl_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Congruence_t c)` `[related]`
- 10.152.2.10** `int ppl_Pointset_Powerset_Uint8_Box_add_congruences (ppl_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Congruence_System_t cs)` `[related]`
- 10.152.2.11** `int ppl_Pointset_Powerset_Uint8_Box_add_constraint (ppl_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Constraint_t c)` `[related]`
- 10.152.2.12** `int ppl_Pointset_Powerset_Uint8_Box_add_constraints (ppl_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Constraint_System_t cs)` `[related]`

- 10.152.2.13** `int ppl_Pointset_Powerset_Uint8_Box_add_disjunct (ppl_Pointset_Powerset_Uint8_Box_t ps, ppl_const_Uint8_Box_t d)` [**related**]
- 10.152.2.14** `int ppl_Pointset_Powerset_Uint8_Box_add_space_dimensions_and_embed (ppl_Pointset_Powerset_Uint8_Box_t ph, ppl_dimension_type d)` [**related**]
- 10.152.2.15** `int ppl_Pointset_Powerset_Uint8_Box_add_space_dimensions_and_project (ppl_Pointset_Powerset_Uint8_Box_t ph, ppl_dimension_type d)` [**related**]
- 10.152.2.16** `int ppl_Pointset_Powerset_Uint8_Box_affine_dimension (ppl_const_Pointset_Powerset_Uint8_Box_t ph, ppl_dimension_type * m)` [**related**]
- 10.152.2.17** `int ppl_Pointset_Powerset_Uint8_Box_affine_image (ppl_Pointset_Powerset_Uint8_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.152.2.18** `int ppl_Pointset_Powerset_Uint8_Box_affine_preimage (ppl_Pointset_Powerset_Uint8_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.152.2.19** `int ppl_Pointset_Powerset_Uint8_Box_bounded_affine_image (ppl_Pointset_Powerset_Uint8_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [**related**]
- 10.152.2.20** `int ppl_Pointset_Powerset_Uint8_Box_bounded_affine_preimage (ppl_Pointset_Powerset_Uint8_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [**related**]

- 10.152.2.21** `int ppl_Pointset_Powerset_Uint8_Box_bounds_from_above (ppl_const_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Linear_Expression_t le)` **[related]**
- 10.152.2.22** `int ppl_Pointset_Powerset_Uint8_Box_bounds_from_below (ppl_const_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Linear_Expression_t le)` **[related]**
- 10.152.2.23** `int ppl_Pointset_Powerset_Uint8_Box_concatenate_assign (ppl_Pointset_Powerset_Uint8_Box_t x, ppl_const_Pointset_Powerset_Uint8_Box_t y)` **[related]**
- 10.152.2.24** `int ppl_Pointset_Powerset_Uint8_Box_constrains (ppl_Pointset_Powerset_Uint8_Box_t ph, ppl_dimension_type var)` **[related]**
- 10.152.2.25** `int ppl_Pointset_Powerset_Uint8_Box_contains_integer_point (ppl_const_Pointset_Powerset_Uint8_Box_t ph)` **[related]**
- 10.152.2.26** `int ppl_Pointset_Powerset_Uint8_Box_contains_Pointset_Powerset_Uint8_Box (ppl_const_Pointset_Powerset_Uint8_Box_t x, ppl_const_Pointset_Powerset_Uint8_Box_t y)` **[related]**
- 10.152.2.27** `int ppl_Pointset_Powerset_Uint8_Box_difference_assign (ppl_Pointset_Powerset_Uint8_Box_t x, ppl_const_Pointset_Powerset_Uint8_Box_t y)` **[related]**
- 10.152.2.28** `int ppl_Pointset_Powerset_Uint8_Box_drop_disjunct (ppl_Pointset_Powerset_Uint8_Box_t ps, ppl_const_Pointset_Powerset_Uint8_Box_iterator_t cit, ppl_Pointset_Powerset_Uint8_Box_iterator_t it)` **[related]**

- 10.152.2.29** `int ppl_Pointset_Powerset_Uint8_Box_drop_disjuncts (ppl_Pointset_Powerset_Uint8_Box_t ps, ppl_const_Pointset_Powerset_Uint8_Box_iterator_t first, ppl_const_Pointset_Powerset_Uint8_Box_iterator_t last)` [**related**]
- 10.152.2.30** `int ppl_Pointset_Powerset_Uint8_Box_drop_some_non_integer_points (ppl_Pointset_Powerset_Uint8_Box_t ph, int complexity)` [**related**]
- 10.152.2.31** `int ppl_Pointset_Powerset_Uint8_Box_drop_some_non_integer_points_2 (ppl_Pointset_Powerset_Uint8_Box_t ph, ppl_dimension_type ds[], size_t n, int complexity)` [**related**]
- 10.152.2.32** `int ppl_Pointset_Powerset_Uint8_Box_equals_Pointset_Powerset_Uint8_Box (ppl_const_Pointset_Powerset_Uint8_Box_t x, ppl_const_Pointset_Powerset_Uint8_Box_t y)` [**related**]
- 10.152.2.33** `int ppl_Pointset_Powerset_Uint8_Box_expand_space_dimension (ppl_Pointset_Powerset_Uint8_Box_t ph, ppl_dimension_type d, ppl_dimension_type m)` [**related**]
- 10.152.2.34** `int ppl_Pointset_Powerset_Uint8_Box_external_memory_in_bytes (ppl_const_Pointset_Powerset_Uint8_Box_t ps, size_t * sz)` [**related**]
- 10.152.2.35** `int ppl_Pointset_Powerset_Uint8_Box_fold_space_dimensions (ppl_Pointset_Powerset_Uint8_Box_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [**related**]
- 10.152.2.36** `int ppl_Pointset_Powerset_Uint8_Box_generalized_affine_image (ppl_Pointset_Powerset_Uint8_Box_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]

- 10.152.2.37 `int ppl_Pointset_Powerset_Uint8_Box_generalized_affine_image_lhs_rhs`
(`ppl_Pointset_Powerset_Uint8_Box_t ph`, `ppl_const_Linear_Expression_t lhs`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
[related]
- 10.152.2.38 `int ppl_Pointset_Powerset_Uint8_Box_generalized_affine_preimage`
(`ppl_Pointset_Powerset_Uint8_Box_t ph`, `ppl_dimension_type var`, `enum`
`ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t le`,
`ppl_const_Coefficient_t d`) [related]
- 10.152.2.39 `int ppl_Pointset_Powerset_Uint8_Box_generalized_affine_preimage_lhs_rhs`
(`ppl_Pointset_Powerset_Uint8_Box_t ph`, `ppl_const_Linear_Expression_t lhs`,
`enum ppl_enum_Constraint_Type relsym`, `ppl_const_Linear_Expression_t rhs`)
[related]
- 10.152.2.40 `int ppl_Pointset_Powerset_Uint8_Box_geometrically_covers_Pointset_-`
`Powerset_Uint8_Box` (`ppl_const_Pointset_Powerset_Uint8_Box_t x`,
`ppl_const_Pointset_Powerset_Uint8_Box_t y`) [related]
- 10.152.2.41 `int ppl_Pointset_Powerset_Uint8_Box_geometrically_equals_Pointset_-`
`Powerset_Uint8_Box` (`ppl_const_Pointset_Powerset_Uint8_Box_t x`,
`ppl_const_Pointset_Powerset_Uint8_Box_t y`) [related]
- 10.152.2.42 `int ppl_Pointset_Powerset_Uint8_Box_intersection_assign` (`ppl_Pointset_-`
`Powerset_Uint8_Box_t x`, `ppl_const_Pointset_Powerset_Uint8_Box_t y`)
[related]
- 10.152.2.43 `int ppl_Pointset_Powerset_Uint8_Box_is_bounded` (`ppl_const_Pointset_Powerset_-`
`Uint8_Box_t ph`) [related]
- 10.152.2.44 `int ppl_Pointset_Powerset_Uint8_Box_is_discrete` (`ppl_const_Pointset_Powerset_-`
`Uint8_Box_t ph`) [related]

- 10.152.2.45** `int ppl_Pointset_Powerset_Uint8_Box_is_disjoint_from_Pointset_Powerset_Uint8_Box (ppl_const_Pointset_Powerset_Uint8_Box_t x, ppl_const_Pointset_Powerset_Uint8_Box_t y)` **[related]**
- 10.152.2.46** `int ppl_Pointset_Powerset_Uint8_Box_is_empty (ppl_const_Pointset_Powerset_Uint8_Box_t ph)` **[related]**
- 10.152.2.47** `int ppl_Pointset_Powerset_Uint8_Box_is_topologically_closed (ppl_const_Pointset_Powerset_Uint8_Box_t ph)` **[related]**
- 10.152.2.48** `int ppl_Pointset_Powerset_Uint8_Box_is_universe (ppl_const_Pointset_Powerset_Uint8_Box_t ph)` **[related]**
- 10.152.2.49** `int ppl_Pointset_Powerset_Uint8_Box_map_space_dimensions (ppl_Pointset_Powerset_Uint8_Box_t ph, ppl_dimension_type maps[], size_t n)` **[related]**
- 10.152.2.50** `int ppl_Pointset_Powerset_Uint8_Box_maximize (ppl_const_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)` **[related]**
- 10.152.2.51** `int ppl_Pointset_Powerset_Uint8_Box_maximize_with_point (ppl_const_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` **[related]**
- 10.152.2.52** `int ppl_Pointset_Powerset_Uint8_Box_minimize (ppl_const_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)` **[related]**

- 10.152.2.53** `int ppl_Pointset_Powerset_Uint8_Box_minimize_with_point (ppl_const_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` **[related]**
- 10.152.2.54** `int ppl_Pointset_Powerset_Uint8_Box_OK (ppl_const_Pointset_Powerset_Uint8_Box_t ph)` **[related]**
- 10.152.2.55** `int ppl_Pointset_Powerset_Uint8_Box_omega_reduce (ppl_Pointset_Powerset_Uint8_Box_t ph)` **[related]**
- 10.152.2.56** `int ppl_Pointset_Powerset_Uint8_Box_pairwise_reduce (ppl_Pointset_Powerset_Uint8_Box_t ph)` **[related]**
- 10.152.2.57** `int ppl_Pointset_Powerset_Uint8_Box_refine_with_congruence (ppl_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Congruence_t c)` **[related]**
- 10.152.2.58** `int ppl_Pointset_Powerset_Uint8_Box_refine_with_congruences (ppl_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Congruence_System_t cs)` **[related]**
- 10.152.2.59** `int ppl_Pointset_Powerset_Uint8_Box_refine_with_constraint (ppl_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Constraint_t c)` **[related]**
- 10.152.2.60** `int ppl_Pointset_Powerset_Uint8_Box_refine_with_constraints (ppl_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Constraint_System_t cs)` **[related]**
- 10.152.2.61** `int ppl_Pointset_Powerset_Uint8_Box_relation_with_Congruence (ppl_const_Pointset_Powerset_Uint8_Box_t ph, ppl_const_Congruence_t c)` **[related]**

- 10.152.2.62** `int ppl_Pointset_Powerset_Uint8_Box_relation_with_Constraint`
 (`ppl_const_Pointset_Powerset_Uint8_Box_t ph`, `ppl_const_Constraint_t c`)
 [`related`]
- 10.152.2.63** `int ppl_Pointset_Powerset_Uint8_Box_relation_with_Generator`
 (`ppl_const_Pointset_Powerset_Uint8_Box_t ph`, `ppl_const_Generator_t c`)
 [`related`]
- 10.152.2.64** `int ppl_Pointset_Powerset_Uint8_Box_remove_higher_space_dimensions`
 (`ppl_Pointset_Powerset_Uint8_Box_t ph`, `ppl_dimension_type d`) [`related`]
- 10.152.2.65** `int ppl_Pointset_Powerset_Uint8_Box_remove_space_dimensions`
 (`ppl_Pointset_Powerset_Uint8_Box_t ph`, `ppl_dimension_type ds[ ]`, `size_t n`)
 [`related`]
- 10.152.2.66** `int ppl_Pointset_Powerset_Uint8_Box_simplify_using_context_assign`
 (`ppl_Pointset_Powerset_Uint8_Box_t x`, `ppl_const_Pointset_Powerset_Uint8_Box_t y`)
 [`related`]
- 10.152.2.67** `int ppl_Pointset_Powerset_Uint8_Box_size` (`ppl_const_Pointset_Powerset_Uint8_Box_t ps`, `size_t * sz`) [`related`]
- 10.152.2.68** `int ppl_Pointset_Powerset_Uint8_Box_space_dimension` (`ppl_const_Pointset_Powerset_Uint8_Box_t ph`, `ppl_dimension_type * m`)
 [`related`]
- 10.152.2.69** `int ppl_Pointset_Powerset_Uint8_Box_strictly_contains_Pointset_Powerset_Uint8_Box` (`ppl_const_Pointset_Powerset_Uint8_Box_t x`, `ppl_const_Pointset_Powerset_Uint8_Box_t y`) [`related`]

- 10.152.2.70** `int ppl_Pointset_Powerset_Uint8_Box_time_elapse_assign (ppl_Pointset_Powerset_Uint8_Box_t x, ppl_const_Pointset_Powerset_Uint8_Box_t y)` `[related]`
- 10.152.2.71** `int ppl_Pointset_Powerset_Uint8_Box_topological_closure_assign (ppl_Pointset_Powerset_Uint8_Box_t ph)` `[related]`
- 10.152.2.72** `int ppl_Pointset_Powerset_Uint8_Box_total_memory_in_bytes (ppl_const_Pointset_Powerset_Uint8_Box_t ps, size_t * sz)` `[related]`
- 10.152.2.73** `int ppl_Pointset_Powerset_Uint8_Box_unconstrain_space_dimension (ppl_Pointset_Powerset_Uint8_Box_t ph, ppl_dimension_type var)` `[related]`
- 10.152.2.74** `int ppl_Pointset_Powerset_Uint8_Box_unconstrain_space_dimensions (ppl_Pointset_Powerset_Uint8_Box_t ph, ppl_dimension_type ds[], size_t n)` `[related]`
- 10.152.2.75** `int ppl_Pointset_Powerset_Uint8_Box_upper_bound_assign (ppl_Pointset_Powerset_Uint8_Box_t x, ppl_const_Pointset_Powerset_Uint8_Box_t y)` `[related]`
- 10.152.2.76** `int ppl_Pointset_Powerset_Uint8_Box_upper_bound_assign_if_exact (ppl_Pointset_Powerset_Uint8_Box_t x, ppl_const_Pointset_Powerset_Uint8_Box_t y)` `[related]`

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.153 `ppl_Pointset_Powerset_Z_Box_const_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a const [ppl_Pointset_Powerset_Z_Box_tag](#).

```
#include <ppl_c.h>
```


Related Functions

(Note that these are not member functions.)

- `int ppl_new_Pointset_Powerset_Z_Box_const_iterator` (`ppl_Pointset_Powerset_Z_Box_const_iterator_t *pit`)
- `int ppl_new_Pointset_Powerset_Z_Box_const_iterator_from_const_iterator` (`ppl_Pointset_Powerset_Z_Box_const_iterator_t *px`, `ppl_const_Pointset_Powerset_Z_Box_const_iterator_t y`)
- `int ppl_Pointset_Powerset_Z_Box_const_iterator_begin` (`ppl_const_Pointset_Powerset_Z_Box_t ps`, `ppl_Pointset_Powerset_Z_Box_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Z_Box_const_iterator_end` (`ppl_const_Pointset_Powerset_Z_Box_t ps`, `ppl_Pointset_Powerset_Z_Box_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Z_Box_const_iterator_equal_test` (`ppl_const_Pointset_Powerset_Z_Box_const_iterator_t x`, `ppl_const_Pointset_Powerset_Z_Box_const_iterator_t y`)
- `int ppl_Pointset_Powerset_Z_Box_const_iterator_increment` (`ppl_Pointset_Powerset_Z_Box_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Z_Box_const_iterator_decrement` (`ppl_Pointset_Powerset_Z_Box_const_iterator_t psit`)
- `int ppl_Pointset_Powerset_Z_Box_const_iterator_dereference` (`ppl_const_Pointset_Powerset_Z_Box_const_iterator_t ps`, `ppl_const_Z_Box_t *d`)
- `int ppl_delete_Pointset_Powerset_Z_Box_const_iterator` (`ppl_const_Pointset_Powerset_Z_Box_const_iterator_t psit`)

10.153.1 Detailed Description

Types and functions for iterating on the disjuncts of a const `ppl_Pointset_Powerset_Z_Box_tag`.

10.153.2 Friends And Related Function Documentation

10.153.2.1 `int ppl_delete_Pointset_Powerset_Z_Box_const_iterator` (`ppl_const_Pointset_Powerset_Z_Box_const_iterator_t psit`) [**related**]

10.153.2.2 `int ppl_new_Pointset_Powerset_Z_Box_const_iterator` (`ppl_Pointset_Powerset_Z_Box_const_iterator_t *pit`) [**related**]

10.153.2.3 `int ppl_new_Pointset_Powerset_Z_Box_const_iterator_from_const_iterator` (`ppl_Pointset_Powerset_Z_Box_const_iterator_t *px`, `ppl_const_Pointset_Powerset_Z_Box_const_iterator_t y`) [**related**]

- 10.153.2.4 `int ppl_Pointset_Powerset_Z_Box_const_iterator_begin (ppl_const_Pointset_Powerset_Z_Box_t ps, ppl_Pointset_Powerset_Z_Box_const_iterator_t psit)` **[related]**
- 10.153.2.5 `int ppl_Pointset_Powerset_Z_Box_const_iterator_decrement (ppl_Pointset_Powerset_Z_Box_const_iterator_t psit)` **[related]**
- 10.153.2.6 `int ppl_Pointset_Powerset_Z_Box_const_iterator_dereference (ppl_const_Pointset_Powerset_Z_Box_const_iterator_t ps, ppl_const_Z_Box_t * d)` **[related]**
- 10.153.2.7 `int ppl_Pointset_Powerset_Z_Box_const_iterator_end (ppl_const_Pointset_Powerset_Z_Box_t ps, ppl_Pointset_Powerset_Z_Box_const_iterator_t psit)` **[related]**
- 10.153.2.8 `int ppl_Pointset_Powerset_Z_Box_const_iterator_equal_test (ppl_const_Pointset_Powerset_Z_Box_const_iterator_t x, ppl_const_Pointset_Powerset_Z_Box_const_iterator_t y)` **[related]**
- 10.153.2.9 `int ppl_Pointset_Powerset_Z_Box_const_iterator_increment (ppl_Pointset_Powerset_Z_Box_const_iterator_t psit)` **[related]**

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.154 `ppl_Pointset_Powerset_Z_Box_iterator_tag` Interface Reference

Types and functions for iterating on the disjuncts of a [ppl_Pointset_Powerset_Z_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl\_new\_Pointset\_Powerset\_Z\_Box\_iterator (ppl_Pointset_Powerset_Z_Box_iterator_t *pit)`

- `int ppl_new_Pointset_Powerset_Z_Box_iterator_from_iterator` (`ppl_Pointset_Powerset_Z_Box_iterator_t *px`, `ppl_const_Pointset_Powerset_Z_Box_iterator_t y`)
- `int ppl_Pointset_Powerset_Z_Box_iterator_begin` (`ppl_Pointset_Powerset_Z_Box_t ps`, `ppl_Pointset_Powerset_Z_Box_iterator_t psit`)
- `int ppl_Pointset_Powerset_Z_Box_iterator_end` (`ppl_Pointset_Powerset_Z_Box_t ps`, `ppl_Pointset_Powerset_Z_Box_iterator_t psit`)
- `int ppl_Pointset_Powerset_Z_Box_iterator_equal_test` (`ppl_const_Pointset_Powerset_Z_Box_iterator_t x`, `ppl_const_Pointset_Powerset_Z_Box_iterator_t y`)
- `int ppl_Pointset_Powerset_Z_Box_iterator_increment` (`ppl_Pointset_Powerset_Z_Box_iterator_t psit`)
- `int ppl_Pointset_Powerset_Z_Box_iterator_decrement` (`ppl_Pointset_Powerset_Z_Box_iterator_t psit`)
- `int ppl_Pointset_Powerset_Z_Box_iterator_dereference` (`ppl_const_Pointset_Powerset_Z_Box_iterator_t ps`, `ppl_const_Z_Box_t *d`)
- `int ppl_delete_Pointset_Powerset_Z_Box_iterator` (`ppl_const_Pointset_Powerset_Z_Box_iterator_t psit`)

10.154.1 Detailed Description

Types and functions for iterating on the disjuncts of a `ppl_Pointset_Powerset_Z_Box_tag`.

10.154.2 Friends And Related Function Documentation

10.154.2.1 `int ppl_delete_Pointset_Powerset_Z_Box_iterator` (`ppl_const_Pointset_Powerset_Z_Box_iterator_t psit`) [**related**]

10.154.2.2 `int ppl_new_Pointset_Powerset_Z_Box_iterator` (`ppl_Pointset_Powerset_Z_Box_iterator_t *pit`) [**related**]

10.154.2.3 `int ppl_new_Pointset_Powerset_Z_Box_iterator_from_iterator` (`ppl_Pointset_Powerset_Z_Box_iterator_t *px`, `ppl_const_Pointset_Powerset_Z_Box_iterator_t y`) [**related**]

10.154.2.4 `int ppl_Pointset_Powerset_Z_Box_iterator_begin` (`ppl_Pointset_Powerset_Z_Box_t ps`, `ppl_Pointset_Powerset_Z_Box_iterator_t psit`) [**related**]

10.154.2.5 `int ppl_Pointset_Powerset_Z_Box_iterator_decrement` (`ppl_Pointset_Powerset_Z_Box_iterator_t psit`) [**related**]

- 10.154.2.6** `int ppl_Pointset_Powerset_Z_Box_iterator_dereference (ppl_const_Pointset_Powerset_Z_Box_iterator_t ps, ppl_const_Z_Box_t * d)` `[related]`
- 10.154.2.7** `int ppl_Pointset_Powerset_Z_Box_iterator_end (ppl_Pointset_Powerset_Z_Box_t ps, ppl_Pointset_Powerset_Z_Box_iterator_t psit)` `[related]`
- 10.154.2.8** `int ppl_Pointset_Powerset_Z_Box_iterator_equal_test (ppl_const_Pointset_Powerset_Z_Box_iterator_t x, ppl_const_Pointset_Powerset_Z_Box_iterator_t y)` `[related]`
- 10.154.2.9** `int ppl_Pointset_Powerset_Z_Box_iterator_increment (ppl_Pointset_Powerset_Z_Box_iterator_t psit)` `[related]`

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.155 ppl_Pointset_Powerset_Z_Box_tag Interface Reference

Types and functions for [ppl_Pointset_Powerset_Z_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Pointset_Powerset_Z_Box (ppl_const_Pointset_Powerset_Z_Box_t ph)`
- `int ppl_new_Pointset_Powerset_Z_Box_from_space_dimension (ppl_Pointset_Powerset_Z_Box_t *pph, ppl_dimension_type d, int empty)`
- `int ppl_new_Pointset_Powerset_Z_Box_from_Pointset_Powerset_Z_Box (ppl_Pointset_Powerset_Z_Box_t *pph, ppl_const_Pointset_Powerset_Z_Box_t ph)`
- `int ppl_new_Pointset_Powerset_Z_Box_from_Z_Box (ppl_Pointset_Powerset_Z_Box_t *pph, ppl_const_Z_Box_t ph)`
- `int ppl_new_Pointset_Powerset_Z_Box_from_Pointset_Powerset_Z_Box_with_complexity (ppl_Pointset_Powerset_Z_Box_t *pph, ppl_const_Pointset_Powerset_Z_Box_t ph, int complexity)`
- `int ppl_new_Pointset_Powerset_Z_Box_from_Z_Box_with_complexity (ppl_Pointset_Powerset_Z_Box_t *pph, ppl_const_Z_Box_t ph, int complexity)`
- `int ppl_new_Pointset_Powerset_Z_Box_from_Constraint_System (ppl_Pointset_Powerset_Z_Box_t *pph, ppl_const_Constraint_System_t cs)`

- [int ppl_new_Pointset_Powerset_Z_Box_from_Congruence_System](#) (ppl_Pointset_Powerset_Z_Box_t *pph, ppl_const_Congruence_System_t cs)
- [int ppl_Pointset_Powerset_Z_Box_space_dimension](#) (ppl_const_Pointset_Powerset_Z_Box_t ph, ppl_dimension_type *m)
- [int ppl_Pointset_Powerset_Z_Box_affine_dimension](#) (ppl_const_Pointset_Powerset_Z_Box_t ph, ppl_dimension_type *m)
- [int ppl_Pointset_Powerset_Z_Box_relation_with_Constraint](#) (ppl_const_Pointset_Powerset_Z_Box_t ph, ppl_const_Constraint_t c)
- [int ppl_Pointset_Powerset_Z_Box_relation_with_Generator](#) (ppl_const_Pointset_Powerset_Z_Box_t ph, ppl_const_Generator_t c)
- [int ppl_Pointset_Powerset_Z_Box_relation_with_Congruence](#) (ppl_const_Pointset_Powerset_Z_Box_t ph, ppl_const_Congruence_t c)
- [int ppl_Pointset_Powerset_Z_Box_is_empty](#) (ppl_const_Pointset_Powerset_Z_Box_t ph)
- [int ppl_Pointset_Powerset_Z_Box_is_universe](#) (ppl_const_Pointset_Powerset_Z_Box_t ph)
- [int ppl_Pointset_Powerset_Z_Box_is_bounded](#) (ppl_const_Pointset_Powerset_Z_Box_t ph)
- [int ppl_Pointset_Powerset_Z_Box_contains_integer_point](#) (ppl_const_Pointset_Powerset_Z_Box_t ph)
- [int ppl_Pointset_Powerset_Z_Box_is_topologically_closed](#) (ppl_const_Pointset_Powerset_Z_Box_t ph)
- [int ppl_Pointset_Powerset_Z_Box_is_discrete](#) (ppl_const_Pointset_Powerset_Z_Box_t ph)
- [int ppl_Pointset_Powerset_Z_Box_topological_closure_assign](#) (ppl_Pointset_Powerset_Z_Box_t ph)
- [int ppl_Pointset_Powerset_Z_Box_pairwise_reduce](#) (ppl_Pointset_Powerset_Z_Box_t ph)
- [int ppl_Pointset_Powerset_Z_Box_omega_reduce](#) (ppl_Pointset_Powerset_Z_Box_t ph)
- [int ppl_Pointset_Powerset_Z_Box_bounds_from_above](#) (ppl_const_Pointset_Powerset_Z_Box_t ph, ppl_const_Linear_Expression_t le)
- [int ppl_Pointset_Powerset_Z_Box_bounds_from_below](#) (ppl_const_Pointset_Powerset_Z_Box_t ph, ppl_const_Linear_Expression_t le)
- [int ppl_Pointset_Powerset_Z_Box_maximize](#) (ppl_const_Pointset_Powerset_Z_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- [int ppl_Pointset_Powerset_Z_Box_minimize](#) (ppl_const_Pointset_Powerset_Z_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- [int ppl_Pointset_Powerset_Z_Box_maximize_with_point](#) (ppl_const_Pointset_Powerset_Z_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- [int ppl_Pointset_Powerset_Z_Box_minimize_with_point](#) (ppl_const_Pointset_Powerset_Z_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- [int ppl_Pointset_Powerset_Z_Box_contains_Pointset_Powerset_Z_Box](#) (ppl_const_Pointset_Powerset_Z_Box_t x, ppl_const_Pointset_Powerset_Z_Box_t y)
- [int ppl_Pointset_Powerset_Z_Box_strictly_contains_Pointset_Powerset_Z_Box](#) (ppl_const_Pointset_Powerset_Z_Box_t x, ppl_const_Pointset_Powerset_Z_Box_t y)
- [int ppl_Pointset_Powerset_Z_Box_is_disjoint_from_Pointset_Powerset_Z_Box](#) (ppl_const_Pointset_Powerset_Z_Box_t x, ppl_const_Pointset_Powerset_Z_Box_t y)
- [int ppl_Pointset_Powerset_Z_Box_geometrically_covers_Pointset_Powerset_Z_Box](#) (ppl_const_Pointset_Powerset_Z_Box_t x, ppl_const_Pointset_Powerset_Z_Box_t y)
- [int ppl_Pointset_Powerset_Z_Box_geometrically_equals_Pointset_Powerset_Z_Box](#) (ppl_const_Pointset_Powerset_Z_Box_t x, ppl_const_Pointset_Powerset_Z_Box_t y)
- [int ppl_Pointset_Powerset_Z_Box_equals_Pointset_Powerset_Z_Box](#) (ppl_const_Pointset_Powerset_Z_Box_t x, ppl_const_Pointset_Powerset_Z_Box_t y)
- [int ppl_Pointset_Powerset_Z_Box_OK](#) (ppl_const_Pointset_Powerset_Z_Box_t ph)

- int [ppl_Pointset_Powerset_Z_Box_add_constraint](#) (ppl_Pointset_Powerset_Z_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Z_Box_add_congruence](#) (ppl_Pointset_Powerset_Z_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Z_Box_add_constraints](#) (ppl_Pointset_Powerset_Z_Box_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_Z_Box_add_congruences](#) (ppl_Pointset_Powerset_Z_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_Z_Box_refine_with_constraint](#) (ppl_Pointset_Powerset_Z_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Pointset_Powerset_Z_Box_refine_with_congruence](#) (ppl_Pointset_Powerset_Z_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Pointset_Powerset_Z_Box_refine_with_constraints](#) (ppl_Pointset_Powerset_Z_Box_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Pointset_Powerset_Z_Box_refine_with_congruences](#) (ppl_Pointset_Powerset_Z_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Pointset_Powerset_Z_Box_intersection_assign](#) (ppl_Pointset_Powerset_Z_Box_t x, ppl_const_Pointset_Powerset_Z_Box_t y)
- int [ppl_Pointset_Powerset_Z_Box_upper_bound_assign](#) (ppl_Pointset_Powerset_Z_Box_t x, ppl_const_Pointset_Powerset_Z_Box_t y)
- int [ppl_Pointset_Powerset_Z_Box_difference_assign](#) (ppl_Pointset_Powerset_Z_Box_t x, ppl_const_Pointset_Powerset_Z_Box_t y)
- int [ppl_Pointset_Powerset_Z_Box_concatenate_assign](#) (ppl_Pointset_Powerset_Z_Box_t x, ppl_const_Pointset_Powerset_Z_Box_t y)
- int [ppl_Pointset_Powerset_Z_Box_time_elapse_assign](#) (ppl_Pointset_Powerset_Z_Box_t x, ppl_const_Pointset_Powerset_Z_Box_t y)
- int [ppl_Pointset_Powerset_Z_Box_upper_bound_assign_if_exact](#) (ppl_Pointset_Powerset_Z_Box_t x, ppl_const_Pointset_Powerset_Z_Box_t y)
- int [ppl_Pointset_Powerset_Z_Box_simplify_using_context_assign](#) (ppl_Pointset_Powerset_Z_Box_t x, ppl_const_Pointset_Powerset_Z_Box_t y)
- int [ppl_Pointset_Powerset_Z_Box_constrains](#) (ppl_Pointset_Powerset_Z_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_Z_Box_unconstrain_space_dimension](#) (ppl_Pointset_Powerset_Z_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Pointset_Powerset_Z_Box_unconstrain_space_dimensions](#) (ppl_Pointset_Powerset_Z_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_Z_Box_affine_image](#) (ppl_Pointset_Powerset_Z_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Z_Box_affine_preimage](#) (ppl_Pointset_Powerset_Z_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Z_Box_bounded_affine_image](#) (ppl_Pointset_Powerset_Z_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Z_Box_bounded_affine_preimage](#) (ppl_Pointset_Powerset_Z_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Z_Box_generalized_affine_image](#) (ppl_Pointset_Powerset_Z_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Pointset_Powerset_Z_Box_generalized_affine_preimage](#) (ppl_Pointset_Powerset_Z_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)

- int [ppl_Pointset_Powerset_Z_Box_generalized_affine_image_lhs_rhs](#) (ppl_Pointset_Powerset_Z_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_Z_Box_generalized_affine_preimage_lhs_rhs](#) (ppl_Pointset_Powerset_Z_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Pointset_Powerset_Z_Box_add_space_dimensions_and_embed](#) (ppl_Pointset_Powerset_Z_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Z_Box_add_space_dimensions_and_project](#) (ppl_Pointset_Powerset_Z_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Z_Box_remove_space_dimensions](#) (ppl_Pointset_Powerset_Z_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Pointset_Powerset_Z_Box_remove_higher_space_dimensions](#) (ppl_Pointset_Powerset_Z_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Z_Box_expand_space_dimension](#) (ppl_Pointset_Powerset_Z_Box_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Pointset_Powerset_Z_Box_fold_space_dimensions](#) (ppl_Pointset_Powerset_Z_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_Pointset_Powerset_Z_Box_map_space_dimensions](#) (ppl_Pointset_Powerset_Z_Box_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_Pointset_Powerset_Z_Box_drop_some_non_integer_points](#) (ppl_Pointset_Powerset_Z_Box_t ph, int complexity)
- int [ppl_Pointset_Powerset_Z_Box_drop_some_non_integer_points_2](#) (ppl_Pointset_Powerset_Z_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_Pointset_Powerset_Z_Box_external_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Z_Box_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Z_Box_total_memory_in_bytes](#) (ppl_const_Pointset_Powerset_Z_Box_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Z_Box_size](#) (ppl_const_Pointset_Powerset_Z_Box_t ps, size_t *sz)
- int [ppl_Pointset_Powerset_Z_Box_add_disjunct](#) (ppl_Pointset_Powerset_Z_Box_t ps, ppl_const_Z_Box_t d)
- int [ppl_Pointset_Powerset_Z_Box_drop_disjunct](#) (ppl_Pointset_Powerset_Z_Box_t ps, ppl_const_Pointset_Powerset_Z_Box_iterator_t cit, ppl_Pointset_Powerset_Z_Box_iterator_t it)
- int [ppl_Pointset_Powerset_Z_Box_drop_disjuncts](#) (ppl_Pointset_Powerset_Z_Box_t ps, ppl_const_Pointset_Powerset_Z_Box_iterator_t first, ppl_const_Pointset_Powerset_Z_Box_iterator_t last)

10.155.1 Detailed Description

Types and functions for [ppl_Pointset_Powerset_Z_Box_tag](#).

10.155.2 Friends And Related Function Documentation

10.155.2.1 int [ppl_delete_Pointset_Powerset_Z_Box](#) (ppl_const_Pointset_Powerset_Z_Box_t ph) [\[related\]](#)

- 10.155.2.2** `int ppl_new_Pointset_Powerset_Z_Box_from_Congruence_System`
 (`ppl_Pointset_Powerset_Z_Box_t * pph`, `ppl_const_Congruence_System_t cs`)
 [related]
- 10.155.2.3** `int ppl_new_Pointset_Powerset_Z_Box_from_Constraint_System`
 (`ppl_Pointset_Powerset_Z_Box_t * pph`, `ppl_const_Constraint_System_t cs`)
 [related]
- 10.155.2.4** `int ppl_new_Pointset_Powerset_Z_Box_from_Pointset_Powerset_Z_Box`
 (`ppl_Pointset_Powerset_Z_Box_t * pph`, `ppl_const_Pointset_Powerset_Z_Box_t ph`)
 [related]
- 10.155.2.5** `int ppl_new_Pointset_Powerset_Z_Box_from_Pointset_Powerset_Z_Box_with_complexity` (`ppl_Pointset_Powerset_Z_Box_t * pph`,
`ppl_const_Pointset_Powerset_Z_Box_t ph`, `int complexity`) [related]
- 10.155.2.6** `int ppl_new_Pointset_Powerset_Z_Box_from_space_dimension`
 (`ppl_Pointset_Powerset_Z_Box_t * pph`, `ppl_dimension_type d`, `int empty`)
 [related]
- 10.155.2.7** `int ppl_new_Pointset_Powerset_Z_Box_from_Z_Box` (`ppl_Pointset_Powerset_Z_Box_t`
`* pph`, `ppl_const_Z_Box_t ph`) [related]
- 10.155.2.8** `int ppl_new_Pointset_Powerset_Z_Box_from_Z_Box_with_complexity`
 (`ppl_Pointset_Powerset_Z_Box_t * pph`, `ppl_const_Z_Box_t ph`, `int complexity`)
 [related]
- 10.155.2.9** `int ppl_Pointset_Powerset_Z_Box_add_congruence` (`ppl_Pointset_Powerset_Z_Box_t`
`ph`, `ppl_const_Congruence_t c`) [related]

- 10.155.2.10 `int ppl_Pointset_Powerset_Z_Box_add_congruences (ppl_Pointset_Powerset_Z_Box_t ph, ppl_const_Congruence_System_t cs)` [**related**]
- 10.155.2.11 `int ppl_Pointset_Powerset_Z_Box_add_constraint (ppl_Pointset_Powerset_Z_Box_t ph, ppl_const_Constraint_t c)` [**related**]
- 10.155.2.12 `int ppl_Pointset_Powerset_Z_Box_add_constraints (ppl_Pointset_Powerset_Z_Box_t ph, ppl_const_Constraint_System_t cs)` [**related**]
- 10.155.2.13 `int ppl_Pointset_Powerset_Z_Box_add_disjunct (ppl_Pointset_Powerset_Z_Box_t ps, ppl_const_Z_Box_t d)` [**related**]
- 10.155.2.14 `int ppl_Pointset_Powerset_Z_Box_add_space_dimensions_and_embed (ppl_Pointset_Powerset_Z_Box_t ph, ppl_dimension_type d)` [**related**]
- 10.155.2.15 `int ppl_Pointset_Powerset_Z_Box_add_space_dimensions_and_project (ppl_Pointset_Powerset_Z_Box_t ph, ppl_dimension_type d)` [**related**]
- 10.155.2.16 `int ppl_Pointset_Powerset_Z_Box_affine_dimension (ppl_const_Pointset_Powerset_Z_Box_t ph, ppl_dimension_type * m)` [**related**]
- 10.155.2.17 `int ppl_Pointset_Powerset_Z_Box_affine_image (ppl_Pointset_Powerset_Z_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.155.2.18 `int ppl_Pointset_Powerset_Z_Box_affine_preimage (ppl_Pointset_Powerset_Z_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]

- 10.155.2.19 `int ppl_Pointset_Powerset_Z_Box_bounded_affine_image (ppl_Pointset_Powerset_Z_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [**related**]
- 10.155.2.20 `int ppl_Pointset_Powerset_Z_Box_bounded_affine_preimage (ppl_Pointset_Powerset_Z_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [**related**]
- 10.155.2.21 `int ppl_Pointset_Powerset_Z_Box_bounds_from_above (ppl_const_Pointset_Powerset_Z_Box_t ph, ppl_const_Linear_Expression_t le)` [**related**]
- 10.155.2.22 `int ppl_Pointset_Powerset_Z_Box_bounds_from_below (ppl_const_Pointset_Powerset_Z_Box_t ph, ppl_const_Linear_Expression_t le)` [**related**]
- 10.155.2.23 `int ppl_Pointset_Powerset_Z_Box_concatenate_assign (ppl_Pointset_Powerset_Z_Box_t x, ppl_const_Pointset_Powerset_Z_Box_t y)` [**related**]
- 10.155.2.24 `int ppl_Pointset_Powerset_Z_Box_constrains (ppl_Pointset_Powerset_Z_Box_t ph, ppl_dimension_type var)` [**related**]
- 10.155.2.25 `int ppl_Pointset_Powerset_Z_Box_contains_integer_point (ppl_const_Pointset_Powerset_Z_Box_t ph)` [**related**]
- 10.155.2.26 `int ppl_Pointset_Powerset_Z_Box_contains_Pointset_Powerset_Z_Box (ppl_const_Pointset_Powerset_Z_Box_t x, ppl_const_Pointset_Powerset_Z_Box_t y)` [**related**]

- 10.155.2.27 `int ppl_Pointset_Powerset_Z_Box_difference_assign (ppl_Pointset_Powerset_Z_Box_t x, ppl_const_Pointset_Powerset_Z_Box_t y)` [**related**]
- 10.155.2.28 `int ppl_Pointset_Powerset_Z_Box_drop_disjunct (ppl_Pointset_Powerset_Z_Box_t ps, ppl_const_Pointset_Powerset_Z_Box_iterator_t cit, ppl_Pointset_Powerset_Z_Box_iterator_t it)` [**related**]
- 10.155.2.29 `int ppl_Pointset_Powerset_Z_Box_drop_disjuncts (ppl_Pointset_Powerset_Z_Box_t ps, ppl_const_Pointset_Powerset_Z_Box_iterator_t first, ppl_const_Pointset_Powerset_Z_Box_iterator_t last)` [**related**]
- 10.155.2.30 `int ppl_Pointset_Powerset_Z_Box_drop_some_non_integer_points (ppl_Pointset_Powerset_Z_Box_t ph, int complexity)` [**related**]
- 10.155.2.31 `int ppl_Pointset_Powerset_Z_Box_drop_some_non_integer_points_2 (ppl_Pointset_Powerset_Z_Box_t ph, ppl_dimension_type ds[], size_t n, int complexity)` [**related**]
- 10.155.2.32 `int ppl_Pointset_Powerset_Z_Box_equals_Pointset_Powerset_Z_Box (ppl_const_Pointset_Powerset_Z_Box_t x, ppl_const_Pointset_Powerset_Z_Box_t y)` [**related**]
- 10.155.2.33 `int ppl_Pointset_Powerset_Z_Box_expand_space_dimension (ppl_Pointset_Powerset_Z_Box_t ph, ppl_dimension_type d, ppl_dimension_type m)` [**related**]
- 10.155.2.34 `int ppl_Pointset_Powerset_Z_Box_external_memory_in_bytes (ppl_const_Pointset_Powerset_Z_Box_t ps, size_t * sz)` [**related**]

- 10.155.2.35 `int ppl_Pointset_Powerset_Z_Box_fold_space_dimensions (ppl_Pointset_Powerset_Z_Box_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` **[related]**
- 10.155.2.36 `int ppl_Pointset_Powerset_Z_Box_generalized_affine_image (ppl_Pointset_Powerset_Z_Box_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` **[related]**
- 10.155.2.37 `int ppl_Pointset_Powerset_Z_Box_generalized_affine_image_lhs_rhs (ppl_Pointset_Powerset_Z_Box_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` **[related]**
- 10.155.2.38 `int ppl_Pointset_Powerset_Z_Box_generalized_affine_preimage (ppl_Pointset_Powerset_Z_Box_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` **[related]**
- 10.155.2.39 `int ppl_Pointset_Powerset_Z_Box_generalized_affine_preimage_lhs_rhs (ppl_Pointset_Powerset_Z_Box_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` **[related]**
- 10.155.2.40 `int ppl_Pointset_Powerset_Z_Box_geometrically_covers_Pointset_Powerset_Z_Box (ppl_const_Pointset_Powerset_Z_Box_t x, ppl_const_Pointset_Powerset_Z_Box_t y)` **[related]**
- 10.155.2.41 `int ppl_Pointset_Powerset_Z_Box_geometrically_equals_Pointset_Powerset_Z_Box (ppl_const_Pointset_Powerset_Z_Box_t x, ppl_const_Pointset_Powerset_Z_Box_t y)` **[related]**

- 10.155.2.42 `int ppl_Pointset_Powerset_Z_Box_intersection_assign (ppl_Pointset_Powerset_Z_Box_t x, ppl_const_Pointset_Powerset_Z_Box_t y)` `[related]`
- 10.155.2.43 `int ppl_Pointset_Powerset_Z_Box_is_bounded (ppl_const_Pointset_Powerset_Z_Box_t ph)` `[related]`
- 10.155.2.44 `int ppl_Pointset_Powerset_Z_Box_is_discrete (ppl_const_Pointset_Powerset_Z_Box_t ph)` `[related]`
- 10.155.2.45 `int ppl_Pointset_Powerset_Z_Box_is_disjoint_from_Pointset_Powerset_Z_Box (ppl_const_Pointset_Powerset_Z_Box_t x, ppl_const_Pointset_Powerset_Z_Box_t y)` `[related]`
- 10.155.2.46 `int ppl_Pointset_Powerset_Z_Box_is_empty (ppl_const_Pointset_Powerset_Z_Box_t ph)` `[related]`
- 10.155.2.47 `int ppl_Pointset_Powerset_Z_Box_is_topologically_closed (ppl_const_Pointset_Powerset_Z_Box_t ph)` `[related]`
- 10.155.2.48 `int ppl_Pointset_Powerset_Z_Box_is_universe (ppl_const_Pointset_Powerset_Z_Box_t ph)` `[related]`
- 10.155.2.49 `int ppl_Pointset_Powerset_Z_Box_map_space_dimensions (ppl_Pointset_Powerset_Z_Box_t ph, ppl_dimension_type maps[], size_t n)` `[related]`
- 10.155.2.50 `int ppl_Pointset_Powerset_Z_Box_maximize (ppl_const_Pointset_Powerset_Z_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` `[related]`

- 10.155.2.51 `int ppl_Pointset_Powerset_Z_Box_maximize_with_point (ppl_const_Pointset_Powerset_Z_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` [related]
- 10.155.2.52 `int ppl_Pointset_Powerset_Z_Box_minimize (ppl_const_Pointset_Powerset_Z_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)` [related]
- 10.155.2.53 `int ppl_Pointset_Powerset_Z_Box_minimize_with_point (ppl_const_Pointset_Powerset_Z_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)` [related]
- 10.155.2.54 `int ppl_Pointset_Powerset_Z_Box_OK (ppl_const_Pointset_Powerset_Z_Box_t ph)` [related]
- 10.155.2.55 `int ppl_Pointset_Powerset_Z_Box_omega_reduce (ppl_Pointset_Powerset_Z_Box_t ph)` [related]
- 10.155.2.56 `int ppl_Pointset_Powerset_Z_Box_pairwise_reduce (ppl_Pointset_Powerset_Z_Box_t ph)` [related]
- 10.155.2.57 `int ppl_Pointset_Powerset_Z_Box_refine_with_congruence (ppl_Pointset_Powerset_Z_Box_t ph, ppl_const_Congruence_t c)` [related]
- 10.155.2.58 `int ppl_Pointset_Powerset_Z_Box_refine_with_congruences (ppl_Pointset_Powerset_Z_Box_t ph, ppl_const_Congruence_System_t cs)` [related]
- 10.155.2.59 `int ppl_Pointset_Powerset_Z_Box_refine_with_constraint (ppl_Pointset_Powerset_Z_Box_t ph, ppl_const_Constraint_t c)` [related]

- 10.155.2.60 `int ppl_Pointset_Powerset_Z_Box_refine_with_constraints (ppl_Pointset_Powerset_Z_Box_t ph, ppl_const_Constraint_System_t cs)`
[related]
- 10.155.2.61 `int ppl_Pointset_Powerset_Z_Box_relation_with_Congruence (ppl_const_Pointset_Powerset_Z_Box_t ph, ppl_const_Congruence_t c)`
[related]
- 10.155.2.62 `int ppl_Pointset_Powerset_Z_Box_relation_with_Constraint (ppl_const_Pointset_Powerset_Z_Box_t ph, ppl_const_Constraint_t c)` [related]
- 10.155.2.63 `int ppl_Pointset_Powerset_Z_Box_relation_with_Generator (ppl_const_Pointset_Powerset_Z_Box_t ph, ppl_const_Generator_t c)` [related]
- 10.155.2.64 `int ppl_Pointset_Powerset_Z_Box_remove_higher_space_dimensions (ppl_Pointset_Powerset_Z_Box_t ph, ppl_dimension_type d)` [related]
- 10.155.2.65 `int ppl_Pointset_Powerset_Z_Box_remove_space_dimensions (ppl_Pointset_Powerset_Z_Box_t ph, ppl_dimension_type ds[], size_t n)`
[related]
- 10.155.2.66 `int ppl_Pointset_Powerset_Z_Box_simplify_using_context_assign (ppl_Pointset_Powerset_Z_Box_t x, ppl_const_Pointset_Powerset_Z_Box_t y)`
[related]
- 10.155.2.67 `int ppl_Pointset_Powerset_Z_Box_size (ppl_const_Pointset_Powerset_Z_Box_t ps, size_t * sz)` [related]

- 10.155.2.68 `int ppl_Pointset_Powerset_Z_Box_space_dimension (ppl_const_Pointset_Powerset_Z_Box_t ph, ppl_dimension_type * m)`
[related]
- 10.155.2.69 `int ppl_Pointset_Powerset_Z_Box_strictly_contains_Pointset_Powerset_Z_Box (ppl_const_Pointset_Powerset_Z_Box_t x, ppl_const_Pointset_Powerset_Z_Box_t y)`
[related]
- 10.155.2.70 `int ppl_Pointset_Powerset_Z_Box_time_elapse_assign (ppl_Pointset_Powerset_Z_Box_t x, ppl_const_Pointset_Powerset_Z_Box_t y)`
[related]
- 10.155.2.71 `int ppl_Pointset_Powerset_Z_Box_topological_closure_assign (ppl_Pointset_Powerset_Z_Box_t ph)` [related]
- 10.155.2.72 `int ppl_Pointset_Powerset_Z_Box_total_memory_in_bytes (ppl_const_Pointset_Powerset_Z_Box_t ps, size_t * sz)` [related]
- 10.155.2.73 `int ppl_Pointset_Powerset_Z_Box_unconstrain_space_dimension (ppl_Pointset_Powerset_Z_Box_t ph, ppl_dimension_type var)` [related]
- 10.155.2.74 `int ppl_Pointset_Powerset_Z_Box_unconstrain_space_dimensions (ppl_Pointset_Powerset_Z_Box_t ph, ppl_dimension_type ds[], size_t n)`
[related]
- 10.155.2.75 `int ppl_Pointset_Powerset_Z_Box_upper_bound_assign (ppl_Pointset_Powerset_Z_Box_t x, ppl_const_Pointset_Powerset_Z_Box_t y)`
[related]

10.155.2.76 `int ppl_Pointset_Powerset_Z_Box_upper_bound_assign_if_exact`
 (`ppl_Pointset_Powerset_Z_Box_t x`, `ppl_const_Pointset_Powerset_Z_Box_t y`)
 [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.156 `ppl_Polyhedron_tag` Interface Reference

Types and functions for the domains of C and NNC convex polyhedra.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_new_C_Polyhedron_from_Int8_Box` (`ppl_Polyhedron_t *pph`, `ppl_const_Int8_Box_t ph`)
- `int ppl_new_NNC_Polyhedron_from_Int8_Box` (`ppl_Polyhedron_t *pph`, `ppl_const_Int8_Box_t ph`)
- `int ppl_new_C_Polyhedron_from_Int16_Box` (`ppl_Polyhedron_t *pph`, `ppl_const_Int16_Box_t ph`)
- `int ppl_new_NNC_Polyhedron_from_Int16_Box` (`ppl_Polyhedron_t *pph`, `ppl_const_Int16_Box_t ph`)
- `int ppl_new_C_Polyhedron_from_Int32_Box` (`ppl_Polyhedron_t *pph`, `ppl_const_Int32_Box_t ph`)
- `int ppl_new_NNC_Polyhedron_from_Int32_Box` (`ppl_Polyhedron_t *pph`, `ppl_const_Int32_Box_t ph`)
- `int ppl_new_C_Polyhedron_from_Int64_Box` (`ppl_Polyhedron_t *pph`, `ppl_const_Int64_Box_t ph`)
- `int ppl_new_NNC_Polyhedron_from_Int64_Box` (`ppl_Polyhedron_t *pph`, `ppl_const_Int64_Box_t ph`)
- `int ppl_new_C_Polyhedron_from_UInt8_Box` (`ppl_Polyhedron_t *pph`, `ppl_const_UInt8_Box_t ph`)
- `int ppl_new_NNC_Polyhedron_from_UInt8_Box` (`ppl_Polyhedron_t *pph`, `ppl_const_UInt8_Box_t ph`)
- `int ppl_new_C_Polyhedron_from_UInt16_Box` (`ppl_Polyhedron_t *pph`, `ppl_const_UInt16_Box_t ph`)
- `int ppl_new_NNC_Polyhedron_from_UInt16_Box` (`ppl_Polyhedron_t *pph`, `ppl_const_UInt16_Box_t ph`)
- `int ppl_new_C_Polyhedron_from_UInt32_Box` (`ppl_Polyhedron_t *pph`, `ppl_const_UInt32_Box_t ph`)
- `int ppl_new_NNC_Polyhedron_from_UInt32_Box` (`ppl_Polyhedron_t *pph`, `ppl_const_UInt32_Box_t ph`)
- `int ppl_new_C_Polyhedron_from_UInt64_Box` (`ppl_Polyhedron_t *pph`, `ppl_const_UInt64_Box_t ph`)
- `int ppl_new_NNC_Polyhedron_from_UInt64_Box` (`ppl_Polyhedron_t *pph`, `ppl_const_UInt64_Box_t ph`)
- `int ppl_new_C_Polyhedron_from_Z_Box` (`ppl_Polyhedron_t *pph`, `ppl_const_Z_Box_t ph`)
- `int ppl_new_NNC_Polyhedron_from_Z_Box` (`ppl_Polyhedron_t *pph`, `ppl_const_Z_Box_t ph`)
- `int ppl_new_C_Polyhedron_from_Rational_Box` (`ppl_Polyhedron_t *pph`, `ppl_const_Rational_Box_t ph`)
- `int ppl_new_NNC_Polyhedron_from_Rational_Box` (`ppl_Polyhedron_t *pph`, `ppl_const_Rational_Box_t ph`)

- int [ppl_new_C_Polyhedron_from_BD_Shape_int8_t](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_int8_t_t ph)
- int [ppl_new_NNC_Polyhedron_from_BD_Shape_int8_t](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_int8_t_t ph)
- int [ppl_new_C_Polyhedron_from_BD_Shape_int16_t](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_int16_t_t ph)
- int [ppl_new_NNC_Polyhedron_from_BD_Shape_int16_t](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_int16_t_t ph)
- int [ppl_new_C_Polyhedron_from_BD_Shape_int32_t](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_int32_t_t ph)
- int [ppl_new_NNC_Polyhedron_from_BD_Shape_int32_t](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_int32_t_t ph)
- int [ppl_new_C_Polyhedron_from_BD_Shape_int64_t](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_int64_t_t ph)
- int [ppl_new_NNC_Polyhedron_from_BD_Shape_int64_t](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_int64_t_t ph)
- int [ppl_new_C_Polyhedron_from_BD_Shape_mpz_class](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_mpz_class_t ph)
- int [ppl_new_NNC_Polyhedron_from_BD_Shape_mpz_class](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_mpz_class_t ph)
- int [ppl_new_C_Polyhedron_from_BD_Shape_mpq_class](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_mpq_class_t ph)
- int [ppl_new_NNC_Polyhedron_from_BD_Shape_mpq_class](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_mpq_class_t ph)
- int [ppl_new_C_Polyhedron_from_Octagonal_Shape_int8_t](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph)
- int [ppl_new_NNC_Polyhedron_from_Octagonal_Shape_int8_t](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph)
- int [ppl_new_C_Polyhedron_from_Octagonal_Shape_int16_t](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph)
- int [ppl_new_NNC_Polyhedron_from_Octagonal_Shape_int16_t](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph)
- int [ppl_new_C_Polyhedron_from_Octagonal_Shape_int32_t](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph)
- int [ppl_new_NNC_Polyhedron_from_Octagonal_Shape_int32_t](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph)
- int [ppl_new_C_Polyhedron_from_Octagonal_Shape_int64_t](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph)
- int [ppl_new_NNC_Polyhedron_from_Octagonal_Shape_int64_t](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph)
- int [ppl_new_C_Polyhedron_from_Octagonal_Shape_mpz_class](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph)
- int [ppl_new_NNC_Polyhedron_from_Octagonal_Shape_mpz_class](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph)
- int [ppl_new_C_Polyhedron_from_Octagonal_Shape_mpq_class](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph)
- int [ppl_new_NNC_Polyhedron_from_Octagonal_Shape_mpq_class](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph)
- int [ppl_new_C_Polyhedron_from_Grid](#) (ppl_Polyhedron_t *pph, ppl_const_Grid_t ph)
- int [ppl_new_NNC_Polyhedron_from_Grid](#) (ppl_Polyhedron_t *pph, ppl_const_Grid_t ph)
- int [ppl_new_C_Polyhedron_from_Float_Box](#) (ppl_Polyhedron_t *pph, ppl_const_Float_Box_t ph)

- int [ppl_new_NNC_Polyhedron_from_Float_Box](#) (ppl_Polyhedron_t *pph, ppl_const_Float_Box_t ph)
- int [ppl_new_C_Polyhedron_from_BD_Shape_float](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_float_t ph)
- int [ppl_new_NNC_Polyhedron_from_BD_Shape_float](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_float_t ph)
- int [ppl_new_C_Polyhedron_from_Octagonal_Shape_float](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_float_t ph)
- int [ppl_new_NNC_Polyhedron_from_Octagonal_Shape_float](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_float_t ph)
- int [ppl_new_C_Polyhedron_from_Double_Box](#) (ppl_Polyhedron_t *pph, ppl_const_Double_Box_t ph)
- int [ppl_new_NNC_Polyhedron_from_Double_Box](#) (ppl_Polyhedron_t *pph, ppl_const_Double_Box_t ph)
- int [ppl_new_C_Polyhedron_from_BD_Shape_double](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_double_t ph)
- int [ppl_new_NNC_Polyhedron_from_BD_Shape_double](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_double_t ph)
- int [ppl_new_C_Polyhedron_from_Octagonal_Shape_double](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_double_t ph)
- int [ppl_new_NNC_Polyhedron_from_Octagonal_Shape_double](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_double_t ph)
- int [ppl_new_C_Polyhedron_from_Long_Double_Box](#) (ppl_Polyhedron_t *pph, ppl_const_Long_Double_Box_t ph)
- int [ppl_new_NNC_Polyhedron_from_Long_Double_Box](#) (ppl_Polyhedron_t *pph, ppl_const_Long_Double_Box_t ph)
- int [ppl_new_C_Polyhedron_from_BD_Shape_long_double](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_long_double_t ph)
- int [ppl_new_NNC_Polyhedron_from_BD_Shape_long_double](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_long_double_t ph)
- int [ppl_new_C_Polyhedron_from_Octagonal_Shape_long_double](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_long_double_t ph)
- int [ppl_new_NNC_Polyhedron_from_Octagonal_Shape_long_double](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_long_double_t ph)
- int [ppl_new_C_Polyhedron_from_Int8_Box_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Int8_Box_t ph, int complexity)
- int [ppl_new_NNC_Polyhedron_from_Int8_Box_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Int8_Box_t ph, int complexity)
- int [ppl_new_C_Polyhedron_from_Int16_Box_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Int16_Box_t ph, int complexity)
- int [ppl_new_NNC_Polyhedron_from_Int16_Box_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Int16_Box_t ph, int complexity)
- int [ppl_new_C_Polyhedron_from_Int32_Box_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Int32_Box_t ph, int complexity)
- int [ppl_new_NNC_Polyhedron_from_Int32_Box_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Int32_Box_t ph, int complexity)
- int [ppl_new_C_Polyhedron_from_Int64_Box_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Int64_Box_t ph, int complexity)
- int [ppl_new_NNC_Polyhedron_from_Int64_Box_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Int64_Box_t ph, int complexity)
- int [ppl_new_C_Polyhedron_from_Uint8_Box_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Uint8_Box_t ph, int complexity)

- int [ppl_new_NNC_Polyhedron_from_Uint8_Box_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Uint8_Box_t ph, int complexity)
- int [ppl_new_C_Polyhedron_from_Uint16_Box_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Uint16_Box_t ph, int complexity)
- int [ppl_new_NNC_Polyhedron_from_Uint16_Box_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Uint16_Box_t ph, int complexity)
- int [ppl_new_C_Polyhedron_from_Uint32_Box_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Uint32_Box_t ph, int complexity)
- int [ppl_new_NNC_Polyhedron_from_Uint32_Box_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Uint32_Box_t ph, int complexity)
- int [ppl_new_C_Polyhedron_from_Uint64_Box_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Uint64_Box_t ph, int complexity)
- int [ppl_new_NNC_Polyhedron_from_Uint64_Box_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Uint64_Box_t ph, int complexity)
- int [ppl_new_C_Polyhedron_from_Z_Box_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Z_Box_t ph, int complexity)
- int [ppl_new_NNC_Polyhedron_from_Z_Box_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Z_Box_t ph, int complexity)
- int [ppl_new_C_Polyhedron_from_Rational_Box_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Rational_Box_t ph, int complexity)
- int [ppl_new_NNC_Polyhedron_from_Rational_Box_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Rational_Box_t ph, int complexity)
- int [ppl_new_C_Polyhedron_from_BD_Shape_int8_t_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)
- int [ppl_new_NNC_Polyhedron_from_BD_Shape_int8_t_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)
- int [ppl_new_C_Polyhedron_from_BD_Shape_int16_t_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)
- int [ppl_new_NNC_Polyhedron_from_BD_Shape_int16_t_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)
- int [ppl_new_C_Polyhedron_from_BD_Shape_int32_t_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)
- int [ppl_new_NNC_Polyhedron_from_BD_Shape_int32_t_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)
- int [ppl_new_C_Polyhedron_from_BD_Shape_int64_t_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)
- int [ppl_new_NNC_Polyhedron_from_BD_Shape_int64_t_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)
- int [ppl_new_C_Polyhedron_from_BD_Shape_mpz_class_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_NNC_Polyhedron_from_BD_Shape_mpz_class_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_C_Polyhedron_from_BD_Shape_mpq_class_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_NNC_Polyhedron_from_BD_Shape_mpq_class_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_C_Polyhedron_from_Octagonal_Shape_int8_t_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)
- int [ppl_new_NNC_Polyhedron_from_Octagonal_Shape_int8_t_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)
- int [ppl_new_C_Polyhedron_from_Octagonal_Shape_int16_t_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)

- [int ppl_new_NNC_Polyhedron_from_Octagonal_Shape_int16_t_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)
- [int ppl_new_C_Polyhedron_from_Octagonal_Shape_int32_t_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)
- [int ppl_new_NNC_Polyhedron_from_Octagonal_Shape_int32_t_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)
- [int ppl_new_C_Polyhedron_from_Octagonal_Shape_int64_t_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)
- [int ppl_new_NNC_Polyhedron_from_Octagonal_Shape_int64_t_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)
- [int ppl_new_C_Polyhedron_from_Octagonal_Shape_mpz_class_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)
- [int ppl_new_NNC_Polyhedron_from_Octagonal_Shape_mpz_class_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)
- [int ppl_new_C_Polyhedron_from_Octagonal_Shape_mpq_class_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)
- [int ppl_new_NNC_Polyhedron_from_Octagonal_Shape_mpq_class_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)
- [int ppl_new_C_Polyhedron_from_Grid_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Grid_t ph, int complexity)
- [int ppl_new_NNC_Polyhedron_from_Grid_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Grid_t ph, int complexity)
- [int ppl_new_C_Polyhedron_from_Float_Box_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Float_Box_t ph, int complexity)
- [int ppl_new_NNC_Polyhedron_from_Float_Box_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Float_Box_t ph, int complexity)
- [int ppl_new_C_Polyhedron_from_BD_Shape_float_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_float_t ph, int complexity)
- [int ppl_new_NNC_Polyhedron_from_BD_Shape_float_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_float_t ph, int complexity)
- [int ppl_new_C_Polyhedron_from_Octagonal_Shape_float_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)
- [int ppl_new_NNC_Polyhedron_from_Octagonal_Shape_float_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)
- [int ppl_new_C_Polyhedron_from_Double_Box_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Double_Box_t ph, int complexity)
- [int ppl_new_NNC_Polyhedron_from_Double_Box_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Double_Box_t ph, int complexity)
- [int ppl_new_C_Polyhedron_from_BD_Shape_double_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_double_t ph, int complexity)
- [int ppl_new_NNC_Polyhedron_from_BD_Shape_double_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_double_t ph, int complexity)
- [int ppl_new_C_Polyhedron_from_Octagonal_Shape_double_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)
- [int ppl_new_NNC_Polyhedron_from_Octagonal_Shape_double_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)
- [int ppl_new_C_Polyhedron_from_Long_Double_Box_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- [int ppl_new_NNC_Polyhedron_from_Long_Double_Box_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- [int ppl_new_C_Polyhedron_from_BD_Shape_long_double_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity)

- int [ppl_new_NNC_Polyhedron_from_BD_Shape_long_double_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity)
- int [ppl_new_C_Polyhedron_from_Octagonal_Shape_long_double_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)
- int [ppl_new_NNC_Polyhedron_from_Octagonal_Shape_long_double_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)
- int [ppl_Polyhedron_relation_with_Congruence](#) (ppl_const_Polyhedron_t ph, ppl_const_Congruence_t c)
- int [ppl_Polyhedron_minimize](#) (ppl_const_Polyhedron_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Polyhedron_frequency](#) (ppl_const_Polyhedron_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)
- int [ppl_Polyhedron_upper_bound_assign_if_exact](#) (ppl_Polyhedron_t x, ppl_const_Polyhedron_t y)
- int [ppl_Polyhedron_poly_hull_assign_if_exact](#) (ppl_Polyhedron_t x, ppl_const_Polyhedron_t y)
- int [ppl_Polyhedron_drop_some_non_integer_points](#) (ppl_Polyhedron_t ph, int complexity)
- int [ppl_Polyhedron_drop_some_non_integer_points_2](#) (ppl_Polyhedron_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_Polyhedron_widening_assign_with_tokens](#) (ppl_Polyhedron_t x, ppl_const_Polyhedron_t y, unsigned *tp)
- int [ppl_Polyhedron_widening_assign](#) (ppl_Polyhedron_t x, ppl_const_Polyhedron_t y)
- int [ppl_Polyhedron_linear_partition](#) (ppl_const_Polyhedron_t x, ppl_const_Polyhedron_t y, ppl_Polyhedron_t *p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest)
- int [ppl_Polyhedron_wrap_assign](#) (ppl_Polyhedron_t ph, [ppl_dimension_type](#) ds[], size_t n, enum [ppl_enum_Bounded_Integer_Type_Width](#) w, enum [ppl_enum_Bounded_Integer_Type_Representation](#) r, enum [ppl_enum_Bounded_Integer_Type_Overflow](#) o, const ppl_Constraint_System_t *pcs, unsigned complexity_threshold, int wrap_individually)
- int [ppl_termination_test_MS_C_Polyhedron](#) (ppl_const_Polyhedron_t pset)
- int [ppl_termination_test_PR_C_Polyhedron](#) (ppl_const_Polyhedron_t pset)
- int [ppl_termination_test_MS_NNC_Polyhedron](#) (ppl_const_Polyhedron_t pset)
- int [ppl_termination_test_PR_NNC_Polyhedron](#) (ppl_const_Polyhedron_t pset)
- int [ppl_one_affine_ranking_function_MS_C_Polyhedron](#) (ppl_const_Polyhedron_t pset, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_C_Polyhedron](#) (ppl_const_Polyhedron_t pset, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_MS_NNC_Polyhedron](#) (ppl_const_Polyhedron_t pset, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_NNC_Polyhedron](#) (ppl_const_Polyhedron_t pset, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_C_Polyhedron](#) (ppl_const_Polyhedron_t pset, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_C_Polyhedron](#) (ppl_const_Polyhedron_t pset, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_MS_NNC_Polyhedron](#) (ppl_const_Polyhedron_t pset, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_NNC_Polyhedron](#) (ppl_const_Polyhedron_t pset, ppl_Polyhedron_t ph)
- int [ppl_termination_test_MS_C_Polyhedron_2](#) (ppl_const_Polyhedron_t pset_before, ppl_const_Polyhedron_t pset_after)
- int [ppl_termination_test_PR_C_Polyhedron_2](#) (ppl_const_Polyhedron_t pset_before, ppl_const_Polyhedron_t pset_after)

- int [ppl_termination_test_MS_NNC_Polyhedron_2](#) (ppl_const_Polyhedron_t pset_before, ppl_const_Polyhedron_t pset_after)
- int [ppl_termination_test_PR_NNC_Polyhedron_2](#) (ppl_const_Polyhedron_t pset_before, ppl_const_Polyhedron_t pset_after)
- int [ppl_one_affine_ranking_function_MS_C_Polyhedron_2](#) (ppl_const_Polyhedron_t pset_before, ppl_const_Polyhedron_t pset_after, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_C_Polyhedron_2](#) (ppl_const_Polyhedron_t pset_before, ppl_const_Polyhedron_t pset_after, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_MS_NNC_Polyhedron_2](#) (ppl_const_Polyhedron_t pset_before, ppl_const_Polyhedron_t pset_after, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_NNC_Polyhedron_2](#) (ppl_const_Polyhedron_t pset_before, ppl_const_Polyhedron_t pset_after, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_C_Polyhedron_2](#) (ppl_const_Polyhedron_t pset_before, ppl_const_Polyhedron_t pset_after, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_C_Polyhedron_2](#) (ppl_const_Polyhedron_t pset_before, ppl_const_Polyhedron_t pset_after, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_MS_NNC_Polyhedron_2](#) (ppl_const_Polyhedron_t pset_before, ppl_const_Polyhedron_t pset_after, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_NNC_Polyhedron_2](#) (ppl_const_Polyhedron_t pset_before, ppl_const_Polyhedron_t pset_after, ppl_Polyhedron_t ph)

Constructors and Assignment for C_Polyhedron

- int [ppl_new_C_Polyhedron_from_space_dimension](#) (ppl_Polyhedron_t *pph, [ppl_dimension_type](#) d, int empty)
Builds a C polyhedron of dimension d and writes an handle to it at address pph. If empty is different from zero, the newly created polyhedron will be empty; otherwise, it will be a universe polyhedron.
- int [ppl_new_C_Polyhedron_from_C_Polyhedron](#) (ppl_Polyhedron_t *pph, ppl_const_Polyhedron_t ph)
Builds a C polyhedron that is a copy of ph; writes a handle for the newly created polyhedron at address pph.
- int [ppl_new_C_Polyhedron_from_C_Polyhedron_with_complexity](#) (ppl_Polyhedron_t *pph, ppl_const_Polyhedron_t ph, int complexity)
Builds a C polyhedron that is a copy of ph; writes a handle for the newly created polyhedron at address pph.
- int [ppl_new_C_Polyhedron_from_Constraint_System](#) (ppl_Polyhedron_t *pph, ppl_const_Constraint_System_t cs)
Builds a new C polyhedron from the system of constraints cs and writes a handle for the newly created polyhedron at address pph.
- int [ppl_new_C_Polyhedron_recycle_Constraint_System](#) (ppl_Polyhedron_t *pph, ppl_Constraint_System_t cs)
Builds a new C polyhedron recycling the system of constraints cs and writes a handle for the newly created polyhedron at address pph.
- int [ppl_new_C_Polyhedron_from_Congruence_System](#) (ppl_Polyhedron_t *pph, ppl_const_Congruence_System_t cs)
Builds a new C polyhedron from the system of congruences cs and writes a handle for the newly created polyhedron at address pph.

- `int ppl_new_C_Polyhedron_recycle_Congruence_System` (`ppl_Polyhedron_t *pph`, `ppl_Congruence_System_t cs`)
Builds a new C polyhedron recycling the system of congruences `cs` and writes a handle for the newly created polyhedron at address `pph`.
- `int ppl_assign_C_Polyhedron_from_C_Polyhedron` (`ppl_Polyhedron_t dst`, `ppl_const_Polyhedron_t src`)
Assigns a copy of the C polyhedron `src` to the C polyhedron `dst`.

Constructors and Assignment for NNC_Polyhedron

- `int ppl_new_NNC_Polyhedron_from_space_dimension` (`ppl_Polyhedron_t *pph`, `ppl_dimension_type d`, `int empty`)
Builds an NNC polyhedron of dimension `d` and writes an handle to it at address `pph`. If `empty` is different from zero, the newly created polyhedron will be empty; otherwise, it will be a universe polyhedron.
- `int ppl_new_NNC_Polyhedron_from_NNC_Polyhedron` (`ppl_Polyhedron_t *pph`, `ppl_const_Polyhedron_t ph`)
Builds an NNC polyhedron that is a copy of `ph`; writes a handle for the newly created polyhedron at address `pph`.
- `int ppl_new_NNC_Polyhedron_from_NNC_Polyhedron_with_complexity` (`ppl_Polyhedron_t *pph`, `ppl_const_Polyhedron_t ph`, `int complexity`)
Builds an NNC polyhedron that is a copy of `ph`; writes a handle for the newly created polyhedron at address `pph`.
- `int ppl_new_NNC_Polyhedron_from_Constraint_System` (`ppl_Polyhedron_t *pph`, `ppl_const_Constraint_System_t cs`)
Builds a new NNC polyhedron from the system of constraints `cs` and writes a handle for the newly created polyhedron at address `pph`.
- `int ppl_new_NNC_Polyhedron_recycle_Constraint_System` (`ppl_Polyhedron_t *pph`, `ppl_Constraint_System_t cs`)
Builds a new NNC polyhedron recycling the system of constraints `cs` and writes a handle for the newly created polyhedron at address `pph`.
- `int ppl_new_NNC_Polyhedron_from_Congruence_System` (`ppl_Polyhedron_t *pph`, `ppl_const_Congruence_System_t cs`)
Builds a new NNC polyhedron from the system of congruences `cs` and writes a handle for the newly created polyhedron at address `pph`.
- `int ppl_new_NNC_Polyhedron_recycle_Congruence_System` (`ppl_Polyhedron_t *pph`, `ppl_Congruence_System_t cs`)
Builds a new NNC polyhedron recycling the system of congruences `cs` and writes a handle for the newly created polyhedron at address `pph`.
- `int ppl_assign_NNC_Polyhedron_from_NNC_Polyhedron` (`ppl_Polyhedron_t dst`, `ppl_const_Polyhedron_t src`)
Assigns a copy of the NNC polyhedron `src` to the NNC polyhedron `dst`.

Constructors Behaving as Conversion Operators

Besides the conversions listed here below, the library also provides conversion operators that build a semantic geometric description starting from **any** other semantic geometric description (e.g., `ppl_new_Grid_from_C_Polyhedron`, `ppl_new_C_Polyhedron_from_BD_Shape_mpq_class`, etc.). Clearly,

the conversion operators are only available if both the source and the target semantic geometric descriptions have been enabled when configuring the library. The conversions also taking as argument a complexity class sometimes provide non-trivial precision/efficiency trade-offs.

- `int ppl_new_C_Polyhedron_from_NNC_Polyhedron` (`ppl_Polyhedron_t *pph`, `ppl_const_Polyhedron_t ph`)
Builds a C polyhedron that is a copy of the topological closure of the NNC polyhedron `ph`; writes a handle for the newly created polyhedron at address `pph`.
- `int ppl_new_C_Polyhedron_from_NNC_Polyhedron_with_complexity` (`ppl_Polyhedron_t *pph`, `ppl_const_Polyhedron_t ph`, `int complexity`)
Builds a C polyhedron that approximates NNC_Polyhedron `ph`, using an algorithm whose complexity does not exceed `complexity`; writes a handle for the newly created polyhedron at address `pph`.
- `int ppl_new_NNC_Polyhedron_from_C_Polyhedron` (`ppl_Polyhedron_t *pph`, `ppl_const_Polyhedron_t ph`)
Builds an NNC polyhedron that is a copy of the C polyhedron `ph`; writes a handle for the newly created polyhedron at address `pph`.
- `int ppl_new_NNC_Polyhedron_from_C_Polyhedron_with_complexity` (`ppl_Polyhedron_t *pph`, `ppl_const_Polyhedron_t ph`, `int complexity`)
Builds an NNC polyhedron that approximates C_Polyhedron `ph`, using an algorithm whose complexity does not exceed `complexity`; writes a handle for the newly created polyhedron at address `pph`.

Destructor for (C or NNC) Polyhedra

- `int ppl_delete_Polyhedron` (`ppl_const_Polyhedron_t ph`)
Invalidates the handle `ph`: this makes sure the corresponding resources will eventually be released.

Functions that Do Not Modify the Polyhedron

- `int ppl_Polyhedron_space_dimension` (`ppl_const_Polyhedron_t ph`, `ppl_dimension_type *m`)
Writes to `m` the dimension of the vector space enclosing `ph`.
- `int ppl_Polyhedron_affine_dimension` (`ppl_const_Polyhedron_t ph`, `ppl_dimension_type *m`)
Writes to `m` the affine dimension of `ph` (not to be confused with the dimension of its enclosing vector space) or 0, if `ph` is empty.
- `int ppl_Polyhedron_relation_with_Constraint` (`ppl_const_Polyhedron_t ph`, `ppl_const_Constraint_t c`)
Checks the relation between the polyhedron `ph` and the constraint `c`.
- `int ppl_Polyhedron_relation_with_Generator` (`ppl_const_Polyhedron_t ph`, `ppl_const_Generator_t g`)
Checks the relation between the polyhedron `ph` and the generator `g`.
- `int ppl_Polyhedron_get_constraints` (`ppl_const_Polyhedron_t ph`, `ppl_const_System_t *pcs`)
Writes a const handle to the constraint system defining the polyhedron `ph` at address `pcs`.
- `int ppl_Polyhedron_get_congruences` (`ppl_const_Polyhedron_t ph`, `ppl_const_Congruence_System_t *pcs`)
Writes at address `pcs` a const handle to a system of congruences approximating the polyhedron `ph`.

- int [ppl_Polyhedron_get_minimized_constraints](#) (ppl_const_Polyhedron_t ph, ppl_const_Constraint_System_t *pcs)
Writes a const handle to the minimized constraint system defining the polyhedron *ph* at address *pcs*.
- int [ppl_Polyhedron_get_minimized_congruences](#) (ppl_const_Polyhedron_t ph, ppl_const_Congruence_System_t *pcs)
Writes at address *pcs* a const handle to a system of minimized congruences approximating the polyhedron *ph*.
- int [ppl_Polyhedron_is_empty](#) (ppl_const_Polyhedron_t ph)
Returns a positive integer if *ph* is empty; returns 0 if *ph* is not empty.
- int [ppl_Polyhedron_is_universe](#) (ppl_const_Polyhedron_t ph)
Returns a positive integer if *ph* is a universe polyhedron; returns 0 if it is not.
- int [ppl_Polyhedron_is_bounded](#) (ppl_const_Polyhedron_t ph)
Returns a positive integer if *ph* is bounded; returns 0 if *ph* is unbounded.
- int [ppl_Polyhedron_contains_integer_point](#) (ppl_const_Polyhedron_t ph)
Returns a positive integer if *ph* contains at least one integer point; returns 0 otherwise.
- int [ppl_Polyhedron_is_topologically_closed](#) (ppl_const_Polyhedron_t ph)
Returns a positive integer if *ph* is topologically closed; returns 0 if *ph* is not topologically closed.
- int [ppl_Polyhedron_is_discrete](#) (ppl_const_Polyhedron_t ph)
Returns a positive integer if *ph* is a discrete set; returns 0 if *ph* is not a discrete set.
- int [ppl_Polyhedron_constrains](#) (ppl_Polyhedron_t ph, ppl_dimension_type var)
Returns a positive integer if *ph* constrains *var*; returns 0 if *ph* does not constrain *var*.
- int [ppl_Polyhedron_bounds_from_above](#) (ppl_const_Polyhedron_t ph, ppl_const_Linear_Expression_t le)
Returns a positive integer if *le* is bounded from above in *ph*; returns 0 otherwise.
- int [ppl_Polyhedron_bounds_from_below](#) (ppl_const_Polyhedron_t ph, ppl_const_Linear_Expression_t le)
Returns a positive integer if *le* is bounded from below in *ph*; returns 0 otherwise.
- int [ppl_Polyhedron_maximize_with_point](#) (ppl_const_Polyhedron_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t sup_n, ppl_Coefficient_t sup_d, int *pmaximum, ppl_Generator_t point)
Returns a positive integer if *ph* is not empty and *le* is bounded from above in *ph*, in which case the supremum value and a point where *le* reaches it are computed.
- int [ppl_Polyhedron_maximize](#) (ppl_const_Polyhedron_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t sup_n, ppl_Coefficient_t sup_d, int *pmaximum)
The same as *ppl_Polyhedron_maximize_with_point*, but without the output argument for the location where the supremum value is reached.
- int [ppl_Polyhedron_minimize_with_point](#) (ppl_const_Polyhedron_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t inf_n, ppl_Coefficient_t inf_d, int *pminimum, ppl_Generator_t point)
Returns a positive integer if *ph* is not empty and *le* is bounded from below in *ph*, in which case the infimum value and a point where *le* reaches it are computed.

- `int ppl_Polyhedron_minimize_with_point` (`ppl_const_Polyhedron_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t inf_n`, `ppl_Coefficient_t inf_d`, `int *pminimum`)
The same as `ppl_Polyhedron_minimize_with_point`, but without the output argument for the location where the infimum value is reached.
- `int ppl_Polyhedron_contains_Polyhedron` (`ppl_const_Polyhedron_t x`, `ppl_const_Polyhedron_t y`)
Returns a positive integer if x contains or is equal to y ; returns 0 if it does not.
- `int ppl_Polyhedron_strictly_contains_Polyhedron` (`ppl_const_Polyhedron_t x`, `ppl_const_Polyhedron_t y`)
Returns a positive integer if x strictly contains y ; returns 0 if it does not.
- `int ppl_Polyhedron_is_disjoint_from_Polyhedron` (`ppl_const_Polyhedron_t x`, `ppl_const_Polyhedron_t y`)
Returns a positive integer if x and y are disjoint; returns 0 if they are not.
- `int ppl_Polyhedron_equals_Polyhedron` (`ppl_const_Polyhedron_t x`, `ppl_const_Polyhedron_t y`)
Returns a positive integer if x and y are the same polyhedron; returns 0 if they are different.
- `int ppl_Polyhedron_OK` (`ppl_const_Polyhedron_t ph`)
Returns a positive integer if ph is well formed, i.e., if it satisfies all its implementation invariants; returns 0 and perhaps makes some noise if ph is broken. Useful for debugging purposes.
- `int ppl_Polyhedron_external_memory_in_bytes` (`ppl_const_Polyhedron_t ph`, `size_t *sz`)
Writes to sz a lower bound to the size in bytes of the memory managed by ph .
- `int ppl_Polyhedron_total_memory_in_bytes` (`ppl_const_Polyhedron_t ph`, `size_t *sz`)
Writes to sz a lower bound to the size in bytes of the memory managed by ph .

Space Dimension Preserving Functions that May Modify the Polyhedron

- `int ppl_Polyhedron_add_constraint` (`ppl_Polyhedron_t ph`, `ppl_const_Constraint_t c`)
Adds a copy of the constraint c to the system of constraints of ph .
- `int ppl_Polyhedron_add_congruence` (`ppl_Polyhedron_t ph`, `ppl_const_Congruence_t c`)
Adds a copy of the congruence c to polyhedron of ph .
- `int ppl_Polyhedron_add_constraints` (`ppl_Polyhedron_t ph`, `ppl_const_Constraint_System_t cs`)
Adds a copy of the system of constraints cs to the system of constraints of ph .
- `int ppl_Polyhedron_add_congruences` (`ppl_Polyhedron_t ph`, `ppl_const_Congruence_System_t cs`)
Adds a copy of the system of congruences cs to the polyhedron ph .
- `int ppl_Polyhedron_add_recycled_constraints` (`ppl_Polyhedron_t ph`, `ppl_Constraint_System_t cs`)
Adds the system of constraints cs to the system of constraints of ph .
- `int ppl_Polyhedron_add_recycled_congruences` (`ppl_Polyhedron_t ph`, `ppl_Congruence_System_t cs`)
Adds the system of congruences cs to the polyhedron ph .
- `int ppl_Polyhedron_refine_with_constraint` (`ppl_Polyhedron_t ph`, `ppl_const_Constraint_t c`)

Refines ph using constraint c .

- int [ppl_Polyhedron_refine_with_congruence](#) (ppl_Polyhedron_t ph , ppl_const_Congruence_t c)

Refines ph using congruence c .

- int [ppl_Polyhedron_refine_with_constraints](#) (ppl_Polyhedron_t ph , ppl_const_Constraint_System_t cs)

Refines ph using the constraints in cs .

- int [ppl_Polyhedron_refine_with_congruences](#) (ppl_Polyhedron_t ph , ppl_const_Congruence_System_t cs)

Refines ph using the congruences in cs .

- int [ppl_Polyhedron_intersection_assign](#) (ppl_Polyhedron_t x , ppl_const_Polyhedron_t y)

Intersects x with polyhedron y and assigns the result to x .

- int [ppl_Polyhedron_upper_bound_assign](#) (ppl_Polyhedron_t x , ppl_const_Polyhedron_t y)

Assigns to x an upper bound of x and y .

- int [ppl_Polyhedron_difference_assign](#) (ppl_Polyhedron_t x , ppl_const_Polyhedron_t y)

Same as `ppl_Polyhedron_poly_difference_assign(x, y)`.

- int [ppl_Polyhedron_simplify_using_context_assign](#) (ppl_Polyhedron_t x , ppl_const_Polyhedron_t y)

Assigns to x the meet-preserving simplification of x with respect to context y . Returns a positive integer if x and y have a nonempty intersection; returns 0 if they are disjoint.

- int [ppl_Polyhedron_time_elapse_assign](#) (ppl_Polyhedron_t x , ppl_const_Polyhedron_t y)

Assigns to x the time-elapse between the polyhedra x and y .

- int [ppl_Polyhedron_topological_closure_assign](#) (ppl_Polyhedron_t ph)

Assigns to ph its topological closure.

- int [ppl_Polyhedron_unconstrain_space_dimension](#) (ppl_Polyhedron_t ph , ppl_dimension_type var)

Modifies ph by unconstraining the space dimension var .

- int [ppl_Polyhedron_unconstrain_space_dimensions](#) (ppl_Polyhedron_t ph , ppl_dimension_type $ds[]$, size_t n)

Modifies ph by unconstraining the space dimensions that are specified in the first n positions of the array ds . The presence of duplicates in ds is a waste but an innocuous one.

- int [ppl_Polyhedron_affine_image](#) (ppl_Polyhedron_t ph , ppl_dimension_type var , ppl_const_Linear_Expression_t le , ppl_const_Coefficient_t d)

Transforms the polyhedron ph , assigning an affine expression to the specified variable.

- int [ppl_Polyhedron_affine_preimage](#) (ppl_Polyhedron_t ph , ppl_dimension_type var , ppl_const_Linear_Expression_t le , ppl_const_Coefficient_t d)

Transforms the polyhedron ph , substituting an affine expression to the specified variable.

- int [ppl_Polyhedron_bounded_affine_image](#) (ppl_Polyhedron_t ph , ppl_dimension_type var , ppl_const_Linear_Expression_t lb , ppl_const_Linear_Expression_t ub , ppl_const_Coefficient_t d)

Assigns to ph the image of ph with respect to the generalized affine transfer relation $\frac{lb}{d} \leq var' \leq \frac{ub}{d}$.

- `int ppl_Polyhedron_bounded_affine_preimage` (`ppl_Polyhedron_t` `ph`, `ppl_dimension_type` `var`, `ppl_const_Linear_Expression_t` `lb`, `ppl_const_Linear_Expression_t` `ub`, `ppl_const_Coefficient_t` `d`)
Assigns to `ph` the preimage of `ph` with respect to the generalized affine transfer relation $\frac{lb}{d} \leq \text{var}' \leq \frac{ub}{d}$.
- `int ppl_Polyhedron_generalized_affine_image` (`ppl_Polyhedron_t` `ph`, `ppl_dimension_type` `var`, `enum ppl_enum_Constraint_Type` `relysym`, `ppl_const_Linear_Expression_t` `le`, `ppl_const_Coefficient_t` `d`)
Assigns to `ph` the image of `ph` with respect to the generalized affine transfer relation $\text{var}' \bowtie \frac{le}{d}$, where $\bowtie$ is the relation symbol encoded by `relysym`.
- `int ppl_Polyhedron_generalized_affine_preimage` (`ppl_Polyhedron_t` `ph`, `ppl_dimension_type` `var`, `enum ppl_enum_Constraint_Type` `relysym`, `ppl_const_Linear_Expression_t` `le`, `ppl_const_Coefficient_t` `d`)
Assigns to `ph` the preimage of `ph` with respect to the generalized affine transfer relation $\text{var}' \bowtie \frac{le}{d}$, where $\bowtie$ is the relation symbol encoded by `relysym`.
- `int ppl_Polyhedron_generalized_affine_image_lhs_rhs` (`ppl_Polyhedron_t` `ph`, `ppl_const_Linear_Expression_t` `lhs`, `enum ppl_enum_Constraint_Type` `relysym`, `ppl_const_Linear_Expression_t` `rhs`)
Assigns to `ph` the image of `ph` with respect to the generalized affine transfer relation $\text{lhs}' \bowtie \text{rhs}$, where $\bowtie$ is the relation symbol encoded by `relysym`.
- `int ppl_Polyhedron_generalized_affine_preimage_lhs_rhs` (`ppl_Polyhedron_t` `ph`, `ppl_const_Linear_Expression_t` `lhs`, `enum ppl_enum_Constraint_Type` `relysym`, `ppl_const_Linear_Expression_t` `rhs`)
Assigns to `ph` the preimage of `ph` with respect to the generalized affine transfer relation $\text{lhs}' \bowtie \text{rhs}$, where $\bowtie$ is the relation symbol encoded by `relysym`.

Functions that May Modify the Dimension of the Vector Space

- `int ppl_Polyhedron_concatenate_assign` (`ppl_Polyhedron_t` `x`, `ppl_const_Polyhedron_t` `y`)
Seeing a polyhedron as a set of tuples (its points), assigns to `x` all the tuples that can be obtained by concatenating, in the order given, a tuple of `x` with a tuple of `y`.
- `int ppl_Polyhedron_add_space_dimensions_and_embed` (`ppl_Polyhedron_t` `ph`, `ppl_dimension_type` `d`)
Adds `d` new dimensions to the space enclosing the polyhedron `ph` and to `ph` itself.
- `int ppl_Polyhedron_add_space_dimensions_and_project` (`ppl_Polyhedron_t` `ph`, `ppl_dimension_type` `d`)
Adds `d` new dimensions to the space enclosing the polyhedron `ph`.
- `int ppl_Polyhedron_remove_space_dimensions` (`ppl_Polyhedron_t` `ph`, `ppl_dimension_type` `ds`[], `size_t` `n`)
Removes from the vector space enclosing `ph` the space dimensions that are specified in first `n` positions of the array `ds`. The presence of duplicates in `ds` is a waste but an innocuous one.
- `int ppl_Polyhedron_remove_higher_space_dimensions` (`ppl_Polyhedron_t` `ph`, `ppl_dimension_type` `d`)
Removes the higher dimensions from the vector space enclosing `ph` so that, upon successful return, the new space dimension is `d`.
- `int ppl_Polyhedron_map_space_dimensions` (`ppl_Polyhedron_t` `ph`, `ppl_dimension_type` `maps`[], `size_t` `n`)

Remaps the dimensions of the vector space according to a partial function. This function is specified by means of the `maps` array, which has `n` entries.

- `int ppl_Polyhedron_expand_space_dimension` (`ppl_Polyhedron_t` `ph`, `ppl_dimension_type` `d`, `ppl_dimension_type` `m`)
Expands the `d`-th dimension of the vector space enclosing `ph` to `m` new space dimensions.
- `int ppl_Polyhedron_fold_space_dimensions` (`ppl_Polyhedron_t` `ph`, `ppl_dimension_type` `ds`[], `size_t` `n`, `ppl_dimension_type` `d`)
Modifies `ph` by folding the space dimensions contained in the first `n` positions of the array `ds` into dimension `d`. The presence of duplicates in `ds` is a waste but an innocuous one.

Input/Output Functions

- `int ppl_io_print_Polyhedron` (`ppl_const_Polyhedron_t` `x`)
Prints `x` to `stdout`.
- `int ppl_io_fprint_Polyhedron` (`FILE *stream`, `ppl_const_Polyhedron_t` `x`)
Prints `x` to the given output `stream`.
- `int ppl_io_asprint_Polyhedron` (`char **strp`, `ppl_const_Polyhedron_t` `x`)
Prints `x` to a malloc-allocated string, a pointer to which is returned via `strp`.
- `int ppl_Polyhedron_ascii_dump` (`ppl_const_Polyhedron_t` `x`, `FILE *stream`)
Dumps an ascii representation of `x` on `stream`.
- `int ppl_Polyhedron_ascii_load` (`ppl_Polyhedron_t` `x`, `FILE *stream`)
Loads an ascii representation of `x` from `stream`.

Ad Hoc Functions for (C or NNC) Polyhedra

The functions listed here below, being specific of the polyhedron domains, do not have a correspondence in other semantic geometric descriptions.

- `int ppl_new_C_Polyhedron_from_Generator_System` (`ppl_Polyhedron_t` `*pph`, `ppl_const_Generator_System_t` `gs`)
Builds a new C polyhedron from the system of generators `gs` and writes a handle for the newly created polyhedron at address `pph`.
- `int ppl_new_C_Polyhedron_recycle_Generator_System` (`ppl_Polyhedron_t` `*pph`, `ppl_Generator_System_t` `gs`)
Builds a new C polyhedron recycling the system of generators `gs` and writes a handle for the newly created polyhedron at address `pph`.
- `int ppl_new_NNC_Polyhedron_from_Generator_System` (`ppl_Polyhedron_t` `*pph`, `ppl_const_Generator_System_t` `gs`)
Builds a new NNC polyhedron from the system of generators `gs` and writes a handle for the newly created polyhedron at address `pph`.
- `int ppl_new_NNC_Polyhedron_recycle_Generator_System` (`ppl_Polyhedron_t` `*pph`, `ppl_Generator_System_t` `gs`)
Builds a new NNC polyhedron recycling the system of generators `gs` and writes a handle for the newly created polyhedron at address `pph`.

- `int ppl_Polyhedron_get_generators` (`ppl_const_Polyhedron_t ph`, `ppl_const_Generator_System_t *pgs`)
Writes a const handle to the generator system defining the polyhedron `ph` at address `pgs`.
- `int ppl_Polyhedron_get_minimized_generators` (`ppl_const_Polyhedron_t ph`, `ppl_const_Generator_System_t *pgs`)
Writes a const handle to the minimized generator system defining the polyhedron `ph` at address `pgs`.
- `int ppl_Polyhedron_add_generator` (`ppl_Polyhedron_t ph`, `ppl_const_Generator_t g`)
Adds a copy of the generator `g` to the system of generators of `ph`.
- `int ppl_Polyhedron_add_generators` (`ppl_Polyhedron_t ph`, `ppl_const_Generator_System_t gs`)
Adds a copy of the system of generators `gs` to the system of generators of `ph`.
- `int ppl_Polyhedron_add_recycled_generators` (`ppl_Polyhedron_t ph`, `ppl_Generator_System_t gs`)
Adds the system of generators `gs` to the system of generators of `ph`.
- `int ppl_Polyhedron_poly_hull_assign` (`ppl_Polyhedron_t x`, `ppl_const_Polyhedron_t y`)
Assigns to `x` the poly-hull of `x` and `y`.
- `int ppl_Polyhedron_poly_difference_assign` (`ppl_Polyhedron_t x`, `ppl_const_Polyhedron_t y`)
Assigns to `x` the poly-difference of `x` and `y`.
- `int wrap_assign` (`ppl_Polyhedron_t ph`, `ppl_dimension_type ds[]`, `size_t n`, `ppl_enum_Bounded_Integer_Type_Width w`, `ppl_enum_Bounded_Integer_Type_Representation r`, `ppl_enum_Bounded_Integer_Type_Overflow o`, `const ppl_const_Constraint_System_t *pcs`, `unsigned complexity_threshold`, `int wrap_individually`)
Assigns to `ph` the polyhedron obtained from `ph` by "wrapping" the vector space defined by the first `n` space dimensions in `ds[]`.
- `int ppl_Polyhedron_BHRZ03_widening_assign_with_tokens` (`ppl_Polyhedron_t x`, `ppl_const_Polyhedron_t y`, `unsigned *tp`)
If the polyhedron `y` is contained in (or equal to) the polyhedron `x`, assigns to `x` the BHRZ03-widening of `x` and `y`. If `tp` is not the null pointer, the widening with tokens delay technique is applied with `*tp` available tokens.
- `int ppl_Polyhedron_H79_widening_assign_with_tokens` (`ppl_Polyhedron_t x`, `ppl_const_Polyhedron_t y`, `unsigned *tp`)
If the polyhedron `y` is contained in (or equal to) the polyhedron `x`, assigns to `x` the H79-widening of `x` and `y`. If `tp` is not the null pointer, the widening with tokens delay technique is applied with `*tp` available tokens.
- `int ppl_Polyhedron_BHRZ03_widening_assign` (`ppl_Polyhedron_t x`, `ppl_const_Polyhedron_t y`)
If the polyhedron `y` is contained in (or equal to) the polyhedron `x`, assigns to `x` the BHRZ03-widening of `x` and `y`.
- `int ppl_Polyhedron_H79_widening_assign` (`ppl_Polyhedron_t x`, `ppl_const_Polyhedron_t y`)
If the polyhedron `y` is contained in (or equal to) the polyhedron `x`, assigns to `x` the H79-widening of `x` and `y`.
- `int ppl_Polyhedron_limited_BHRZ03_extrapolation_assign_with_tokens` (`ppl_Polyhedron_t x`, `ppl_const_Polyhedron_t y`, `ppl_const_Constraint_System_t cs`, `unsigned *tp`)
If the polyhedron `y` is contained in (or equal to) the polyhedron `x`, assigns to `x` the BHRZ03-widening of `x` and `y` intersected with the constraints in `cs` that are satisfied by all the points of `x`. If `tp` is not the null pointer, the widening with tokens delay technique is applied with `*tp` available tokens.

- `int ppl_Polyhedron_limited_H79_extrapolation_assign_with_tokens` (`ppl_Polyhedron_t x`, `ppl_const_Polyhedron_t y`, `ppl_const_Constraint_System_t cs`, `unsigned *tp`)
If the polyhedron y is contained in (or equal to) the polyhedron x , assigns to x the H79-widening of x and y intersected with the constraints in cs that are satisfied by all the points of x . If tp is not the null pointer, the widening with tokens delay technique is applied with $*tp$ available tokens.
- `int ppl_Polyhedron_limited_BHRZ03_extrapolation_assign` (`ppl_Polyhedron_t x`, `ppl_const_Polyhedron_t y`, `ppl_const_Constraint_System_t cs`)
If the polyhedron y is contained in (or equal to) the polyhedron x , assigns to x the BHRZ03-widening of x and y intersected with the constraints in cs that are satisfied by all the points of x .
- `int ppl_Polyhedron_limited_H79_extrapolation_assign` (`ppl_Polyhedron_t x`, `ppl_const_Polyhedron_t y`, `ppl_const_Constraint_System_t cs`)
If the polyhedron y is contained in (or equal to) the polyhedron x , assigns to x the H79-widening of x and y intersected with the constraints in cs that are satisfied by all the points of x .
- `int ppl_Polyhedron_bounded_BHRZ03_extrapolation_assign_with_tokens` (`ppl_Polyhedron_t x`, `ppl_const_Polyhedron_t y`, `ppl_const_Constraint_System_t cs`, `unsigned *tp`)
If the polyhedron y is contained in (or equal to) the polyhedron x , assigns to x the BHRZ03-widening of x and y intersected with the constraints in cs that are satisfied by all the points of x , further intersected with all the constraints of the form $\pm v \leq r$ and $\pm v < r$, with $r \in \mathbb{Q}$, that are satisfied by all the points of x . If tp is not the null pointer, the widening with tokens delay technique is applied with $*tp$ available tokens.
- `int ppl_Polyhedron_bounded_H79_extrapolation_assign_with_tokens` (`ppl_Polyhedron_t x`, `ppl_const_Polyhedron_t y`, `ppl_const_Constraint_System_t cs`, `unsigned *tp`)
If the polyhedron y is contained in (or equal to) the polyhedron x , assigns to x the H79-widening of x and y intersected with the constraints in cs that are satisfied by all the points of x , further intersected with all the constraints of the form $\pm v \leq r$ and $\pm v < r$, with $r \in \mathbb{Q}$, that are satisfied by all the points of x . If tp is not the null pointer, the widening with tokens delay technique is applied with $*tp$ available tokens.
- `int ppl_Polyhedron_bounded_BHRZ03_extrapolation_assign` (`ppl_Polyhedron_t x`, `ppl_const_Polyhedron_t y`, `ppl_const_Constraint_System_t cs`)
If the polyhedron y is contained in (or equal to) the polyhedron x , assigns to x the BHRZ03-widening of x and y intersected with the constraints in cs that are satisfied by all the points of x , further intersected with all the constraints of the form $\pm v \leq r$ and $\pm v < r$, with $r \in \mathbb{Q}$, that are satisfied by all the points of x .
- `int ppl_Polyhedron_bounded_H79_extrapolation_assign` (`ppl_Polyhedron_t x`, `ppl_const_Polyhedron_t y`, `ppl_const_Constraint_System_t cs`)
If the polyhedron y is contained in (or equal to) the polyhedron x , assigns to x the H79-widening of x and y intersected with the constraints in cs that are satisfied by all the points of x , further intersected with all the constraints of the form $\pm v \leq r$ and $\pm v < r$, with $r \in \mathbb{Q}$, that are satisfied by all the points of x .

10.156.1 Detailed Description

Types and functions for the domains of C and NNC convex polyhedra. Types and functions for [ppl_Polyhedron_tag](#).

The types and functions for convex polyhedra provide a single interface for accessing both topologically closed (C) and not necessarily closed (NNC) convex polyhedra. The distinction between C and NNC

polyhedra need only be explicitly stated when *creating* or *assigning* a polyhedron object, by means of one of the functions `ppl_new_*` and `ppl_assign_*`.

Having a single datatype does not mean that C and NNC polyhedra can be freely interchanged: as specified in the main manual, most library functions require their arguments to be topologically and/or space-dimension compatible.

10.156.2 Friends And Related Function Documentation

10.156.2.1 `int ppl_all_affine_ranking_functions_MS_C_Polyhedron (ppl_const_Polyhedron_t pset, ppl_Polyhedron_t ph)` [**related**]

10.156.2.2 `int ppl_all_affine_ranking_functions_MS_C_Polyhedron_2 (ppl_const_Polyhedron_t pset_before, ppl_const_Polyhedron_t pset_after, ppl_Polyhedron_t ph)` [**related**]

10.156.2.3 `int ppl_all_affine_ranking_functions_MS_NNC_Polyhedron (ppl_const_Polyhedron_t pset, ppl_Polyhedron_t ph)` [**related**]

10.156.2.4 `int ppl_all_affine_ranking_functions_MS_NNC_Polyhedron_2 (ppl_const_Polyhedron_t pset_before, ppl_const_Polyhedron_t pset_after, ppl_Polyhedron_t ph)` [**related**]

10.156.2.5 `int ppl_all_affine_ranking_functions_PR_C_Polyhedron (ppl_const_Polyhedron_t pset, ppl_Polyhedron_t ph)` [**related**]

10.156.2.6 `int ppl_all_affine_ranking_functions_PR_C_Polyhedron_2 (ppl_const_Polyhedron_t pset_before, ppl_const_Polyhedron_t pset_after, ppl_Polyhedron_t ph)` [**related**]

10.156.2.7 `int ppl_all_affine_ranking_functions_PR_NNC_Polyhedron (ppl_const_Polyhedron_t pset, ppl_Polyhedron_t ph)` [**related**]

10.156.2.8 `int ppl_all_affine_ranking_functions_PR_NNC_Polyhedron_2 (ppl_const_Polyhedron_t pset_before, ppl_const_Polyhedron_t pset_after, ppl_Polyhedron_t ph)` **[related]**

10.156.2.9 `int ppl_assign_C_Polyhedron_from_C_Polyhedron (ppl_Polyhedron_t dst, ppl_const_Polyhedron_t src)` **[related]**

Assigns a copy of the C polyhedron `src` to the C polyhedron `dst`.

10.156.2.10 `int ppl_assign_NNC_Polyhedron_from_NNC_Polyhedron (ppl_Polyhedron_t dst, ppl_const_Polyhedron_t src)` **[related]**

Assigns a copy of the NNC polyhedron `src` to the NNC polyhedron `dst`.

10.156.2.11 `int ppl_delete_Polyhedron (ppl_const_Polyhedron_t ph)` **[related]**

Invalidates the handle `ph`: this makes sure the corresponding resources will eventually be released.

10.156.2.12 `int ppl_io_asprint_Polyhedron (char ** strp, ppl_const_Polyhedron_t x)` **[related]**

Prints `x` to a malloc-allocated string, a pointer to which is returned via `strp`.

10.156.2.13 `int ppl_io_fprint_Polyhedron (FILE * stream, ppl_const_Polyhedron_t x)` **[related]**

Prints `x` to the given output `stream`.

10.156.2.14 `int ppl_io_print_Polyhedron (ppl_const_Polyhedron_t x)` **[related]**

Prints `x` to `stdout`.

10.156.2.15 `int ppl_new_C_Polyhedron_from_BD_Shape_double (ppl_Polyhedron_t * pph, ppl_const_BD_Shape_double_t ph)` **[related]**

- 10.156.2.16 `int ppl_new_C_Polyhedron_from_BD_Shape_double_with_complexity`
(`ppl_Polyhedron_t * pph`, `ppl_const_BD_Shape_double_t ph`, `int complexity`)
[related]
- 10.156.2.17 `int ppl_new_C_Polyhedron_from_BD_Shape_float` (`ppl_Polyhedron_t * pph`,
`ppl_const_BD_Shape_float_t ph`) [related]
- 10.156.2.18 `int ppl_new_C_Polyhedron_from_BD_Shape_float_with_complexity`
(`ppl_Polyhedron_t * pph`, `ppl_const_BD_Shape_float_t ph`, `int complexity`)
[related]
- 10.156.2.19 `int ppl_new_C_Polyhedron_from_BD_Shape_int16_t` (`ppl_Polyhedron_t * pph`,
`ppl_const_BD_Shape_int16_t_t ph`) [related]
- 10.156.2.20 `int ppl_new_C_Polyhedron_from_BD_Shape_int16_t_with_complexity`
(`ppl_Polyhedron_t * pph`, `ppl_const_BD_Shape_int16_t_t ph`, `int complexity`)
[related]
- 10.156.2.21 `int ppl_new_C_Polyhedron_from_BD_Shape_int32_t` (`ppl_Polyhedron_t * pph`,
`ppl_const_BD_Shape_int32_t_t ph`) [related]
- 10.156.2.22 `int ppl_new_C_Polyhedron_from_BD_Shape_int32_t_with_complexity`
(`ppl_Polyhedron_t * pph`, `ppl_const_BD_Shape_int32_t_t ph`, `int complexity`)
[related]
- 10.156.2.23 `int ppl_new_C_Polyhedron_from_BD_Shape_int64_t` (`ppl_Polyhedron_t * pph`,
`ppl_const_BD_Shape_int64_t_t ph`) [related]

- 10.156.2.24 `int ppl_new_C_Polyhedron_from_BD_Shape_int64_t_with_complexity`
(`ppl_Polyhedron_t * pph`, `ppl_const_BD_Shape_int64_t_t ph`, `int complexity`)
[related]
- 10.156.2.25 `int ppl_new_C_Polyhedron_from_BD_Shape_int8_t` (`ppl_Polyhedron_t * pph`,
`ppl_const_BD_Shape_int8_t_t ph`) [related]
- 10.156.2.26 `int ppl_new_C_Polyhedron_from_BD_Shape_int8_t_with_complexity`
(`ppl_Polyhedron_t * pph`, `ppl_const_BD_Shape_int8_t_t ph`, `int complexity`)
[related]
- 10.156.2.27 `int ppl_new_C_Polyhedron_from_BD_Shape_long_double` (`ppl_Polyhedron_t * pph`,
`ppl_const_BD_Shape_long_double_t_t ph`) [related]
- 10.156.2.28 `int ppl_new_C_Polyhedron_from_BD_Shape_long_double_with_complexity`
(`ppl_Polyhedron_t * pph`, `ppl_const_BD_Shape_long_double_t_t ph`, `int complexity`)
[related]
- 10.156.2.29 `int ppl_new_C_Polyhedron_from_BD_Shape_mpq_class` (`ppl_Polyhedron_t * pph`,
`ppl_const_BD_Shape_mpq_class_t_t ph`) [related]
- 10.156.2.30 `int ppl_new_C_Polyhedron_from_BD_Shape_mpq_class_with_complexity`
(`ppl_Polyhedron_t * pph`, `ppl_const_BD_Shape_mpq_class_t_t ph`, `int complexity`)
[related]
- 10.156.2.31 `int ppl_new_C_Polyhedron_from_BD_Shape_mpz_class` (`ppl_Polyhedron_t * pph`,
`ppl_const_BD_Shape_mpz_class_t_t ph`) [related]

10.156.2.32 `int ppl_new_C_Polyhedron_from_BD_Shape_mpz_class_with_complexity`
`(ppl_Polyhedron_t * pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)`
`[related]`

10.156.2.33 `int ppl_new_C_Polyhedron_from_C_Polyhedron` (`ppl_Polyhedron_t * pph,`
`ppl_const_Polyhedron_t ph`) `[related]`

Builds a C polyhedron that is a copy of *ph*; writes a handle for the newly created polyhedron at address *pph*.

10.156.2.34 `int ppl_new_C_Polyhedron_from_C_Polyhedron_with_complexity` (`ppl_Polyhedron_t`
`* pph, ppl_const_Polyhedron_t ph, int complexity`) `[related]`

Builds a C polyhedron that is a copy of *ph*; writes a handle for the newly created polyhedron at address *pph*.

Note

The complexity argument is ignored.

10.156.2.35 `int ppl_new_C_Polyhedron_from_Congruence_System` (`ppl_Polyhedron_t * pph,`
`ppl_const_Congruence_System_t cs`) `[related]`

Builds a new C polyhedron from the system of congruences *cs* and writes a handle for the newly created polyhedron at address *pph*.

The new polyhedron will inherit the space dimension of *cs*.

10.156.2.36 `int ppl_new_C_Polyhedron_from_Constraint_System` (`ppl_Polyhedron_t * pph,`
`ppl_const_Constraint_System_t cs`) `[related]`

Builds a new C polyhedron from the system of constraints *cs* and writes a handle for the newly created polyhedron at address *pph*.

The new polyhedron will inherit the space dimension of *cs*.

10.156.2.37 `int ppl_new_C_Polyhedron_from_Double_Box` (`ppl_Polyhedron_t * pph,`
`ppl_const_Double_Box_t ph`) `[related]`

10.156.2.38 `int ppl_new_C_Polyhedron_from_Double_Box_with_complexity (ppl_Polyhedron_t * pph, ppl_const_Double_Box_t ph, int complexity)` [**related**]

10.156.2.39 `int ppl_new_C_Polyhedron_from_Float_Box (ppl_Polyhedron_t * pph, ppl_const_Float_Box_t ph)` [**related**]

10.156.2.40 `int ppl_new_C_Polyhedron_from_Float_Box_with_complexity (ppl_Polyhedron_t * pph, ppl_const_Float_Box_t ph, int complexity)` [**related**]

10.156.2.41 `int ppl_new_C_Polyhedron_from_Generator_System (ppl_Polyhedron_t * pph, ppl_const_Generator_System_t gs)` [**related**]

Builds a new C polyhedron from the system of generators *gs* and writes a handle for the newly created polyhedron at address *pph*.

The new polyhedron will inherit the space dimension of *gs*.

10.156.2.42 `int ppl_new_C_Polyhedron_from_Grid (ppl_Polyhedron_t * pph, ppl_const_Grid_t ph)` [**related**]

10.156.2.43 `int ppl_new_C_Polyhedron_from_Grid_with_complexity (ppl_Polyhedron_t * pph, ppl_const_Grid_t ph, int complexity)` [**related**]

10.156.2.44 `int ppl_new_C_Polyhedron_from_Int16_Box (ppl_Polyhedron_t * pph, ppl_const_Int16_Box_t ph)` [**related**]

10.156.2.45 `int ppl_new_C_Polyhedron_from_Int16_Box_with_complexity (ppl_Polyhedron_t * pph, ppl_const_Int16_Box_t ph, int complexity)` [**related**]

10.156.2.46 `int ppl_new_C_Polyhedron_from_Int32_Box (ppl_Polyhedron_t * pph, ppl_const_Int32_Box_t ph)` [**related**]

10.156.2.47 `int ppl_new_C_Polyhedron_from_Int32_Box_with_complexity (ppl_Polyhedron_t * pph, ppl_const_Int32_Box_t ph, int complexity)` [**related**]

10.156.2.48 `int ppl_new_C_Polyhedron_from_Int64_Box (ppl_Polyhedron_t * pph, ppl_const_Int64_Box_t ph)` [**related**]

10.156.2.49 `int ppl_new_C_Polyhedron_from_Int64_Box_with_complexity (ppl_Polyhedron_t * pph, ppl_const_Int64_Box_t ph, int complexity)` [**related**]

10.156.2.50 `int ppl_new_C_Polyhedron_from_Int8_Box (ppl_Polyhedron_t * pph, ppl_const_Int8_Box_t ph)` [**related**]

10.156.2.51 `int ppl_new_C_Polyhedron_from_Int8_Box_with_complexity (ppl_Polyhedron_t * pph, ppl_const_Int8_Box_t ph, int complexity)` [**related**]

10.156.2.52 `int ppl_new_C_Polyhedron_from_Long_Double_Box (ppl_Polyhedron_t * pph, ppl_const_Long_Double_Box_t ph)` [**related**]

10.156.2.53 `int ppl_new_C_Polyhedron_from_Long_Double_Box_with_complexity (ppl_Polyhedron_t * pph, ppl_const_Long_Double_Box_t ph, int complexity)` [**related**]

10.156.2.54 `int ppl_new_C_Polyhedron_from_NNC_Polyhedron (ppl_Polyhedron_t * pph, ppl_const_Polyhedron_t ph)` [**related**]

Builds a C polyhedron that is a copy of the topological closure of the NNC polyhedron *ph*; writes a handle for the newly created polyhedron at address *pph*.

10.156.2.55 `int ppl_new_C_Polyhedron_from_NNC_Polyhedron_with_complexity (ppl_Polyhedron_t * pph, ppl_const_Polyhedron_t ph, int complexity)` [**related**]

Builds a C polyhedron that approximates NNC_Polyhedron *ph*, using an algorithm whose complexity does not exceed *complexity*; writes a handle for the newly created polyhedron at address *pph*.

Note

The *complexity* argument, which can take values `PPL_COMPLEXITY_CLASS_POLYNOMIAL`, `PPL_COMPLEXITY_CLASS_SIMPLEX` and `PPL_COMPLEXITY_CLASS_ANY`, is ignored since the exact constructor has polynomial complexity.

10.156.2.56 `int ppl_new_C_Polyhedron_from_Octagonal_Shape_double (ppl_Polyhedron_t * pph, ppl_const_Octagonal_Shape_double_t ph)` [**related**]

10.156.2.57 `int ppl_new_C_Polyhedron_from_Octagonal_Shape_double_with_complexity (ppl_Polyhedron_t * pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)` [**related**]

10.156.2.58 `int ppl_new_C_Polyhedron_from_Octagonal_Shape_float (ppl_Polyhedron_t * pph, ppl_const_Octagonal_Shape_float_t ph)` [**related**]

10.156.2.59 `int ppl_new_C_Polyhedron_from_Octagonal_Shape_float_with_complexity (ppl_Polyhedron_t * pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)` [**related**]

10.156.2.60 `int ppl_new_C_Polyhedron_from_Octagonal_Shape_int16_t (ppl_Polyhedron_t * pph, ppl_const_Octagonal_Shape_int16_t_t ph)` [**related**]

10.156.2.61 `int ppl_new_C_Polyhedron_from_Octagonal_Shape_int16_t_with_complexity (ppl_Polyhedron_t * pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)` [**related**]

10.156.2.62 `int ppl_new_C_Polyhedron_from_Octagonal_Shape_int32_t (ppl_Polyhedron_t * pph, ppl_const_Octagonal_Shape_int32_t_t ph)` [**related**]

- 10.156.2.63 `int ppl_new_C_Polyhedron_from_Octagonal_Shape_int32_t_with_complexity`
(`ppl_Polyhedron_t * pph`, `ppl_const_Octagonal_Shape_int32_t_t ph`, `int complexity`)
[related]
- 10.156.2.64 `int ppl_new_C_Polyhedron_from_Octagonal_Shape_int64_t` (`ppl_Polyhedron_t *`
`pph`, `ppl_const_Octagonal_Shape_int64_t_t ph`) [related]
- 10.156.2.65 `int ppl_new_C_Polyhedron_from_Octagonal_Shape_int64_t_with_complexity`
(`ppl_Polyhedron_t * pph`, `ppl_const_Octagonal_Shape_int64_t_t ph`, `int complexity`)
[related]
- 10.156.2.66 `int ppl_new_C_Polyhedron_from_Octagonal_Shape_int8_t` (`ppl_Polyhedron_t * pph`,
`ppl_const_Octagonal_Shape_int8_t_t ph`) [related]
- 10.156.2.67 `int ppl_new_C_Polyhedron_from_Octagonal_Shape_int8_t_with_complexity`
(`ppl_Polyhedron_t * pph`, `ppl_const_Octagonal_Shape_int8_t_t ph`, `int complexity`)
[related]
- 10.156.2.68 `int ppl_new_C_Polyhedron_from_Octagonal_Shape_long_double` (`ppl_Polyhedron_t *`
`* pph`, `ppl_const_Octagonal_Shape_long_double_t_t ph`) [related]
- 10.156.2.69 `int ppl_new_C_Polyhedron_from_Octagonal_Shape_long_double_with_complexity`
(`ppl_Polyhedron_t * pph`, `ppl_const_Octagonal_Shape_long_double_t_t ph`, `int`
`complexity`) [related]
- 10.156.2.70 `int ppl_new_C_Polyhedron_from_Octagonal_Shape_mpq_class` (`ppl_Polyhedron_t *`
`pph`, `ppl_const_Octagonal_Shape_mpq_class_t_t ph`) [related]

- 10.156.2.71** `int ppl_new_C_Polyhedron_from_Octagonal_Shape_mpq_class_with_complexity (ppl_Polyhedron_t * pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)` [**related**]
- 10.156.2.72** `int ppl_new_C_Polyhedron_from_Octagonal_Shape_mpz_class (ppl_Polyhedron_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph)` [**related**]
- 10.156.2.73** `int ppl_new_C_Polyhedron_from_Octagonal_Shape_mpz_class_with_complexity (ppl_Polyhedron_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)` [**related**]
- 10.156.2.74** `int ppl_new_C_Polyhedron_from_Rational_Box (ppl_Polyhedron_t * pph, ppl_const_Rational_Box_t ph)` [**related**]
- 10.156.2.75** `int ppl_new_C_Polyhedron_from_Rational_Box_with_complexity (ppl_Polyhedron_t * pph, ppl_const_Rational_Box_t ph, int complexity)` [**related**]
- 10.156.2.76** `int ppl_new_C_Polyhedron_from_space_dimension (ppl_Polyhedron_t * pph, ppl_dimension_type d, int empty)` [**related**]
- Builds a C polyhedron of dimension *d* and writes an handle to it at address *pph*. If *empty* is different from zero, the newly created polyhedron will be empty; otherwise, it will be a universe polyhedron.
- 10.156.2.77** `int ppl_new_C_Polyhedron_from_Uint16_Box (ppl_Polyhedron_t * pph, ppl_const_Uint16_Box_t ph)` [**related**]
- 10.156.2.78** `int ppl_new_C_Polyhedron_from_Uint16_Box_with_complexity (ppl_Polyhedron_t * pph, ppl_const_Uint16_Box_t ph, int complexity)` [**related**]
- 10.156.2.79** `int ppl_new_C_Polyhedron_from_Uint32_Box (ppl_Polyhedron_t * pph, ppl_const_Uint32_Box_t ph)` [**related**]

- 10.156.2.80 `int ppl_new_C_Polyhedron_from_Uint32_Box_with_complexity (ppl_Polyhedron_t * pph, ppl_const_Uint32_Box_t ph, int complexity) [related]`

- 10.156.2.81 `int ppl_new_C_Polyhedron_from_Uint64_Box (ppl_Polyhedron_t * pph, ppl_const_Uint64_Box_t ph) [related]`

- 10.156.2.82 `int ppl_new_C_Polyhedron_from_Uint64_Box_with_complexity (ppl_Polyhedron_t * pph, ppl_const_Uint64_Box_t ph, int complexity) [related]`

- 10.156.2.83 `int ppl_new_C_Polyhedron_from_Uint8_Box (ppl_Polyhedron_t * pph, ppl_const_Uint8_Box_t ph) [related]`

- 10.156.2.84 `int ppl_new_C_Polyhedron_from_Uint8_Box_with_complexity (ppl_Polyhedron_t * pph, ppl_const_Uint8_Box_t ph, int complexity) [related]`

- 10.156.2.85 `int ppl_new_C_Polyhedron_from_Z_Box (ppl_Polyhedron_t * pph, ppl_const_Z_Box_t ph) [related]`

- 10.156.2.86 `int ppl_new_C_Polyhedron_from_Z_Box_with_complexity (ppl_Polyhedron_t * pph, ppl_const_Z_Box_t ph, int complexity) [related]`

- 10.156.2.87 `int ppl_new_C_Polyhedron_recycle_Congruence_System (ppl_Polyhedron_t * pph, ppl_Congruence_System_t cs) [related]`

Builds a new C polyhedron recycling the system of congruences `cs` and writes a handle for the newly created polyhedron at address `pph`.

The new polyhedron will inherit the space dimension of `cs`.

Warning

This function modifies the congruence system referenced by `cs`: upon return, no assumption can be made on its value.

10.156.2.88 `int ppl_new_C_Polyhedron_recycle_Constraint_System (ppl_Polyhedron_t * pph,
ppl_Constraint_System_t cs)` [**related**]

Builds a new C polyhedron recycling the system of constraints *cs* and writes a handle for the newly created polyhedron at address *pph*.

The new polyhedron will inherit the space dimension of *cs*.

Warning

This function modifies the constraint system referenced by *cs*: upon return, no assumption can be made on its value.

10.156.2.89 `int ppl_new_C_Polyhedron_recycle_Generator_System (ppl_Polyhedron_t * pph,
ppl_Generator_System_t gs)` [**related**]

Builds a new C polyhedron recycling the system of generators *gs* and writes a handle for the newly created polyhedron at address *pph*.

The new polyhedron will inherit the space dimension of *gs*.

Warning

This function modifies the generator system referenced by *gs*: upon return, no assumption can be made on its value.

10.156.2.90 `int ppl_new_NNC_Polyhedron_from_BD_Shape_double (ppl_Polyhedron_t * pph,
ppl_const_BD_Shape_double_t ph)` [**related**]

10.156.2.91 `int ppl_new_NNC_Polyhedron_from_BD_Shape_double_with_complexity
(ppl_Polyhedron_t * pph, ppl_const_BD_Shape_double_t ph, int complexity)`
[**related**]

10.156.2.92 `int ppl_new_NNC_Polyhedron_from_BD_Shape_float (ppl_Polyhedron_t * pph,
ppl_const_BD_Shape_float_t ph)` [**related**]

10.156.2.93 `int ppl_new_NNC_Polyhedron_from_BD_Shape_float_with_complexity
(ppl_Polyhedron_t * pph, ppl_const_BD_Shape_float_t ph, int complexity)`
[**related**]

- 10.156.2.94 `int ppl_new_NNC_Polyhedron_from_BD_Shape_int16_t (ppl_Polyhedron_t * pph,
ppl_const_BD_Shape_int16_t_t ph)` [`related`]
- 10.156.2.95 `int ppl_new_NNC_Polyhedron_from_BD_Shape_int16_t_with_complexity
(ppl_Polyhedron_t * pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)`
[`related`]
- 10.156.2.96 `int ppl_new_NNC_Polyhedron_from_BD_Shape_int32_t (ppl_Polyhedron_t * pph,
ppl_const_BD_Shape_int32_t_t ph)` [`related`]
- 10.156.2.97 `int ppl_new_NNC_Polyhedron_from_BD_Shape_int32_t_with_complexity
(ppl_Polyhedron_t * pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)`
[`related`]
- 10.156.2.98 `int ppl_new_NNC_Polyhedron_from_BD_Shape_int64_t (ppl_Polyhedron_t * pph,
ppl_const_BD_Shape_int64_t_t ph)` [`related`]
- 10.156.2.99 `int ppl_new_NNC_Polyhedron_from_BD_Shape_int64_t_with_complexity
(ppl_Polyhedron_t * pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)`
[`related`]
- 10.156.2.100 `int ppl_new_NNC_Polyhedron_from_BD_Shape_int8_t (ppl_Polyhedron_t * pph,
ppl_const_BD_Shape_int8_t_t ph)` [`related`]
- 10.156.2.101 `int ppl_new_NNC_Polyhedron_from_BD_Shape_int8_t_with_complexity
(ppl_Polyhedron_t * pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)`
[`related`]
- 10.156.2.102 `int ppl_new_NNC_Polyhedron_from_BD_Shape_long_double (ppl_Polyhedron_t *
pph, ppl_const_BD_Shape_long_double_t ph)` [`related`]

10.156.2.103 `int ppl_new_NNC_Polyhedron_from_BD_Shape_long_double_with_complexity (ppl_Polyhedron_t * pph, ppl_const_BD_Shape_long_double_t ph, int complexity)` **[related]**

10.156.2.104 `int ppl_new_NNC_Polyhedron_from_BD_Shape_mpq_class (ppl_Polyhedron_t * pph, ppl_const_BD_Shape_mpq_class_t ph)` **[related]**

10.156.2.105 `int ppl_new_NNC_Polyhedron_from_BD_Shape_mpq_class_with_complexity (ppl_Polyhedron_t * pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)` **[related]**

10.156.2.106 `int ppl_new_NNC_Polyhedron_from_BD_Shape_mpz_class (ppl_Polyhedron_t * pph, ppl_const_BD_Shape_mpz_class_t ph)` **[related]**

10.156.2.107 `int ppl_new_NNC_Polyhedron_from_BD_Shape_mpz_class_with_complexity (ppl_Polyhedron_t * pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)` **[related]**

10.156.2.108 `int ppl_new_NNC_Polyhedron_from_C_Polyhedron (ppl_Polyhedron_t * pph, ppl_const_Polyhedron_t ph)` **[related]**

Builds an NNC polyhedron that is a copy of the C polyhedron *ph*; writes a handle for the newly created polyhedron at address *pph*.

10.156.2.109 `int ppl_new_NNC_Polyhedron_from_C_Polyhedron_with_complexity (ppl_Polyhedron_t * pph, ppl_const_Polyhedron_t ph, int complexity)` **[related]**

Builds an NNC polyhedron that approximates C_Polyhedron *ph*, using an algorithm whose complexity does not exceed *complexity*; writes a handle for the newly created polyhedron at address *pph*.

Note

The *complexity* argument, which can take values `PPL_COMPLEXITY_CLASS_POLYNOMIAL`, `PPL_COMPLEXITY_CLASS_SIMPLEX` and `PPL_COMPLEXITY_CLASS_ANY`, is ignored since the exact constructor has polynomial complexity.

10.156.2.110 `int ppl_new_NNC_Polyhedron_from_Congruence_System (ppl_Polyhedron_t * pph,
ppl_const_Congruence_System_t cs)` [**related**]

Builds a new NNC polyhedron from the system of congruences *cs* and writes a handle for the newly created polyhedron at address *pph*.

The new polyhedron will inherit the space dimension of *cs*.

10.156.2.111 `int ppl_new_NNC_Polyhedron_from_Constraint_System (ppl_Polyhedron_t * pph,
ppl_const_Constraint_System_t cs)` [**related**]

Builds a new NNC polyhedron from the system of constraints *cs* and writes a handle for the newly created polyhedron at address *pph*.

The new polyhedron will inherit the space dimension of *cs*.

10.156.2.112 `int ppl_new_NNC_Polyhedron_from_Double_Box (ppl_Polyhedron_t * pph,
ppl_const_Double_Box_t ph)` [**related**]

10.156.2.113 `int ppl_new_NNC_Polyhedron_from_Double_Box_with_complexity
(ppl_Polyhedron_t * pph, ppl_const_Double_Box_t ph, int complexity)`
[**related**]

10.156.2.114 `int ppl_new_NNC_Polyhedron_from_Float_Box (ppl_Polyhedron_t * pph,
ppl_const_Float_Box_t ph)` [**related**]

10.156.2.115 `int ppl_new_NNC_Polyhedron_from_Float_Box_with_complexity
(ppl_Polyhedron_t * pph, ppl_const_Float_Box_t ph, int complexity)` [**related**]

10.156.2.116 `int ppl_new_NNC_Polyhedron_from_Generator_System (ppl_Polyhedron_t * pph,
ppl_const_Generator_System_t gs)` [**related**]

Builds a new NNC polyhedron from the system of generators *gs* and writes a handle for the newly created polyhedron at address *pph*.

The new polyhedron will inherit the space dimension of *gs*.

- 10.156.2.117 `int ppl_new_NNC_Polyhedron_from_Grid (ppl_Polyhedron_t * pph,
ppl_const_Grid_t ph)` [related]
- 10.156.2.118 `int ppl_new_NNC_Polyhedron_from_Grid_with_complexity (ppl_Polyhedron_t *
pph, ppl_const_Grid_t ph, int complexity)` [related]
- 10.156.2.119 `int ppl_new_NNC_Polyhedron_from_Int16_Box (ppl_Polyhedron_t * pph,
ppl_const_Int16_Box_t ph)` [related]
- 10.156.2.120 `int ppl_new_NNC_Polyhedron_from_Int16_Box_with_complexity
(ppl_Polyhedron_t * pph, ppl_const_Int16_Box_t ph, int complexity)` [related]
- 10.156.2.121 `int ppl_new_NNC_Polyhedron_from_Int32_Box (ppl_Polyhedron_t * pph,
ppl_const_Int32_Box_t ph)` [related]
- 10.156.2.122 `int ppl_new_NNC_Polyhedron_from_Int32_Box_with_complexity
(ppl_Polyhedron_t * pph, ppl_const_Int32_Box_t ph, int complexity)` [related]
- 10.156.2.123 `int ppl_new_NNC_Polyhedron_from_Int64_Box (ppl_Polyhedron_t * pph,
ppl_const_Int64_Box_t ph)` [related]
- 10.156.2.124 `int ppl_new_NNC_Polyhedron_from_Int64_Box_with_complexity
(ppl_Polyhedron_t * pph, ppl_const_Int64_Box_t ph, int complexity)` [related]
- 10.156.2.125 `int ppl_new_NNC_Polyhedron_from_Int8_Box (ppl_Polyhedron_t * pph,
ppl_const_Int8_Box_t ph)` [related]

10.156.2.126 `int ppl_new_NNC_Polyhedron_from_Int8_Box_with_complexity (ppl_Polyhedron_t * pph, ppl_const_Int8_Box_t ph, int complexity)` [**related**]

10.156.2.127 `int ppl_new_NNC_Polyhedron_from_Long_Double_Box (ppl_Polyhedron_t * pph, ppl_const_Long_Double_Box_t ph)` [**related**]

10.156.2.128 `int ppl_new_NNC_Polyhedron_from_Long_Double_Box_with_complexity (ppl_Polyhedron_t * pph, ppl_const_Long_Double_Box_t ph, int complexity)` [**related**]

10.156.2.129 `int ppl_new_NNC_Polyhedron_from_NNC_Polyhedron (ppl_Polyhedron_t * pph, ppl_const_Polyhedron_t ph)` [**related**]

Builds an NNC polyhedron that is a copy of *ph*; writes a handle for the newly created polyhedron at address *pph*.

10.156.2.130 `int ppl_new_NNC_Polyhedron_from_NNC_Polyhedron_with_complexity (ppl_Polyhedron_t * pph, ppl_const_Polyhedron_t ph, int complexity)` [**related**]

Builds an NNC polyhedron that is a copy of *ph*; writes a handle for the newly created polyhedron at address *pph*.

Note

The complexity argument is ignored.

10.156.2.131 `int ppl_new_NNC_Polyhedron_from_Octagonal_Shape_double (ppl_Polyhedron_t * pph, ppl_const_Octagonal_Shape_double_t ph)` [**related**]

10.156.2.132 `int ppl_new_NNC_Polyhedron_from_Octagonal_Shape_double_with_complexity (ppl_Polyhedron_t * pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)` [**related**]

- 10.156.2.133** `int ppl_new_NNC_Polyhedron_from_Octagonal_Shape_float (ppl_Polyhedron_t * pph, ppl_const_Octagonal_Shape_float_t ph)` [**related**]
- 10.156.2.134** `int ppl_new_NNC_Polyhedron_from_Octagonal_Shape_float_with_complexity (ppl_Polyhedron_t * pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)` [**related**]
- 10.156.2.135** `int ppl_new_NNC_Polyhedron_from_Octagonal_Shape_int16_t (ppl_Polyhedron_t * pph, ppl_const_Octagonal_Shape_int16_t_t ph)` [**related**]
- 10.156.2.136** `int ppl_new_NNC_Polyhedron_from_Octagonal_Shape_int16_t_with_complexity (ppl_Polyhedron_t * pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)` [**related**]
- 10.156.2.137** `int ppl_new_NNC_Polyhedron_from_Octagonal_Shape_int32_t (ppl_Polyhedron_t * pph, ppl_const_Octagonal_Shape_int32_t_t ph)` [**related**]
- 10.156.2.138** `int ppl_new_NNC_Polyhedron_from_Octagonal_Shape_int32_t_with_complexity (ppl_Polyhedron_t * pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)` [**related**]
- 10.156.2.139** `int ppl_new_NNC_Polyhedron_from_Octagonal_Shape_int64_t (ppl_Polyhedron_t * pph, ppl_const_Octagonal_Shape_int64_t_t ph)` [**related**]
- 10.156.2.140** `int ppl_new_NNC_Polyhedron_from_Octagonal_Shape_int64_t_with_complexity (ppl_Polyhedron_t * pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)` [**related**]
- 10.156.2.141** `int ppl_new_NNC_Polyhedron_from_Octagonal_Shape_int8_t (ppl_Polyhedron_t * pph, ppl_const_Octagonal_Shape_int8_t_t ph)` [**related**]

- 10.156.2.142 `int ppl_new_NNC_Polyhedron_from_Octagonal_Shape_int8_t_with_complexity`
`(ppl_Polyhedron_t * pph, ppl_const_Octagonal_Shape_int8_t ph, int complexity)`
`[related]`
- 10.156.2.143 `int ppl_new_NNC_Polyhedron_from_Octagonal_Shape_long_double`
`(ppl_Polyhedron_t * pph, ppl_const_Octagonal_Shape_long_double_t ph)`
`[related]`
- 10.156.2.144 `int ppl_new_NNC_Polyhedron_from_Octagonal_Shape_long_double_with_`
`complexity (ppl_Polyhedron_t * pph, ppl_const_Octagonal_Shape_long_double_t`
`ph, int complexity)` `[related]`
- 10.156.2.145 `int ppl_new_NNC_Polyhedron_from_Octagonal_Shape_mpq_class`
`(ppl_Polyhedron_t * pph, ppl_const_Octagonal_Shape_mpq_class_t ph)`
`[related]`
- 10.156.2.146 `int ppl_new_NNC_Polyhedron_from_Octagonal_Shape_mpq_class_with_complexity`
`(ppl_Polyhedron_t * pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int`
`complexity)` `[related]`
- 10.156.2.147 `int ppl_new_NNC_Polyhedron_from_Octagonal_Shape_mpz_class`
`(ppl_Polyhedron_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph)`
`[related]`
- 10.156.2.148 `int ppl_new_NNC_Polyhedron_from_Octagonal_Shape_mpz_class_with_complexity`
`(ppl_Polyhedron_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int`
`complexity)` `[related]`
- 10.156.2.149 `int ppl_new_NNC_Polyhedron_from_Rational_Box` `(ppl_Polyhedron_t * pph,`
`ppl_const_Rational_Box_t ph)` `[related]`

10.156.2.150 `int ppl_new_NNC_Polyhedron_from_Rational_Box_with_complexity`
 (`ppl_Polyhedron_t * pph`, `ppl_const_Rational_Box_t ph`, `int complexity`)
 [`related`]

10.156.2.151 `int ppl_new_NNC_Polyhedron_from_space_dimension` (`ppl_Polyhedron_t * pph`,
`ppl_dimension_type d`, `int empty`) [`related`]

Builds an NNC polyhedron of dimension `d` and writes an handle to it at address `pph`. If `empty` is different from zero, the newly created polyhedron will be empty; otherwise, it will be a universe polyhedron.

10.156.2.152 `int ppl_new_NNC_Polyhedron_from_Uint16_Box` (`ppl_Polyhedron_t * pph`,
`ppl_const_Uint16_Box_t ph`) [`related`]

10.156.2.153 `int ppl_new_NNC_Polyhedron_from_Uint16_Box_with_complexity`
 (`ppl_Polyhedron_t * pph`, `ppl_const_Uint16_Box_t ph`, `int complexity`) [`related`]

10.156.2.154 `int ppl_new_NNC_Polyhedron_from_Uint32_Box` (`ppl_Polyhedron_t * pph`,
`ppl_const_Uint32_Box_t ph`) [`related`]

10.156.2.155 `int ppl_new_NNC_Polyhedron_from_Uint32_Box_with_complexity`
 (`ppl_Polyhedron_t * pph`, `ppl_const_Uint32_Box_t ph`, `int complexity`) [`related`]

10.156.2.156 `int ppl_new_NNC_Polyhedron_from_Uint64_Box` (`ppl_Polyhedron_t * pph`,
`ppl_const_Uint64_Box_t ph`) [`related`]

10.156.2.157 `int ppl_new_NNC_Polyhedron_from_Uint64_Box_with_complexity`
 (`ppl_Polyhedron_t * pph`, `ppl_const_Uint64_Box_t ph`, `int complexity`) [`related`]

10.156.2.158 `int ppl_new_NNC_Polyhedron_from_Uint8_Box` (`ppl_Polyhedron_t * pph`,
`ppl_const_Uint8_Box_t ph`) [`related`]

10.156.2.159 `int ppl_new_NNC_Polyhedron_from_Uint8_Box_with_complexity`
`(ppl_Polyhedron_t * pph, ppl_const_Uint8_Box_t ph, int complexity)` [**related**]

10.156.2.160 `int ppl_new_NNC_Polyhedron_from_Z_Box` (`ppl_Polyhedron_t * pph,`
`ppl_const_Z_Box_t ph`) [**related**]

10.156.2.161 `int ppl_new_NNC_Polyhedron_from_Z_Box_with_complexity` (`ppl_Polyhedron_t *`
`pph, ppl_const_Z_Box_t ph, int complexity`) [**related**]

10.156.2.162 `int ppl_new_NNC_Polyhedron_recycle_Congruence_System` (`ppl_Polyhedron_t *`
`pph, ppl_Congruence_System_t cs`) [**related**]

Builds a new NNC polyhedron recycling the system of congruences `cs` and writes a handle for the newly created polyhedron at address `pph`.

The new polyhedron will inherit the space dimension of `cs`.

Warning

This function modifies the congruence system referenced by `cs`: upon return, no assumption can be made on its value.

10.156.2.163 `int ppl_new_NNC_Polyhedron_recycle_Constraint_System` (`ppl_Polyhedron_t *`
`pph, ppl_Constraint_System_t cs`) [**related**]

Builds a new NNC polyhedron recycling the system of constraints `cs` and writes a handle for the newly created polyhedron at address `pph`.

The new polyhedron will inherit the space dimension of `cs`.

Warning

This function modifies the constraint system referenced by `cs`: upon return, no assumption can be made on its value.

10.156.2.164 `int ppl_new_NNC_Polyhedron_recycle_Generator_System` (`ppl_Polyhedron_t * pph,`
`ppl_Generator_System_t gs`) [**related**]

Builds a new NNC polyhedron recycling the system of generators `gs` and writes a handle for the newly created polyhedron at address `pph`.

The new polyhedron will inherit the space dimension of `gs`.

Warning

This function modifies the generator system referenced by `gs`: upon return, no assumption can be made on its value.

10.156.2.165 `int ppl_one_affine_ranking_function_MS_C_Polyhedron (ppl_const_Polyhedron_t pset, ppl_Generator_t point) [related]`

10.156.2.166 `int ppl_one_affine_ranking_function_MS_C_Polyhedron_2 (ppl_const_Polyhedron_t pset_before, ppl_const_Polyhedron_t pset_after, ppl_Generator_t point) [related]`

10.156.2.167 `int ppl_one_affine_ranking_function_MS_NNC_Polyhedron (ppl_const_Polyhedron_t pset, ppl_Generator_t point) [related]`

10.156.2.168 `int ppl_one_affine_ranking_function_MS_NNC_Polyhedron_2 (ppl_const_Polyhedron_t pset_before, ppl_const_Polyhedron_t pset_after, ppl_Generator_t point) [related]`

10.156.2.169 `int ppl_one_affine_ranking_function_PR_C_Polyhedron (ppl_const_Polyhedron_t pset, ppl_Generator_t point) [related]`

10.156.2.170 `int ppl_one_affine_ranking_function_PR_C_Polyhedron_2 (ppl_const_Polyhedron_t pset_before, ppl_const_Polyhedron_t pset_after, ppl_Generator_t point) [related]`

10.156.2.171 `int ppl_one_affine_ranking_function_PR_NNC_Polyhedron (ppl_const_Polyhedron_t pset, ppl_Generator_t point) [related]`

10.156.2.172 `int ppl_one_affine_ranking_function_PR_NNC_Polyhedron_2`
 (`ppl_const_Polyhedron_t pset_before`, `ppl_const_Polyhedron_t pset_after`,
`ppl_Generator_t point`) [**related**]

10.156.2.173 `int ppl_Polyhedron_add_congruence` (`ppl_Polyhedron_t ph`,
`ppl_const_Congruence_t c`) [**related**]

Adds a copy of the congruence `c` to polyhedron of `ph`.

10.156.2.174 `int ppl_Polyhedron_add_congruences` (`ppl_Polyhedron_t ph`,
`ppl_const_Congruence_System_t cs`) [**related**]

Adds a copy of the system of congruences `cs` to the polyhedron `ph`.

10.156.2.175 `int ppl_Polyhedron_add_constraint` (`ppl_Polyhedron_t ph`, `ppl_const_Constraint_t`
`c`) [**related**]

Adds a copy of the constraint `c` to the system of constraints of `ph`.

10.156.2.176 `int ppl_Polyhedron_add_constraints` (`ppl_Polyhedron_t ph`,
`ppl_const_Constraint_System_t cs`) [**related**]

Adds a copy of the system of constraints `cs` to the system of constraints of `ph`.

10.156.2.177 `int ppl_Polyhedron_add_generator` (`ppl_Polyhedron_t ph`, `ppl_const_Generator_t g`)
 [**related**]

Adds a copy of the generator `g` to the system of generators of `ph`.

10.156.2.178 `int ppl_Polyhedron_add_generators` (`ppl_Polyhedron_t ph`,
`ppl_const_Generator_System_t gs`) [**related**]

Adds a copy of the system of generators `gs` to the system of generators of `ph`.

10.156.2.179 `int ppl_Polyhedron_add_recycled_congruences` (`ppl_Polyhedron_t ph`,
`ppl_Congruence_System_t cs`) [**related**]

Adds the system of congruences *cs* to the polyhedron *ph*.

Warning

This function modifies the congruence system referenced by *cs*: upon return, no assumption can be made on its value.

10.156.2.180 `int ppl_Polyhedron_add_recycled_constraints (ppl_Polyhedron_t ph,
ppl_Constraint_System_t cs)` [**related**]

Adds the system of constraints *cs* to the system of constraints of *ph*.

Warning

This function modifies the constraint system referenced by *cs*: upon return, no assumption can be made on its value.

10.156.2.181 `int ppl_Polyhedron_add_recycled_generators (ppl_Polyhedron_t ph,
ppl_Generator_System_t gs)` [**related**]

Adds the system of generators *gs* to the system of generators of *ph*.

Warning

This function modifies the generator system referenced by *gs*: upon return, no assumption can be made on its value.

10.156.2.182 `int ppl_Polyhedron_add_space_dimensions_and_embed (ppl_Polyhedron_t ph,
ppl_dimension_type d)` [**related**]

Adds *d* new dimensions to the space enclosing the polyhedron *ph* and to *ph* itself.

10.156.2.183 `int ppl_Polyhedron_add_space_dimensions_and_project (ppl_Polyhedron_t ph,
ppl_dimension_type d)` [**related**]

Adds *d* new dimensions to the space enclosing the polyhedron *ph*.

10.156.2.184 `int ppl_Polyhedron_affine_dimension (ppl_const_Polyhedron_t ph,
ppl_dimension_type * m)` [**related**]

Writes to *m* the affine dimension of *ph* (not to be confused with the dimension of its enclosing vector space) or 0, if *ph* is empty.

10.156.2.185 `int ppl_Polyhedron_affine_image (ppl_Polyhedron_t ph, ppl_dimension_type var,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]

Transforms the polyhedron *ph*, assigning an affine expression to the specified variable.

Parameters

- ph* The polyhedron that is transformed;
- var* The variable to which the affine expression is assigned;
- le* The numerator of the affine expression;
- d* The denominator of the affine expression.

10.156.2.186 `int ppl_Polyhedron_affine_preimage (ppl_Polyhedron_t ph, ppl_dimension_type
var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]

Transforms the polyhedron *ph*, substituting an affine expression to the specified variable.

Parameters

- ph* The polyhedron that is transformed;
- var* The variable to which the affine expression is substituted;
- le* The numerator of the affine expression;
- d* The denominator of the affine expression.

10.156.2.187 `int ppl_Polyhedron_ascii_dump (ppl_const_Polyhedron_t x, FILE * stream)`
[**related**]

Dumps an ascii representation of *x* on *stream*.

10.156.2.188 `int ppl_Polyhedron_ascii_load (ppl_Polyhedron_t x, FILE * stream)` [**related**]

Loads an ascii representation of *x* from *stream*.

10.156.2.189 `int ppl_Polyhedron_BHRZ03_widening_assign (ppl_Polyhedron_t x,
ppl_const_Polyhedron_t y)` [**related**]

If the polyhedron *y* is contained in (or equal to) the polyhedron *x*, assigns to *x* the *BHRZ03-widening* of *x* and *y*.

10.156.2.190 `int ppl_Polyhedron_BHRZ03_widening_assign_with_tokens (ppl_Polyhedron_t x,
ppl_const_Polyhedron_t y, unsigned *tp) [related]`

If the polyhedron y is contained in (or equal to) the polyhedron x , assigns to x the *BHRZ03-widening* of x and y . If tp is not the null pointer, the *widening with tokens* delay technique is applied with $*tp$ available tokens.

10.156.2.191 `int ppl_Polyhedron_bounded_affine_image (ppl_Polyhedron_t
ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb,
ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d) [related]`

Assigns to ph the image of ph with respect to the *generalized affine transfer relation* $\frac{lb}{d} \leq \text{var}' \leq \frac{ub}{d}$.

Parameters

- ph** The polyhedron that is transformed;
- var** The variable bounded by the generalized affine transfer relation;
- lb** The numerator of the lower bounding affine expression;
- ub** The numerator of the upper bounding affine expression;
- d** The (common) denominator of the lower and upper bounding affine expressions.

10.156.2.192 `int ppl_Polyhedron_bounded_affine_preimage (ppl_Polyhedron_t
ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb,
ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d) [related]`

Assigns to ph the preimage of ph with respect to the *generalized affine transfer relation* $\frac{lb}{d} \leq \text{var}' \leq \frac{ub}{d}$.

Parameters

- ph** The polyhedron that is transformed;
- var** The variable bounded by the generalized affine transfer relation;
- lb** The numerator of the lower bounding affine expression;
- ub** The numerator of the upper bounding affine expression;
- d** The (common) denominator of the lower and upper bounding affine expressions.

10.156.2.193 `int ppl_Polyhedron_bounded_BHRZ03_extrapolation_assign (ppl_Polyhedron_t x,
ppl_const_Polyhedron_t y, ppl_const_Constraint_System_t cs) [related]`

If the polyhedron y is contained in (or equal to) the polyhedron x , assigns to x the *BHRZ03-widening* of x and y intersected with the constraints in cs that are satisfied by all the points of x , further intersected with all the constraints of the form $\pm v \leq r$ and $\pm v < r$, with $r \in \mathbb{Q}$, that are satisfied by all the points of x .

10.156.2.194 `int ppl_Polyhedron_bounded_BHRZ03_extrapolation_assign_with_tokens`
 (`ppl_Polyhedron_t x`, `ppl_const_Polyhedron_t y`, `ppl_const_Constraint_System_t cs`,
`unsigned * tp`) [**related**]

If the polyhedron y is contained in (or equal to) the polyhedron x , assigns to x the *BHRZ03-widening* of x and y intersected with the constraints in cs that are satisfied by all the points of x , further intersected with all the constraints of the form $\pm v \leq r$ and $\pm v < r$, with $r \in \mathbb{Q}$, that are satisfied by all the points of x . If tp is not the null pointer, the *widening with tokens* delay technique is applied with $*tp$ available tokens.

10.156.2.195 `int ppl_Polyhedron_bounded_H79_extrapolation_assign` (`ppl_Polyhedron_t x`,
`ppl_const_Polyhedron_t y`, `ppl_const_Constraint_System_t cs`) [**related**]

If the polyhedron y is contained in (or equal to) the polyhedron x , assigns to x the *H79-widening* of x and y intersected with the constraints in cs that are satisfied by all the points of x , further intersected with all the constraints of the form $\pm v \leq r$ and $\pm v < r$, with $r \in \mathbb{Q}$, that are satisfied by all the points of x .

10.156.2.196 `int ppl_Polyhedron_bounded_H79_extrapolation_assign_with_tokens`
 (`ppl_Polyhedron_t x`, `ppl_const_Polyhedron_t y`, `ppl_const_Constraint_System_t cs`,
`unsigned * tp`) [**related**]

If the polyhedron y is contained in (or equal to) the polyhedron x , assigns to x the *H79-widening* of x and y intersected with the constraints in cs that are satisfied by all the points of x , further intersected with all the constraints of the form $\pm v \leq r$ and $\pm v < r$, with $r \in \mathbb{Q}$, that are satisfied by all the points of x . If tp is not the null pointer, the *widening with tokens* delay technique is applied with $*tp$ available tokens.

10.156.2.197 `int ppl_Polyhedron_bounds_from_above` (`ppl_const_Polyhedron_t ph`,
`ppl_const_Linear_Expression_t le`) [**related**]

Returns a positive integer if le is bounded from above in ph ; returns 0 otherwise.

10.156.2.198 `int ppl_Polyhedron_bounds_from_below` (`ppl_const_Polyhedron_t ph`,
`ppl_const_Linear_Expression_t le`) [**related**]

Returns a positive integer if le is bounded from below in ph ; returns 0 otherwise.

10.156.2.199 `int ppl_Polyhedron_concatenate_assign` (`ppl_Polyhedron_t x`,
`ppl_const_Polyhedron_t y`) [**related**]

Seeing a polyhedron as a set of tuples (its points), assigns to x all the tuples that can be obtained by concatenating, in the order given, a tuple of x with a tuple of y .

10.156.2.200 `int ppl_Polyhedron_constrains (ppl_Polyhedron_t ph, ppl_dimension_type var)`
[related]

Returns a positive integer if *ph* constrains *var*; returns 0 if *ph* does not constrain *var*.

10.156.2.201 `int ppl_Polyhedron_contains_integer_point (ppl_const_Polyhedron_t ph)`
[related]

Returns a positive integer if *ph* contains at least one integer point; returns 0 otherwise.

10.156.2.202 `int ppl_Polyhedron_contains_Polyhedron (ppl_const_Polyhedron_t x,
ppl_const_Polyhedron_t y)` **[related]**

Returns a positive integer if *x* contains or is equal to *y*; returns 0 if it does not.

10.156.2.203 `int ppl_Polyhedron_difference_assign (ppl_Polyhedron_t x, ppl_const_Polyhedron_t
y)` **[related]**

Same as `ppl_Polyhedron_poly_difference_assign(x, y)`.

10.156.2.204 `int ppl_Polyhedron_drop_some_non_integer_points (ppl_Polyhedron_t ph, int
complexity)` **[related]**

10.156.2.205 `int ppl_Polyhedron_drop_some_non_integer_points_2 (ppl_Polyhedron_t ph,
ppl_dimension_type ds[], size_t n, int complexity)` **[related]**

10.156.2.206 `int ppl_Polyhedron_equals_Polyhedron (ppl_const_Polyhedron_t x,
ppl_const_Polyhedron_t y)` **[related]**

Returns a positive integer if *x* and *y* are the same polyhedron; returns 0 if they are different.

Note that *x* and *y* may be topology- and/or dimension-incompatible polyhedra: in those cases, the value 0 is returned.

10.156.2.207 `int ppl_Polyhedron_expand_space_dimension (ppl_Polyhedron_t ph,
ppl_dimension_type d, ppl_dimension_type m)` **[related]**

Expands the d -th dimension of the vector space enclosing ph to m new space dimensions.

10.156.2.208 `int ppl_Polyhedron_external_memory_in_bytes (ppl_const_Polyhedron_t  $ph$ , size_t *  $sz$ )` [**related**]

Writes to sz a lower bound to the size in bytes of the memory managed by ph .

10.156.2.209 `int ppl_Polyhedron_fold_space_dimensions (ppl_Polyhedron_t  $ph$ , ppl_dimension_type  $ds[]$ , size_t  $n$ , ppl_dimension_type  $d$ )` [**related**]

Modifies ph by *folding* the space dimensions contained in the first n positions of the array ds into dimension d . The presence of duplicates in ds is a waste but an innocuous one.

10.156.2.210 `int ppl_Polyhedron_frequency (ppl_const_Polyhedron_t  $ph$ , ppl_const_Linear_Expression_t  $le$ , ppl_Coefficient_t  $ext_{fn}$ , ppl_Coefficient_t  $ext_{fd}$ , ppl_Coefficient_t  $ext_{vn}$ , ppl_Coefficient_t  $ext_{vd}$ )` [**related**]

10.156.2.211 `int ppl_Polyhedron_generalized_affine_image (ppl_Polyhedron_t  $ph$ , ppl_dimension_type  $var$ , enum ppl_enum_Constraint_Type  $relsym$ , ppl_const_Linear_Expression_t  $le$ , ppl_const_Coefficient_t  $d$ )` [**related**]

Assigns to ph the image of ph with respect to the *generalized affine transfer relation* $var' \bowtie \frac{le}{d}$, where $\bowtie$ is the relation symbol encoded by $relsym$.

Parameters

- ph The polyhedron that is transformed;
- var The left hand side variable of the generalized affine transfer relation;
- $relsym$ The relation symbol;
- le The numerator of the right hand side affine expression;
- d The denominator of the right hand side affine expression.

10.156.2.212 `int ppl_Polyhedron_generalized_affine_image_lhs_rhs (ppl_Polyhedron_t  $ph$ , ppl_const_Linear_Expression_t  $lhs$ , enum ppl_enum_Constraint_Type  $relsym$ , ppl_const_Linear_Expression_t  $rhs$ )` [**related**]

Assigns to ph the image of ph with respect to the *generalized affine transfer relation* $lhs' \bowtie rhs$, where $\bowtie$ is the relation symbol encoded by $relsym$.

Parameters

- ph The polyhedron that is transformed;

lhs The left hand side affine expression;
relsym The relation symbol;
rhs The right hand side affine expression.

10.156.2.213 `int ppl_Polyhedron_generalized_affine_preimage (ppl_Polyhedron_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d) [related]`

Assigns to `ph` the preimage of `ph` with respect to the *generalized affine transfer relation* $var' \bowtie \frac{le}{d}$, where $\bowtie$ is the relation symbol encoded by `relsym`.

Parameters

ph The polyhedron that is transformed;
var The left hand side variable of the generalized affine transfer relation;
relsym The relation symbol;
le The numerator of the right hand side affine expression;
d The denominator of the right hand side affine expression.

10.156.2.214 `int ppl_Polyhedron_generalized_affine_preimage_lhs_rhs (ppl_Polyhedron_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs) [related]`

Assigns to `ph` the preimage of `ph` with respect to the *generalized affine transfer relation* $lhs' \bowtie rhs$, where $\bowtie$ is the relation symbol encoded by `relsym`.

Parameters

ph The polyhedron that is transformed;
lhs The left hand side affine expression;
relsym The relation symbol;
rhs The right hand side affine expression.

10.156.2.215 `int ppl_Polyhedron_get_congruences (ppl_const_Polyhedron_t ph, ppl_const_Congruence_System_t * pcs) [related]`

Writes at address `pcs` a const handle to a system of congruences approximating the polyhedron `ph`.

10.156.2.216 `int ppl_Polyhedron_get_constraints (ppl_const_Polyhedron_t ph, ppl_const_Constraint_System_t * pcs) [related]`

Writes a const handle to the constraint system defining the polyhedron `ph` at address `pcs`.

10.156.2.217 `int ppl_Polyhedron_get_generators (ppl_const_Polyhedron_t ph,
ppl_const_Generator_System_t * pgs)` [**related**]

Writes a const handle to the generator system defining the polyhedron *ph* at address *pgs*.

10.156.2.218 `int ppl_Polyhedron_get_minimized_congruences (ppl_const_Polyhedron_t ph,
ppl_const_Congruence_System_t * pcs)` [**related**]

Writes at address *pcs* a const handle to a system of minimized congruences approximating the polyhedron *ph*.

10.156.2.219 `int ppl_Polyhedron_get_minimized_constraints (ppl_const_Polyhedron_t ph,
ppl_const_Constraint_System_t * pcs)` [**related**]

Writes a const handle to the minimized constraint system defining the polyhedron *ph* at address *pcs*.

10.156.2.220 `int ppl_Polyhedron_get_minimized_generators (ppl_const_Polyhedron_t ph,
ppl_const_Generator_System_t * pgs)` [**related**]

Writes a const handle to the minimized generator system defining the polyhedron *ph* at address *pgs*.

10.156.2.221 `int ppl_Polyhedron_H79_widening_assign (ppl_Polyhedron_t x,
ppl_const_Polyhedron_t y)` [**related**]

If the polyhedron *y* is contained in (or equal to) the polyhedron *x*, assigns to *x* the *H79-widening* of *x* and *y*.

10.156.2.222 `int ppl_Polyhedron_H79_widening_assign_with_tokens (ppl_Polyhedron_t x,
ppl_const_Polyhedron_t y, unsigned * tp)` [**related**]

If the polyhedron *y* is contained in (or equal to) the polyhedron *x*, assigns to *x* the *H79-widening* of *x* and *y*. If *tp* is not the null pointer, the *widening with tokens* delay technique is applied with **tp* available tokens.

10.156.2.223 `int ppl_Polyhedron_intersection_assign (ppl_Polyhedron_t x,
ppl_const_Polyhedron_t y)` [**related**]

Intersects *x* with polyhedron *y* and assigns the result to *x*.

10.156.2.224 int ppl_Polyhedron_is_bounded (ppl_const_Polyhedron_t *ph*) [related]

Returns a positive integer if *ph* is bounded; returns 0 if *ph* is unbounded.

10.156.2.225 int ppl_Polyhedron_is_discrete (ppl_const_Polyhedron_t *ph*) [related]

Returns a positive integer if *ph* is a discrete set; returns 0 if *ph* is not a discrete set.

**10.156.2.226 int ppl_Polyhedron_is_disjoint_from_Polyhedron (ppl_const_Polyhedron_t *x*,
ppl_const_Polyhedron_t *y*) [related]**

Returns a positive integer if *x* and *y* are disjoint; returns 0 if they are not.

10.156.2.227 int ppl_Polyhedron_is_empty (ppl_const_Polyhedron_t *ph*) [related]

Returns a positive integer if *ph* is empty; returns 0 if *ph* is not empty.

**10.156.2.228 int ppl_Polyhedron_is_topologically_closed (ppl_const_Polyhedron_t *ph*)
[related]**

Returns a positive integer if *ph* is topologically closed; returns 0 if *ph* is not topologically closed.

10.156.2.229 int ppl_Polyhedron_is_universe (ppl_const_Polyhedron_t *ph*) [related]

Returns a positive integer if *ph* is a universe polyhedron; returns 0 if it is not.

**10.156.2.230 int ppl_Polyhedron_limited_BHRZ03_extrapolation_assign (ppl_Polyhedron_t *x*,
ppl_const_Polyhedron_t *y*, ppl_const_Constraint_System_t *cs*) [related]**

If the polyhedron *y* is contained in (or equal to) the polyhedron *x*, assigns to *x* the *BHRZ03-widening* of *x* and *y* intersected with the constraints in *cs* that are satisfied by all the points of *x*.

**10.156.2.231 int ppl_Polyhedron_limited_BHRZ03_extrapolation_assign_with_tokens
(ppl_Polyhedron_t *x*, ppl_const_Polyhedron_t *y*, ppl_const_Constraint_System_t *cs*,
unsigned * *tp*) [related]**

If the polyhedron y is contained in (or equal to) the polyhedron x , assigns to x the *BHRZ03-widening* of x and y intersected with the constraints in cs that are satisfied by all the points of x . If tp is not the null pointer, the *widening with tokens* delay technique is applied with $*tp$ available tokens.

10.156.2.232 `int ppl_Polyhedron_limited_H79_extrapolation_assign (ppl_Polyhedron_t x,
ppl_const_Polyhedron_t y, ppl_const_Constraint_System_t cs) [related]`

If the polyhedron y is contained in (or equal to) the polyhedron x , assigns to x the *H79-widening* of x and y intersected with the constraints in cs that are satisfied by all the points of x .

10.156.2.233 `int ppl_Polyhedron_limited_H79_extrapolation_assign_with_tokens
(ppl_Polyhedron_t x, ppl_const_Polyhedron_t y, ppl_const_Constraint_System_t cs,
unsigned *tp) [related]`

If the polyhedron y is contained in (or equal to) the polyhedron x , assigns to x the *H79-widening* of x and y intersected with the constraints in cs that are satisfied by all the points of x . If tp is not the null pointer, the *widening with tokens* delay technique is applied with $*tp$ available tokens.

10.156.2.234 `int ppl_Polyhedron_linear_partition (ppl_const_Polyhedron_t
x, ppl_const_Polyhedron_t y, ppl_Polyhedron_t *p_inters,
ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest) [related]`

10.156.2.235 `int ppl_Polyhedron_map_space_dimensions (ppl_Polyhedron_t ph,
ppl_dimension_type maps[], size_t n) [related]`

Remaps the dimensions of the vector space according to a *partial function*. This function is specified by means of the `maps` array, which has n entries.

The partial function is defined on dimension i if $i < n$ and `maps[i] != ppl_not_a_dimension`; otherwise it is undefined on dimension i . If the function is defined on dimension i , then dimension i is mapped onto dimension `maps[i]`.

The result is undefined if `maps` does not encode a partial function with the properties described in the *specification of the mapping operator*.

10.156.2.236 `int ppl_Polyhedron_maximize (ppl_const_Polyhedron_t ph, ppl_const_Linear_-
Expression_t le, ppl_Coefficient_t sup_n, ppl_Coefficient_t sup_d, int *pmaximum)
[related]`

The same as `ppl_Polyhedron_maximize_with_point`, but without the output argument for the location where the supremum value is reached.

10.156.2.237 `int ppl_Polyhedron_maximize_with_point (ppl_const_Polyhedron_t ph,
ppl_const_Linear_Expression_t le, ppl_Coefficient_t sup_n, ppl_Coefficient_t
sup_d, int *pmaximum, ppl_Generator_t point)` [**related**]

Returns a positive integer if *ph* is not empty and *le* is bounded from above in *ph*, in which case the supremum value and a point where *le* reaches it are computed.

Parameters

- ph* The polyhedron constraining *le*;
- le* The linear expression to be maximized subject to *ph*;
- sup_n* Will be assigned the numerator of the supremum value;
- sup_d* Will be assigned the denominator of the supremum value;
- pmaximum* Will store 1 in this location if the supremum is also the maximum, will store 0 otherwise;
- point* Will be assigned the point or closure point where *le* reaches the extremum value.

If *ph* is empty or *le* is not bounded from above, 0 will be returned and *sup_n*, *sup_d*, *pmaximum* and *point* will be left untouched.

10.156.2.238 `int ppl_Polyhedron_minimize (ppl_const_Polyhedron_t ph, ppl_const_Linear_Expression_t le,
ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)` [**related**]

10.156.2.239 `int ppl_Polyhedron_minimize_with_point (ppl_const_Polyhedron_t ph,
ppl_const_Linear_Expression_t le, ppl_Coefficient_t inf_n, ppl_Coefficient_t inf_d,
int *pminimum)` [**related**]

The same as `ppl_Polyhedron_minimize_with_point`, but without the output argument for the location where the infimum value is reached.

10.156.2.240 `int ppl_Polyhedron_minimize_with_point (ppl_const_Polyhedron_t ph,
ppl_const_Linear_Expression_t le, ppl_Coefficient_t inf_n, ppl_Coefficient_t inf_d,
int *pminimum, ppl_Generator_t point)` [**related**]

Returns a positive integer if *ph* is not empty and *le* is bounded from below in *ph*, in which case the infimum value and a point where *le* reaches it are computed.

Parameters

- ph* The polyhedron constraining *le*;
- le* The linear expression to be minimized subject to *ph*;
- inf_n* Will be assigned the numerator of the infimum value;
- inf_d* Will be assigned the denominator of the infimum value;

pminimum Will store 1 in this location if the infimum is also the minimum, will store 0 otherwise;
point Will be assigned the point or closure point where *le* reaches the extremum value.

If *ph* is empty or *le* is not bounded from below, 0 will be returned and *sup_n*, *sup_d*, **pmaximum* and *point* will be left untouched.

10.156.2.241 `int ppl_Polyhedron_OK (ppl_const_Polyhedron_t ph)` [**related**]

Returns a positive integer if *ph* is well formed, i.e., if it satisfies all its implementation invariants; returns 0 and perhaps makes some noise if *ph* is broken. Useful for debugging purposes.

10.156.2.242 `int ppl_Polyhedron_poly_difference_assign (ppl_Polyhedron_t x,
ppl_const_Polyhedron_t y)` [**related**]

Assigns to *x* the *poly-difference* of *x* and *y*.

10.156.2.243 `int ppl_Polyhedron_poly_hull_assign (ppl_Polyhedron_t x, ppl_const_Polyhedron_t
y)` [**related**]

Assigns to *x* the *poly-hull* of *x* and *y*.

10.156.2.244 `int ppl_Polyhedron_poly_hull_assign_if_exact (ppl_Polyhedron_t x,
ppl_const_Polyhedron_t y)` [**related**]

10.156.2.245 `int ppl_Polyhedron_refine_with_congruence (ppl_Polyhedron_t ph,
ppl_const_Congruence_t c)` [**related**]

Refines *ph* using congruence *c*.

10.156.2.246 `int ppl_Polyhedron_refine_with_congruences (ppl_Polyhedron_t ph,
ppl_const_Congruence_System_t cs)` [**related**]

Refines *ph* using the congruences in *cs*.

10.156.2.247 `int ppl_Polyhedron_refine_with_constraint (ppl_Polyhedron_t ph,
ppl_const_Constraint_t c)` [**related**]

Refines *ph* using constraint *c*.

10.156.2.248 `int ppl_Polyhedron_refine_with_constraints (ppl_Polyhedron_t ph,
ppl_const_Constraint_System_t cs)` [**related**]

Refines *ph* using the constraints in *cs*.

10.156.2.249 `int ppl_Polyhedron_relation_with_Congruence (ppl_const_Polyhedron_t ph,
ppl_const_Congruence_t c)` [**related**]

10.156.2.250 `int ppl_Polyhedron_relation_with_Constraint (ppl_const_Polyhedron_t ph,
ppl_const_Constraint_t c)` [**related**]

Checks the relation between the polyhedron *ph* and the constraint *c*.

If successful, returns a non-negative integer that is obtained as the bitwise or of the bits (chosen among PPL_POLY_CON_RELATION_IS_DISJOINT, PPL_POLY_CON_RELATION_STRICTLY_INTERSECTS, PPL_POLY_CON_RELATION_IS_INCLUDED, and PPL_POLY_CON_RELATION_SATURATES) that describe the relation between *ph* and *c*.

10.156.2.251 `int ppl_Polyhedron_relation_with_Generator (ppl_const_Polyhedron_t ph,
ppl_const_Generator_t g)` [**related**]

Checks the relation between the polyhedron *ph* and the generator *g*.

If successful, returns a non-negative integer that is obtained as the bitwise or of the bits (only PPL_POLY_GEN_RELATION_SUBSUMES, at present) that describe the relation between *ph* and *g*.

10.156.2.252 `int ppl_Polyhedron_remove_higher_space_dimensions (ppl_Polyhedron_t ph,
ppl_dimension_type d)` [**related**]

Removes the higher dimensions from the vector space enclosing *ph* so that, upon successful return, the new space dimension is *d*.

10.156.2.253 `int ppl_Polyhedron_remove_space_dimensions (ppl_Polyhedron_t ph,
ppl_dimension_type ds[], size_t n)` [**related**]

Removes from the vector space enclosing *ph* the space dimensions that are specified in first *n* positions of the array *ds*. The presence of duplicates in *ds* is a waste but an innocuous one.

10.156.2.254 `int ppl_Polyhedron_simplify_using_context_assign (ppl_Polyhedron_t x,
ppl_const_Polyhedron_t y) [related]`

Assigns to x the *meet-preserving simplification* of x with respect to context y . Returns a positive integer if x and y have a nonempty intersection; returns 0 if they are disjoint.

10.156.2.255 `int ppl_Polyhedron_space_dimension (ppl_const_Polyhedron_t ph,
ppl_dimension_type * m) [related]`

Writes to m the dimension of the vector space enclosing ph .

10.156.2.256 `int ppl_Polyhedron_strictly_contains_Polyhedron (ppl_const_Polyhedron_t x,
ppl_const_Polyhedron_t y) [related]`

Returns a positive integer if x strictly contains y ; returns 0 if it does not.

10.156.2.257 `int ppl_Polyhedron_time_elapse_assign (ppl_Polyhedron_t x,
ppl_const_Polyhedron_t y) [related]`

Assigns to x the *time-elapse* between the polyhedra x and y .

10.156.2.258 `int ppl_Polyhedron_topological_closure_assign (ppl_Polyhedron_t ph) [related]`

Assigns to ph its topological closure.

10.156.2.259 `int ppl_Polyhedron_total_memory_in_bytes (ppl_const_Polyhedron_t ph, size_t * sz)
[related]`

Writes to sz a lower bound to the size in bytes of the memory managed by ph .

10.156.2.260 `int ppl_Polyhedron_unconstrain_space_dimension (ppl_Polyhedron_t ph,
ppl_dimension_type var) [related]`

Modifies ph by *unconstraining* the space dimension var .

10.156.2.261 `int ppl_Polyhedron_unconstrain_space_dimensions (ppl_Polyhedron_t ph,
ppl_dimension_type ds[], size_t n) [related]`

Modifies `ph` by *unconstraining* the space dimensions that are specified in the first `n` positions of the array `ds`. The presence of duplicates in `ds` is a waste but an innocuous one.

10.156.2.262 `int ppl_Polyhedron_upper_bound_assign (ppl_Polyhedron_t x,
ppl_const_Polyhedron_t y) [related]`

Assigns to `x` an upper bound of `x` and `y`.

For the domain of polyhedra, this is the same as `ppl_Polyhedron_poly_hull_assign(x, y)`.

10.156.2.263 `int ppl_Polyhedron_upper_bound_assign_if_exact (ppl_Polyhedron_t x,
ppl_const_Polyhedron_t y) [related]`

10.156.2.264 `int ppl_Polyhedron_widening_assign (ppl_Polyhedron_t x, ppl_const_Polyhedron_t
y) [related]`

10.156.2.265 `int ppl_Polyhedron_widening_assign_with_tokens (ppl_Polyhedron_t x,
ppl_const_Polyhedron_t y, unsigned * tp) [related]`

10.156.2.266 `int ppl_Polyhedron_wrap_assign (ppl_Polyhedron_t ph, ppl_dimension_type
ds[], size_t n, enum ppl_enum_Bounded_Integer_Type_Width w, enum
ppl_enum_Bounded_Integer_Type_Representation r, enum ppl_enum_Bounded_
Integer_Type_Overflow o, const ppl_const_Constraint_System_t * pcs, unsigned
complexity_threshold, int wrap_individually) [related]`

10.156.2.267 `int ppl_termination_test_MS_C_Polyhedron (ppl_const_Polyhedron_t pset)
[related]`

10.156.2.268 `int ppl_termination_test_MS_C_Polyhedron_2 (ppl_const_Polyhedron_t pset_before,
ppl_const_Polyhedron_t pset_after) [related]`

10.156.2.269 `int ppl_termination_test_MS_NNC_Polyhedron (ppl_const_Polyhedron_t pset)
[related]`

- 10.156.2.270** `int ppl_termination_test_MS_NNC_Polyhedron_2 (ppl_const_Polyhedron_t pset_before, ppl_const_Polyhedron_t pset_after) [related]`
- 10.156.2.271** `int ppl_termination_test_PR_C_Polyhedron (ppl_const_Polyhedron_t pset) [related]`
- 10.156.2.272** `int ppl_termination_test_PR_C_Polyhedron_2 (ppl_const_Polyhedron_t pset_before, ppl_const_Polyhedron_t pset_after) [related]`
- 10.156.2.273** `int ppl_termination_test_PR_NNC_Polyhedron (ppl_const_Polyhedron_t pset) [related]`
- 10.156.2.274** `int ppl_termination_test_PR_NNC_Polyhedron_2 (ppl_const_Polyhedron_t pset_before, ppl_const_Polyhedron_t pset_after) [related]`
- 10.156.2.275** `int wrap_assign (ppl_Polyhedron_t ph, ppl_dimension_type ds[], size_t n, ppl_enum_Bounded_Integer_Type_Width w, ppl_enum_Bounded_Integer_Type_Representation r, ppl_enum_Bounded_Integer_Type_Overflow o, const ppl_const_Constraint_System_t * pcs, unsigned complexity_threshold, int wrap_individually) [related]`

Assigns to `ph` the polyhedron obtained from `ph` by "wrapping" the vector space defined by the first `n` space dimensions in `ds[]`.

Parameters

- ph* The polyhedron that is transformed;
- ds[]* Specifies the space dimensions to be wrapped.
- n* The first `n` space dimensions in the array `ds[]` will be wrapped.
- w* The width of the bounded integer type corresponding to all the dimensions to be wrapped.
- r* The representation of the bounded integer type corresponding to all the dimensions to be wrapped.
- o* The overflow behavior of the bounded integer type corresponding to all the dimensions to be wrapped.
- pcs* Possibly null pointer to a constraint system whose space dimensions are the first `n` dimensions in `ds[]`. If `*pcs` depends on variables not in `vars`, the behavior is undefined. When non-null, the constraint system is assumed to represent the conditional or looping construct guard with respect to which wrapping is performed. Since wrapping requires the computation of upper bounds

and due to non-distributivity of constraint refinement over upper bounds, passing a constraint system in this way can be more precise than refining the result of the wrapping operation with the constraints in `cs`.

complexity_threshold A precision parameter where higher values result in possibly improved precision.

wrap_individually Non-zero if the dimensions should be wrapped individually (something that results in much greater efficiency to the detriment of precision).

The documentation for this interface was generated from the following files:

- [C_interface.dox](#)
- [ppl_c.h](#)

10.157 `ppl_Rational_Box_tag` Interface Reference

Types and functions for `ppl_Rational_Box_tag`.

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Rational_Box (ppl_const_Rational_Box_t ph)`
- `int ppl_new_Rational_Box_from_space_dimension (ppl_Rational_Box_t *pph, ppl_dimension_type d, int empty)`
- `int ppl_new_Rational_Box_from_Int8_Box (ppl_Rational_Box_t *pph, ppl_const_Int8_Box_t ph)`
- `int ppl_new_Rational_Box_from_Int16_Box (ppl_Rational_Box_t *pph, ppl_const_Int16_Box_t ph)`
- `int ppl_new_Rational_Box_from_Int32_Box (ppl_Rational_Box_t *pph, ppl_const_Int32_Box_t ph)`
- `int ppl_new_Rational_Box_from_Int64_Box (ppl_Rational_Box_t *pph, ppl_const_Int64_Box_t ph)`
- `int ppl_new_Rational_Box_from_UInt8_Box (ppl_Rational_Box_t *pph, ppl_const_UInt8_Box_t ph)`
- `int ppl_new_Rational_Box_from_UInt16_Box (ppl_Rational_Box_t *pph, ppl_const_UInt16_Box_t ph)`
- `int ppl_new_Rational_Box_from_UInt32_Box (ppl_Rational_Box_t *pph, ppl_const_UInt32_Box_t ph)`
- `int ppl_new_Rational_Box_from_UInt64_Box (ppl_Rational_Box_t *pph, ppl_const_UInt64_Box_t ph)`
- `int ppl_new_Rational_Box_from_Z_Box (ppl_Rational_Box_t *pph, ppl_const_Z_Box_t ph)`
- `int ppl_new_Rational_Box_from_Rational_Box (ppl_Rational_Box_t *pph, ppl_const_Rational_Box_t ph)`
- `int ppl_new_Rational_Box_from_BD_Shape_int8_t (ppl_Rational_Box_t *pph, ppl_const_BD_Shape_int8_t_t ph)`
- `int ppl_new_Rational_Box_from_BD_Shape_int16_t (ppl_Rational_Box_t *pph, ppl_const_BD_Shape_int16_t_t ph)`
- `int ppl_new_Rational_Box_from_BD_Shape_int32_t (ppl_Rational_Box_t *pph, ppl_const_BD_Shape_int32_t_t ph)`

- [int ppl_new_Rational_Box_from_BD_Shape_int64_t](#) (ppl_Rational_Box_t *pph, ppl_const_BD_Shape_int64_t_t ph)
- [int ppl_new_Rational_Box_from_BD_Shape_mpz_class](#) (ppl_Rational_Box_t *pph, ppl_const_BD_Shape_mpz_class_t ph)
- [int ppl_new_Rational_Box_from_BD_Shape_mpq_class](#) (ppl_Rational_Box_t *pph, ppl_const_BD_Shape_mpq_class_t ph)
- [int ppl_new_Rational_Box_from_Octagonal_Shape_int8_t](#) (ppl_Rational_Box_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph)
- [int ppl_new_Rational_Box_from_Octagonal_Shape_int16_t](#) (ppl_Rational_Box_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph)
- [int ppl_new_Rational_Box_from_Octagonal_Shape_int32_t](#) (ppl_Rational_Box_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph)
- [int ppl_new_Rational_Box_from_Octagonal_Shape_int64_t](#) (ppl_Rational_Box_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph)
- [int ppl_new_Rational_Box_from_Octagonal_Shape_mpz_class](#) (ppl_Rational_Box_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph)
- [int ppl_new_Rational_Box_from_Octagonal_Shape_mpq_class](#) (ppl_Rational_Box_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph)
- [int ppl_new_Rational_Box_from_C_Polyhedron](#) (ppl_Rational_Box_t *pph, ppl_const_Polyhedron_t ph)
- [int ppl_new_Rational_Box_from_NNC_Polyhedron](#) (ppl_Rational_Box_t *pph, ppl_const_Polyhedron_t ph)
- [int ppl_new_Rational_Box_from_Grid](#) (ppl_Rational_Box_t *pph, ppl_const_Grid_t ph)
- [int ppl_new_Rational_Box_from_Float_Box](#) (ppl_Rational_Box_t *pph, ppl_const_Float_Box_t ph)
- [int ppl_new_Rational_Box_from_BD_Shape_float](#) (ppl_Rational_Box_t *pph, ppl_const_BD_Shape_float_t ph)
- [int ppl_new_Rational_Box_from_Octagonal_Shape_float](#) (ppl_Rational_Box_t *pph, ppl_const_Octagonal_Shape_float_t ph)
- [int ppl_new_Rational_Box_from_Double_Box](#) (ppl_Rational_Box_t *pph, ppl_const_Double_Box_t ph)
- [int ppl_new_Rational_Box_from_BD_Shape_double](#) (ppl_Rational_Box_t *pph, ppl_const_BD_Shape_double_t ph)
- [int ppl_new_Rational_Box_from_Octagonal_Shape_double](#) (ppl_Rational_Box_t *pph, ppl_const_Octagonal_Shape_double_t ph)
- [int ppl_new_Rational_Box_from_Long_Double_Box](#) (ppl_Rational_Box_t *pph, ppl_const_Long_Double_Box_t ph)
- [int ppl_new_Rational_Box_from_BD_Shape_long_double](#) (ppl_Rational_Box_t *pph, ppl_const_BD_Shape_long_double_t ph)
- [int ppl_new_Rational_Box_from_Octagonal_Shape_long_double](#) (ppl_Rational_Box_t *pph, ppl_const_Octagonal_Shape_long_double_t ph)
- [int ppl_new_Rational_Box_from_Int8_Box_with_complexity](#) (ppl_Rational_Box_t *pph, ppl_const_Int8_Box_t ph, int complexity)
- [int ppl_new_Rational_Box_from_Int16_Box_with_complexity](#) (ppl_Rational_Box_t *pph, ppl_const_Int16_Box_t ph, int complexity)
- [int ppl_new_Rational_Box_from_Int32_Box_with_complexity](#) (ppl_Rational_Box_t *pph, ppl_const_Int32_Box_t ph, int complexity)
- [int ppl_new_Rational_Box_from_Int64_Box_with_complexity](#) (ppl_Rational_Box_t *pph, ppl_const_Int64_Box_t ph, int complexity)
- [int ppl_new_Rational_Box_from_Uint8_Box_with_complexity](#) (ppl_Rational_Box_t *pph, ppl_const_Uint8_Box_t ph, int complexity)

- `int ppl_new_Rational_Box_from_Uint16_Box_with_complexity` (`ppl_Rational_Box_t *pph`, `ppl_const_Uint16_Box_t ph`, `int complexity`)
- `int ppl_new_Rational_Box_from_Uint32_Box_with_complexity` (`ppl_Rational_Box_t *pph`, `ppl_const_Uint32_Box_t ph`, `int complexity`)
- `int ppl_new_Rational_Box_from_Uint64_Box_with_complexity` (`ppl_Rational_Box_t *pph`, `ppl_const_Uint64_Box_t ph`, `int complexity`)
- `int ppl_new_Rational_Box_from_Z_Box_with_complexity` (`ppl_Rational_Box_t *pph`, `ppl_const_Z_Box_t ph`, `int complexity`)
- `int ppl_new_Rational_Box_from_Rational_Box_with_complexity` (`ppl_Rational_Box_t *pph`, `ppl_const_Rational_Box_t ph`, `int complexity`)
- `int ppl_new_Rational_Box_from_BD_Shape_int8_t_with_complexity` (`ppl_Rational_Box_t *pph`, `ppl_const_BD_Shape_int8_t_t ph`, `int complexity`)
- `int ppl_new_Rational_Box_from_BD_Shape_int16_t_with_complexity` (`ppl_Rational_Box_t *pph`, `ppl_const_BD_Shape_int16_t_t ph`, `int complexity`)
- `int ppl_new_Rational_Box_from_BD_Shape_int32_t_with_complexity` (`ppl_Rational_Box_t *pph`, `ppl_const_BD_Shape_int32_t_t ph`, `int complexity`)
- `int ppl_new_Rational_Box_from_BD_Shape_int64_t_with_complexity` (`ppl_Rational_Box_t *pph`, `ppl_const_BD_Shape_int64_t_t ph`, `int complexity`)
- `int ppl_new_Rational_Box_from_BD_Shape_mpz_class_with_complexity` (`ppl_Rational_Box_t *pph`, `ppl_const_BD_Shape_mpz_class_t ph`, `int complexity`)
- `int ppl_new_Rational_Box_from_BD_Shape_mpq_class_with_complexity` (`ppl_Rational_Box_t *pph`, `ppl_const_BD_Shape_mpq_class_t ph`, `int complexity`)
- `int ppl_new_Rational_Box_from_Octagonal_Shape_int8_t_with_complexity` (`ppl_Rational_Box_t *pph`, `ppl_const_Octagonal_Shape_int8_t_t ph`, `int complexity`)
- `int ppl_new_Rational_Box_from_Octagonal_Shape_int16_t_with_complexity` (`ppl_Rational_Box_t *pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`, `int complexity`)
- `int ppl_new_Rational_Box_from_Octagonal_Shape_int32_t_with_complexity` (`ppl_Rational_Box_t *pph`, `ppl_const_Octagonal_Shape_int32_t_t ph`, `int complexity`)
- `int ppl_new_Rational_Box_from_Octagonal_Shape_int64_t_with_complexity` (`ppl_Rational_Box_t *pph`, `ppl_const_Octagonal_Shape_int64_t_t ph`, `int complexity`)
- `int ppl_new_Rational_Box_from_Octagonal_Shape_mpz_class_with_complexity` (`ppl_Rational_Box_t *pph`, `ppl_const_Octagonal_Shape_mpz_class_t ph`, `int complexity`)
- `int ppl_new_Rational_Box_from_Octagonal_Shape_mpq_class_with_complexity` (`ppl_Rational_Box_t *pph`, `ppl_const_Octagonal_Shape_mpq_class_t ph`, `int complexity`)
- `int ppl_new_Rational_Box_from_C_Polyhedron_with_complexity` (`ppl_Rational_Box_t *pph`, `ppl_const_Polyhedron_t ph`, `int complexity`)
- `int ppl_new_Rational_Box_from_NNC_Polyhedron_with_complexity` (`ppl_Rational_Box_t *pph`, `ppl_const_Polyhedron_t ph`, `int complexity`)
- `int ppl_new_Rational_Box_from_Grid_with_complexity` (`ppl_Rational_Box_t *pph`, `ppl_const_Grid_t ph`, `int complexity`)
- `int ppl_new_Rational_Box_from_Float_Box_with_complexity` (`ppl_Rational_Box_t *pph`, `ppl_const_Float_Box_t ph`, `int complexity`)
- `int ppl_new_Rational_Box_from_BD_Shape_float_with_complexity` (`ppl_Rational_Box_t *pph`, `ppl_const_BD_Shape_float_t ph`, `int complexity`)
- `int ppl_new_Rational_Box_from_Octagonal_Shape_float_with_complexity` (`ppl_Rational_Box_t *pph`, `ppl_const_Octagonal_Shape_float_t ph`, `int complexity`)
- `int ppl_new_Rational_Box_from_Double_Box_with_complexity` (`ppl_Rational_Box_t *pph`, `ppl_const_Double_Box_t ph`, `int complexity`)
- `int ppl_new_Rational_Box_from_BD_Shape_double_with_complexity` (`ppl_Rational_Box_t *pph`, `ppl_const_BD_Shape_double_t ph`, `int complexity`)
- `int ppl_new_Rational_Box_from_Octagonal_Shape_double_with_complexity` (`ppl_Rational_Box_t *pph`, `ppl_const_Octagonal_Shape_double_t ph`, `int complexity`)

- int [ppl_new_Rational_Box_from_Long_Double_Box_with_complexity](#) (ppl_Rational_Box_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- int [ppl_new_Rational_Box_from_BD_Shape_long_double_with_complexity](#) (ppl_Rational_Box_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity)
- int [ppl_new_Rational_Box_from_Octagonal_Shape_long_double_with_complexity](#) (ppl_Rational_Box_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)
- int [ppl_new_Rational_Box_from_Constraint_System](#) (ppl_Rational_Box_t *pph, ppl_const_Constraint_System_t cs)
- int [ppl_new_Rational_Box_from_Congruence_System](#) (ppl_Rational_Box_t *pph, ppl_const_Congruence_System_t cs)
- int [ppl_new_Rational_Box_from_Generator_System](#) (ppl_Rational_Box_t *pph, ppl_const_Generator_System_t cs)
- int [ppl_Rational_Box_space_dimension](#) (ppl_const_Rational_Box_t ph, ppl_dimension_type *m)
- int [ppl_Rational_Box_affine_dimension](#) (ppl_const_Rational_Box_t ph, ppl_dimension_type *m)
- int [ppl_Rational_Box_relation_with_Constraint](#) (ppl_const_Rational_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Rational_Box_relation_with_Generator](#) (ppl_const_Rational_Box_t ph, ppl_const_Generator_t c)
- int [ppl_Rational_Box_relation_with_Congruence](#) (ppl_const_Rational_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Rational_Box_get_constraints](#) (ppl_const_Rational_Box_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_Rational_Box_get_congruences](#) (ppl_const_Rational_Box_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_Rational_Box_get_minimized_constraints](#) (ppl_const_Rational_Box_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_Rational_Box_get_minimized_congruences](#) (ppl_const_Rational_Box_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_Rational_Box_is_empty](#) (ppl_const_Rational_Box_t ph)
- int [ppl_Rational_Box_is_universe](#) (ppl_const_Rational_Box_t ph)
- int [ppl_Rational_Box_is_bounded](#) (ppl_const_Rational_Box_t ph)
- int [ppl_Rational_Box_contains_integer_point](#) (ppl_const_Rational_Box_t ph)
- int [ppl_Rational_Box_is_topologically_closed](#) (ppl_const_Rational_Box_t ph)
- int [ppl_Rational_Box_is_discrete](#) (ppl_const_Rational_Box_t ph)
- int [ppl_Rational_Box_topological_closure_assign](#) (ppl_Rational_Box_t ph)
- int [ppl_Rational_Box_bounds_from_above](#) (ppl_const_Rational_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Rational_Box_bounds_from_below](#) (ppl_const_Rational_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Rational_Box_maximize](#) (ppl_const_Rational_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Rational_Box_minimize](#) (ppl_const_Rational_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Rational_Box_maximize_with_point](#) (ppl_const_Rational_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Rational_Box_minimize_with_point](#) (ppl_const_Rational_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Rational_Box_frequency](#) (ppl_const_Rational_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)

- int [ppl_Rational_Box_contains_Rational_Box](#) (ppl_const_Rational_Box_t x, ppl_const_Rational_Box_t y)
- int [ppl_Rational_Box_strictly_contains_Rational_Box](#) (ppl_const_Rational_Box_t x, ppl_const_Rational_Box_t y)
- int [ppl_Rational_Box_is_disjoint_from_Rational_Box](#) (ppl_const_Rational_Box_t x, ppl_const_Rational_Box_t y)
- int [ppl_Rational_Box_equals_Rational_Box](#) (ppl_const_Rational_Box_t x, ppl_const_Rational_Box_t y)
- int [ppl_Rational_Box_OK](#) (ppl_const_Rational_Box_t ph)
- int [ppl_Rational_Box_add_constraint](#) (ppl_Rational_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Rational_Box_add_congruence](#) (ppl_Rational_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Rational_Box_add_constraints](#) (ppl_Rational_Box_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Rational_Box_add_congruences](#) (ppl_Rational_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Rational_Box_refine_with_constraint](#) (ppl_Rational_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Rational_Box_refine_with_congruence](#) (ppl_Rational_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Rational_Box_refine_with_constraints](#) (ppl_Rational_Box_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Rational_Box_refine_with_congruences](#) (ppl_Rational_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Rational_Box_intersection_assign](#) (ppl_Rational_Box_t x, ppl_const_Rational_Box_t y)
- int [ppl_Rational_Box_upper_bound_assign](#) (ppl_Rational_Box_t x, ppl_const_Rational_Box_t y)
- int [ppl_Rational_Box_difference_assign](#) (ppl_Rational_Box_t x, ppl_const_Rational_Box_t y)
- int [ppl_Rational_Box_concatenate_assign](#) (ppl_Rational_Box_t x, ppl_const_Rational_Box_t y)
- int [ppl_Rational_Box_time_elapse_assign](#) (ppl_Rational_Box_t x, ppl_const_Rational_Box_t y)
- int [ppl_Rational_Box_upper_bound_assign_if_exact](#) (ppl_Rational_Box_t x, ppl_const_Rational_Box_t y)
- int [ppl_Rational_Box_simplify_using_context_assign](#) (ppl_Rational_Box_t x, ppl_const_Rational_Box_t y)
- int [ppl_Rational_Box_constrains](#) (ppl_Rational_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Rational_Box_unconstrain_space_dimension](#) (ppl_Rational_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Rational_Box_unconstrain_space_dimensions](#) (ppl_Rational_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Rational_Box_affine_image](#) (ppl_Rational_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Rational_Box_affine_preimage](#) (ppl_Rational_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Rational_Box_bounded_affine_image](#) (ppl_Rational_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Rational_Box_bounded_affine_preimage](#) (ppl_Rational_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Rational_Box_generalized_affine_image](#) (ppl_Rational_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Rational_Box_generalized_affine_preimage](#) (ppl_Rational_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Rational_Box_generalized_affine_image_lhs_rhs](#) (ppl_Rational_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)

- `int ppl_Rational_Box_generalized_affine_preimage_lhs_rhs` (`ppl_Rational_Box_t` ph, `ppl_const_Linear_Expression_t` lhs, `enum ppl_enum_Constraint_Type` relsym, `ppl_const_Linear_Expression_t` rhs)
- `int ppl_Rational_Box_add_space_dimensions_and_embed` (`ppl_Rational_Box_t` ph, `ppl_dimension_type` d)
- `int ppl_Rational_Box_add_space_dimensions_and_project` (`ppl_Rational_Box_t` ph, `ppl_dimension_type` d)
- `int ppl_Rational_Box_remove_space_dimensions` (`ppl_Rational_Box_t` ph, `ppl_dimension_type` ds[], `size_t` n)
- `int ppl_Rational_Box_remove_higher_space_dimensions` (`ppl_Rational_Box_t` ph, `ppl_dimension_type` d)
- `int ppl_Rational_Box_expand_space_dimension` (`ppl_Rational_Box_t` ph, `ppl_dimension_type` d, `ppl_dimension_type` m)
- `int ppl_Rational_Box_fold_space_dimensions` (`ppl_Rational_Box_t` ph, `ppl_dimension_type` ds[], `size_t` n, `ppl_dimension_type` d)
- `int ppl_Rational_Box_map_space_dimensions` (`ppl_Rational_Box_t` ph, `ppl_dimension_type` maps[], `size_t` n)
- `int ppl_Rational_Box_drop_some_non_integer_points` (`ppl_Rational_Box_t` ph, `int` complexity)
- `int ppl_Rational_Box_drop_some_non_integer_points_2` (`ppl_Rational_Box_t` ph, `ppl_dimension_type` ds[], `size_t` n, `int` complexity)
- `int ppl_Rational_Box_external_memory_in_bytes` (`ppl_const_Rational_Box_t` ps, `size_t` *sz)
- `int ppl_Rational_Box_total_memory_in_bytes` (`ppl_const_Rational_Box_t` ps, `size_t` *sz)
- `int ppl_Rational_Box_CC76_widening_assign_with_tokens` (`ppl_Rational_Box_t` x, `ppl_const_Rational_Box_t` y, `unsigned` *tp)
- `int ppl_Rational_Box_CC76_widening_assign` (`ppl_Rational_Box_t` x, `ppl_const_Rational_Box_t` y)
- `int ppl_Rational_Box_widening_assign_with_tokens` (`ppl_Rational_Box_t` x, `ppl_const_Rational_Box_t` y, `unsigned` *tp)
- `int ppl_Rational_Box_widening_assign` (`ppl_Rational_Box_t` x, `ppl_const_Rational_Box_t` y)
- `int ppl_Rational_Box_limited_CC76_extrapolation_assign_with_tokens` (`ppl_Rational_Box_t` x, `ppl_const_Rational_Box_t` y, `ppl_const_Constraint_System_t` cs, `unsigned` *tp)
- `int ppl_Rational_Box_limited_CC76_extrapolation_assign` (`ppl_Rational_Box_t` x, `ppl_const_Rational_Box_t` y, `ppl_const_Constraint_System_t` cs)
- `int ppl_Rational_Box_linear_partition` (`ppl_const_Rational_Box_t` x, `ppl_const_Rational_Box_t` y, `ppl_Rational_Box_t` *p_inters, `ppl_Pointset_Powerset_NNC_Polyhedron_t` *p_rest)
- `int ppl_Rational_Box_wrap_assign` (`ppl_Rational_Box_t` ph, `ppl_dimension_type` ds[], `size_t` n, `enum ppl_enum_Bounded_Integer_Type_Width` w, `enum ppl_enum_Bounded_Integer_Type_Representation` r, `enum ppl_enum_Bounded_Integer_Type_Overflow` o, `const ppl_const_Constraint_System_t` *pcs, `unsigned` complexity_threshold, `int` wrap_individually)
- `int ppl_new_Rational_Box_recycle_Constraint_System` (`ppl_Rational_Box_t` *pph, `ppl_Constraint_System_t` cs)
- `int ppl_new_Rational_Box_recycle_Congruence_System` (`ppl_Rational_Box_t` *pph, `ppl_Congruence_System_t` cs)
- `int ppl_new_Rational_Box_recycle_Generator_System` (`ppl_Rational_Box_t` *pph, `ppl_Generator_System_t` cs)
- `int ppl_assign_Rational_Box_from_Rational_Box` (`ppl_Rational_Box_t` dst, `ppl_const_Rational_Box_t` src)
- `int ppl_Rational_Box_add_recycled_constraints` (`ppl_Rational_Box_t` ph, `ppl_Constraint_System_t` cs)
- `int ppl_Rational_Box_add_recycled_congruences` (`ppl_Rational_Box_t` ph, `ppl_Congruence_System_t` cs)
- `int ppl_termination_test_MS_Rational_Box` (`ppl_const_Rational_Box_t` pset)

- `int ppl_termination_test_PR_Rational_Box` (`ppl_const_Rational_Box_t` pset)
- `int ppl_one_affine_ranking_function_MS_Rational_Box` (`ppl_const_Rational_Box_t` pset, `ppl_Generator_t` point)
- `int ppl_one_affine_ranking_function_PR_Rational_Box` (`ppl_const_Rational_Box_t` pset, `ppl_Generator_t` point)
- `int ppl_all_affine_ranking_functions_MS_Rational_Box` (`ppl_const_Rational_Box_t` pset, `ppl_Polyhedron_t` ph)
- `int ppl_all_affine_ranking_functions_PR_Rational_Box` (`ppl_const_Rational_Box_t` pset, `ppl_Polyhedron_t` ph)
- `int ppl_termination_test_MS_Rational_Box_2` (`ppl_const_Rational_Box_t` pset_before, `ppl_const_Rational_Box_t` pset_after)
- `int ppl_termination_test_PR_Rational_Box_2` (`ppl_const_Rational_Box_t` pset_before, `ppl_const_Rational_Box_t` pset_after)
- `int ppl_one_affine_ranking_function_MS_Rational_Box_2` (`ppl_const_Rational_Box_t` pset_before, `ppl_const_Rational_Box_t` pset_after, `ppl_Generator_t` point)
- `int ppl_one_affine_ranking_function_PR_Rational_Box_2` (`ppl_const_Rational_Box_t` pset_before, `ppl_const_Rational_Box_t` pset_after, `ppl_Generator_t` point)
- `int ppl_all_affine_ranking_functions_MS_Rational_Box_2` (`ppl_const_Rational_Box_t` pset_before, `ppl_const_Rational_Box_t` pset_after, `ppl_Polyhedron_t` ph)
- `int ppl_all_affine_ranking_functions_PR_Rational_Box_2` (`ppl_const_Rational_Box_t` pset_before, `ppl_const_Rational_Box_t` pset_after, `ppl_Polyhedron_t` ph)

10.157.1 Detailed Description

Types and functions for `ppl_Rational_Box_tag`.

10.157.2 Friends And Related Function Documentation

10.157.2.1 `int ppl_all_affine_ranking_functions_MS_Rational_Box` (`ppl_const_Rational_Box_t` pset, `ppl_Polyhedron_t` ph) [**related**]

10.157.2.2 `int ppl_all_affine_ranking_functions_MS_Rational_Box_2` (`ppl_const_Rational_Box_t` pset_before, `ppl_const_Rational_Box_t` pset_after, `ppl_Polyhedron_t` ph) [**related**]

10.157.2.3 `int ppl_all_affine_ranking_functions_PR_Rational_Box` (`ppl_const_Rational_Box_t` pset, `ppl_Polyhedron_t` ph) [**related**]

10.157.2.4 `int ppl_all_affine_ranking_functions_PR_Rational_Box_2` (`ppl_const_Rational_Box_t` pset_before, `ppl_const_Rational_Box_t` pset_after, `ppl_Polyhedron_t` ph) [**related**]

- 10.157.2.5 `int ppl_assign_Rational_Box_from_Rational_Box (ppl_Rational_Box_t dst,
ppl_const_Rational_Box_t src)` [`related`]
- 10.157.2.6 `int ppl_delete_Rational_Box (ppl_const_Rational_Box_t ph)` [`related`]
- 10.157.2.7 `int ppl_new_Rational_Box_from_BD_Shape_double (ppl_Rational_Box_t * pph,
ppl_const_BD_Shape_double_t ph)` [`related`]
- 10.157.2.8 `int ppl_new_Rational_Box_from_BD_Shape_double_with_complexity
(ppl_Rational_Box_t * pph, ppl_const_BD_Shape_double_t ph, int complexity)`
[`related`]
- 10.157.2.9 `int ppl_new_Rational_Box_from_BD_Shape_float (ppl_Rational_Box_t * pph,
ppl_const_BD_Shape_float_t ph)` [`related`]
- 10.157.2.10 `int ppl_new_Rational_Box_from_BD_Shape_float_with_complexity
(ppl_Rational_Box_t * pph, ppl_const_BD_Shape_float_t ph, int complexity)`
[`related`]
- 10.157.2.11 `int ppl_new_Rational_Box_from_BD_Shape_int16_t (ppl_Rational_Box_t * pph,
ppl_const_BD_Shape_int16_t_t ph)` [`related`]
- 10.157.2.12 `int ppl_new_Rational_Box_from_BD_Shape_int16_t_with_complexity
(ppl_Rational_Box_t * pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)`
[`related`]
- 10.157.2.13 `int ppl_new_Rational_Box_from_BD_Shape_int32_t (ppl_Rational_Box_t * pph,
ppl_const_BD_Shape_int32_t_t ph)` [`related`]

- 10.157.2.14 `int ppl_new_Rational_Box_from_BD_Shape_int32_t_with_complexity`
(`ppl_Rational_Box_t *pph`, `ppl_const_BD_Shape_int32_t_t ph`, `int complexity`)
[related]
- 10.157.2.15 `int ppl_new_Rational_Box_from_BD_Shape_int64_t` (`ppl_Rational_Box_t *pph`,
`ppl_const_BD_Shape_int64_t_t ph`) [related]
- 10.157.2.16 `int ppl_new_Rational_Box_from_BD_Shape_int64_t_with_complexity`
(`ppl_Rational_Box_t *pph`, `ppl_const_BD_Shape_int64_t_t ph`, `int complexity`)
[related]
- 10.157.2.17 `int ppl_new_Rational_Box_from_BD_Shape_int8_t` (`ppl_Rational_Box_t *pph`,
`ppl_const_BD_Shape_int8_t_t ph`) [related]
- 10.157.2.18 `int ppl_new_Rational_Box_from_BD_Shape_int8_t_with_complexity`
(`ppl_Rational_Box_t *pph`, `ppl_const_BD_Shape_int8_t_t ph`, `int complexity`)
[related]
- 10.157.2.19 `int ppl_new_Rational_Box_from_BD_Shape_long_double` (`ppl_Rational_Box_t *pph`,
`ppl_const_BD_Shape_long_double_t_t ph`) [related]
- 10.157.2.20 `int ppl_new_Rational_Box_from_BD_Shape_long_double_with_complexity`
(`ppl_Rational_Box_t *pph`, `ppl_const_BD_Shape_long_double_t_t ph`, `int complexity`)
[related]
- 10.157.2.21 `int ppl_new_Rational_Box_from_BD_Shape_mpq_class` (`ppl_Rational_Box_t *pph`,
`ppl_const_BD_Shape_mpq_class_t_t ph`) [related]

- 10.157.2.22 `int ppl_new_Rational_Box_from_BD_Shape_mpq_class_with_complexity`
`(ppl_Rational_Box_t * pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)`
`[related]`
- 10.157.2.23 `int ppl_new_Rational_Box_from_BD_Shape_mpz_class` `(ppl_Rational_Box_t * pph,`
`ppl_const_BD_Shape_mpz_class_t ph)` `[related]`
- 10.157.2.24 `int ppl_new_Rational_Box_from_BD_Shape_mpz_class_with_complexity`
`(ppl_Rational_Box_t * pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)`
`[related]`
- 10.157.2.25 `int ppl_new_Rational_Box_from_C_Polyhedron` `(ppl_Rational_Box_t * pph,`
`ppl_const_Polyhedron_t ph)` `[related]`
- 10.157.2.26 `int ppl_new_Rational_Box_from_C_Polyhedron_with_complexity`
`(ppl_Rational_Box_t * pph, ppl_const_Polyhedron_t ph, int complexity)`
`[related]`
- 10.157.2.27 `int ppl_new_Rational_Box_from_Congruence_System` `(ppl_Rational_Box_t * pph,`
`ppl_const_Congruence_System_t cs)` `[related]`
- 10.157.2.28 `int ppl_new_Rational_Box_from_Constraint_System` `(ppl_Rational_Box_t * pph,`
`ppl_const_Constraint_System_t cs)` `[related]`
- 10.157.2.29 `int ppl_new_Rational_Box_from_Double_Box` `(ppl_Rational_Box_t * pph,`
`ppl_const_Double_Box_t ph)` `[related]`
- 10.157.2.30 `int ppl_new_Rational_Box_from_Double_Box_with_complexity` `(ppl_Rational_Box_t`
`* pph, ppl_const_Double_Box_t ph, int complexity)` `[related]`

- 10.157.2.31 `int ppl_new_Rational_Box_from_Float_Box (ppl_Rational_Box_t * pph,
ppl_const_Float_Box_t ph)` [`related`]
- 10.157.2.32 `int ppl_new_Rational_Box_from_Float_Box_with_complexity (ppl_Rational_Box_t *
pph, ppl_const_Float_Box_t ph, int complexity)` [`related`]
- 10.157.2.33 `int ppl_new_Rational_Box_from_Generator_System (ppl_Rational_Box_t * pph,
ppl_const_Generator_System_t cs)` [`related`]
- 10.157.2.34 `int ppl_new_Rational_Box_from_Grid (ppl_Rational_Box_t * pph, ppl_const_Grid_t
ph)` [`related`]
- 10.157.2.35 `int ppl_new_Rational_Box_from_Grid_with_complexity (ppl_Rational_Box_t * pph,
ppl_const_Grid_t ph, int complexity)` [`related`]
- 10.157.2.36 `int ppl_new_Rational_Box_from_Int16_Box (ppl_Rational_Box_t * pph,
ppl_const_Int16_Box_t ph)` [`related`]
- 10.157.2.37 `int ppl_new_Rational_Box_from_Int16_Box_with_complexity (ppl_Rational_Box_t *
pph, ppl_const_Int16_Box_t ph, int complexity)` [`related`]
- 10.157.2.38 `int ppl_new_Rational_Box_from_Int32_Box (ppl_Rational_Box_t * pph,
ppl_const_Int32_Box_t ph)` [`related`]
- 10.157.2.39 `int ppl_new_Rational_Box_from_Int32_Box_with_complexity (ppl_Rational_Box_t *
pph, ppl_const_Int32_Box_t ph, int complexity)` [`related`]

- 10.157.2.40 `int ppl_new_Rational_Box_from_Int64_Box (ppl_Rational_Box_t * pph,
ppl_const_Int64_Box_t ph)` [`related`]
- 10.157.2.41 `int ppl_new_Rational_Box_from_Int64_Box_with_complexity (ppl_Rational_Box_t *
pph, ppl_const_Int64_Box_t ph, int complexity)` [`related`]
- 10.157.2.42 `int ppl_new_Rational_Box_from_Int8_Box (ppl_Rational_Box_t * pph,
ppl_const_Int8_Box_t ph)` [`related`]
- 10.157.2.43 `int ppl_new_Rational_Box_from_Int8_Box_with_complexity (ppl_Rational_Box_t *
pph, ppl_const_Int8_Box_t ph, int complexity)` [`related`]
- 10.157.2.44 `int ppl_new_Rational_Box_from_Long_Double_Box (ppl_Rational_Box_t * pph,
ppl_const_Long_Double_Box_t ph)` [`related`]
- 10.157.2.45 `int ppl_new_Rational_Box_from_Long_Double_Box_with_complexity
(ppl_Rational_Box_t * pph, ppl_const_Long_Double_Box_t ph, int complexity)`
[`related`]
- 10.157.2.46 `int ppl_new_Rational_Box_from_NNC_Polyhedron (ppl_Rational_Box_t * pph,
ppl_const_Polyhedron_t ph)` [`related`]
- 10.157.2.47 `int ppl_new_Rational_Box_from_NNC_Polyhedron_with_complexity
(ppl_Rational_Box_t * pph, ppl_const_Polyhedron_t ph, int complexity)`
[`related`]
- 10.157.2.48 `int ppl_new_Rational_Box_from_Octagonal_Shape_double (ppl_Rational_Box_t *
pph, ppl_const_Octagonal_Shape_double_t ph)` [`related`]

- 10.157.2.49 `int ppl_new_Rational_Box_from_Octagonal_Shape_double_with_complexity`
(`ppl_Rational_Box_t * pph`, `ppl_const_Octagonal_Shape_double_t ph`, `int complexity`)
[related]
- 10.157.2.50 `int ppl_new_Rational_Box_from_Octagonal_Shape_float` (`ppl_Rational_Box_t * pph`,
`ppl_const_Octagonal_Shape_float_t ph`) [related]
- 10.157.2.51 `int ppl_new_Rational_Box_from_Octagonal_Shape_float_with_complexity`
(`ppl_Rational_Box_t * pph`, `ppl_const_Octagonal_Shape_float_t ph`, `int complexity`)
[related]
- 10.157.2.52 `int ppl_new_Rational_Box_from_Octagonal_Shape_int16_t` (`ppl_Rational_Box_t *`
`pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`) [related]
- 10.157.2.53 `int ppl_new_Rational_Box_from_Octagonal_Shape_int16_t_with_complexity`
(`ppl_Rational_Box_t * pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`, `int`
`complexity`) [related]
- 10.157.2.54 `int ppl_new_Rational_Box_from_Octagonal_Shape_int32_t` (`ppl_Rational_Box_t *`
`pph`, `ppl_const_Octagonal_Shape_int32_t_t ph`) [related]
- 10.157.2.55 `int ppl_new_Rational_Box_from_Octagonal_Shape_int32_t_with_complexity`
(`ppl_Rational_Box_t * pph`, `ppl_const_Octagonal_Shape_int32_t_t ph`, `int`
`complexity`) [related]
- 10.157.2.56 `int ppl_new_Rational_Box_from_Octagonal_Shape_int64_t` (`ppl_Rational_Box_t *`
`pph`, `ppl_const_Octagonal_Shape_int64_t_t ph`) [related]

- 10.157.2.57 `int ppl_new_Rational_Box_from_Octagonal_Shape_int64_t_with_complexity`
`(ppl_Rational_Box_t * pph, ppl_const_Octagonal_Shape_int64_t_t ph, int`
`complexity)` [`related`]
- 10.157.2.58 `int ppl_new_Rational_Box_from_Octagonal_Shape_int8_t` (`ppl_Rational_Box_t *`
`pph, ppl_const_Octagonal_Shape_int8_t_t ph)` [`related`]
- 10.157.2.59 `int ppl_new_Rational_Box_from_Octagonal_Shape_int8_t_with_complexity`
`(ppl_Rational_Box_t * pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)`
`[related]`
- 10.157.2.60 `int ppl_new_Rational_Box_from_Octagonal_Shape_long_double`
`(ppl_Rational_Box_t * pph, ppl_const_Octagonal_Shape_long_double_t_t ph)`
`[related]`
- 10.157.2.61 `int ppl_new_Rational_Box_from_Octagonal_Shape_long_double_with_complexity`
`(ppl_Rational_Box_t * pph, ppl_const_Octagonal_Shape_long_double_t_t ph, int`
`complexity)` [`related`]
- 10.157.2.62 `int ppl_new_Rational_Box_from_Octagonal_Shape_mpq_class` (`ppl_Rational_Box_t *`
`pph, ppl_const_Octagonal_Shape_mpq_class_t_t ph)` [`related`]
- 10.157.2.63 `int ppl_new_Rational_Box_from_Octagonal_Shape_mpq_class_with_complexity`
`(ppl_Rational_Box_t * pph, ppl_const_Octagonal_Shape_mpq_class_t_t ph, int`
`complexity)` [`related`]
- 10.157.2.64 `int ppl_new_Rational_Box_from_Octagonal_Shape_mpz_class` (`ppl_Rational_Box_t *`
`pph, ppl_const_Octagonal_Shape_mpz_class_t_t ph)` [`related`]

- 10.157.2.65 `int ppl_new_Rational_Box_from_Octagonal_Shape_mpz_class_with_complexity` (`ppl_Rational_Box_t * pph`, `ppl_const_Octagonal_Shape_mpz_class_t ph`, `int complexity`) [`related`]
- 10.157.2.66 `int ppl_new_Rational_Box_from_Rational_Box` (`ppl_Rational_Box_t * pph`, `ppl_const_Rational_Box_t ph`) [`related`]
- 10.157.2.67 `int ppl_new_Rational_Box_from_Rational_Box_with_complexity` (`ppl_Rational_Box_t * pph`, `ppl_const_Rational_Box_t ph`, `int complexity`) [`related`]
- 10.157.2.68 `int ppl_new_Rational_Box_from_space_dimension` (`ppl_Rational_Box_t * pph`, `ppl_dimension_type d`, `int empty`) [`related`]
- 10.157.2.69 `int ppl_new_Rational_Box_from_Uint16_Box` (`ppl_Rational_Box_t * pph`, `ppl_const_Uint16_Box_t ph`) [`related`]
- 10.157.2.70 `int ppl_new_Rational_Box_from_Uint16_Box_with_complexity` (`ppl_Rational_Box_t * pph`, `ppl_const_Uint16_Box_t ph`, `int complexity`) [`related`]
- 10.157.2.71 `int ppl_new_Rational_Box_from_Uint32_Box` (`ppl_Rational_Box_t * pph`, `ppl_const_Uint32_Box_t ph`) [`related`]
- 10.157.2.72 `int ppl_new_Rational_Box_from_Uint32_Box_with_complexity` (`ppl_Rational_Box_t * pph`, `ppl_const_Uint32_Box_t ph`, `int complexity`) [`related`]
- 10.157.2.73 `int ppl_new_Rational_Box_from_Uint64_Box` (`ppl_Rational_Box_t * pph`, `ppl_const_Uint64_Box_t ph`) [`related`]

- 10.157.2.74** `int ppl_new_Rational_Box_from_Uint64_Box_with_complexity (ppl_Rational_Box_t * pph, ppl_const_Uint64_Box_t ph, int complexity)` [**related**]
- 10.157.2.75** `int ppl_new_Rational_Box_from_Uint8_Box (ppl_Rational_Box_t * pph, ppl_const_Uint8_Box_t ph)` [**related**]
- 10.157.2.76** `int ppl_new_Rational_Box_from_Uint8_Box_with_complexity (ppl_Rational_Box_t * pph, ppl_const_Uint8_Box_t ph, int complexity)` [**related**]
- 10.157.2.77** `int ppl_new_Rational_Box_from_Z_Box (ppl_Rational_Box_t * pph, ppl_const_Z_Box_t ph)` [**related**]
- 10.157.2.78** `int ppl_new_Rational_Box_from_Z_Box_with_complexity (ppl_Rational_Box_t * pph, ppl_const_Z_Box_t ph, int complexity)` [**related**]
- 10.157.2.79** `int ppl_new_Rational_Box_recycle_Congruence_System (ppl_Rational_Box_t * pph, ppl_Congruence_System_t cs)` [**related**]
- 10.157.2.80** `int ppl_new_Rational_Box_recycle_Constraint_System (ppl_Rational_Box_t * pph, ppl_Constraint_System_t cs)` [**related**]
- 10.157.2.81** `int ppl_new_Rational_Box_recycle_Generator_System (ppl_Rational_Box_t * pph, ppl_Generator_System_t cs)` [**related**]
- 10.157.2.82** `int ppl_one_affine_ranking_function_MS_Rational_Box (ppl_const_Rational_Box_t pset, ppl_Generator_t point)` [**related**]

- 10.157.2.83 `int ppl_one_affine_ranking_function_MS_Rational_Box_2 (ppl_const_Rational_Box_t pset_before, ppl_const_Rational_Box_t pset_after, ppl_Generator_t point)` `[related]`
- 10.157.2.84 `int ppl_one_affine_ranking_function_PR_Rational_Box (ppl_const_Rational_Box_t pset, ppl_Generator_t point)` `[related]`
- 10.157.2.85 `int ppl_one_affine_ranking_function_PR_Rational_Box_2 (ppl_const_Rational_Box_t pset_before, ppl_const_Rational_Box_t pset_after, ppl_Generator_t point)` `[related]`
- 10.157.2.86 `int ppl_Rational_Box_add_congruence (ppl_Rational_Box_t ph, ppl_const_Congruence_t c)` `[related]`
- 10.157.2.87 `int ppl_Rational_Box_add_congruences (ppl_Rational_Box_t ph, ppl_const_Congruence_System_t cs)` `[related]`
- 10.157.2.88 `int ppl_Rational_Box_add_constraint (ppl_Rational_Box_t ph, ppl_const_Constraint_t c)` `[related]`
- 10.157.2.89 `int ppl_Rational_Box_add_constraints (ppl_Rational_Box_t ph, ppl_const_Constraint_System_t cs)` `[related]`
- 10.157.2.90 `int ppl_Rational_Box_add_recycled_congruences (ppl_Rational_Box_t ph, ppl_Congruence_System_t cs)` `[related]`
- 10.157.2.91 `int ppl_Rational_Box_add_recycled_constraints (ppl_Rational_Box_t ph, ppl_Constraint_System_t cs)` `[related]`

- 10.157.2.92 `int ppl_Rational_Box_add_space_dimensions_and_embed (ppl_Rational_Box_t ph,
ppl_dimension_type d)` [related]
- 10.157.2.93 `int ppl_Rational_Box_add_space_dimensions_and_project (ppl_Rational_Box_t ph,
ppl_dimension_type d)` [related]
- 10.157.2.94 `int ppl_Rational_Box_affine_dimension (ppl_const_Rational_Box_t ph,
ppl_dimension_type * m)` [related]
- 10.157.2.95 `int ppl_Rational_Box_affine_image (ppl_Rational_Box_t ph, ppl_dimension_type var,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [related]
- 10.157.2.96 `int ppl_Rational_Box_affine_preimage (ppl_Rational_Box_t ph, ppl_dimension_type
var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [related]
- 10.157.2.97 `int ppl_Rational_Box_bounded_affine_image (ppl_Rational_Box_t
ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb,
ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [related]
- 10.157.2.98 `int ppl_Rational_Box_bounded_affine_preimage (ppl_Rational_Box_t
ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb,
ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [related]
- 10.157.2.99 `int ppl_Rational_Box_bounds_from_above (ppl_const_Rational_Box_t ph,
ppl_const_Linear_Expression_t le)` [related]
- 10.157.2.100 `int ppl_Rational_Box_bounds_from_below (ppl_const_Rational_Box_t ph,
ppl_const_Linear_Expression_t le)` [related]

- 10.157.2.101** `int ppl_Rational_Box_CC76_widening_assign (ppl_Rational_Box_t x,
ppl_const_Rational_Box_t y)` [**related**]
- 10.157.2.102** `int ppl_Rational_Box_CC76_widening_assign_with_tokens (ppl_Rational_Box_t x,
ppl_const_Rational_Box_t y, unsigned * tp)` [**related**]
- 10.157.2.103** `int ppl_Rational_Box_concatenate_assign (ppl_Rational_Box_t x,
ppl_const_Rational_Box_t y)` [**related**]
- 10.157.2.104** `int ppl_Rational_Box_constrains (ppl_Rational_Box_t ph, ppl_dimension_type var)`
[**related**]
- 10.157.2.105** `int ppl_Rational_Box_contains_integer_point (ppl_const_Rational_Box_t ph)`
[**related**]
- 10.157.2.106** `int ppl_Rational_Box_contains_Rational_Box (ppl_const_Rational_Box_t x,
ppl_const_Rational_Box_t y)` [**related**]
- 10.157.2.107** `int ppl_Rational_Box_difference_assign (ppl_Rational_Box_t x,
ppl_const_Rational_Box_t y)` [**related**]
- 10.157.2.108** `int ppl_Rational_Box_drop_some_non_integer_points (ppl_Rational_Box_t ph, int
complexity)` [**related**]
- 10.157.2.109** `int ppl_Rational_Box_drop_some_non_integer_points_2 (ppl_Rational_Box_t ph,
ppl_dimension_type ds[], size_t n, int complexity)` [**related**]

- 10.157.2.110 `int ppl_Rational_Box_equals_Rational_Box (ppl_const_Rational_Box_t x,
ppl_const_Rational_Box_t y)` [`related`]
- 10.157.2.111 `int ppl_Rational_Box_expand_space_dimension (ppl_Rational_Box_t ph,
ppl_dimension_type d, ppl_dimension_type m)` [`related`]
- 10.157.2.112 `int ppl_Rational_Box_external_memory_in_bytes (ppl_const_Rational_Box_t ps,
size_t * sz)` [`related`]
- 10.157.2.113 `int ppl_Rational_Box_fold_space_dimensions (ppl_Rational_Box_t ph,
ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [`related`]
- 10.157.2.114 `int ppl_Rational_Box_frequency (ppl_const_Rational_Box_t ph,
ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t
ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)` [`related`]
- 10.157.2.115 `int ppl_Rational_Box_generalized_affine_image (ppl_Rational_Box_t
ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.157.2.116 `int ppl_Rational_Box_generalized_affine_image_lhs_rhs (ppl_Rational_Box_t ph,
ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym,
ppl_const_Linear_Expression_t rhs)` [`related`]
- 10.157.2.117 `int ppl_Rational_Box_generalized_affine_preimage (ppl_Rational_Box_t
ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]

- 10.157.2.118 `int ppl_Rational_Box_generalized_affine_preimage_lhs_rhs (ppl_Rational_Box_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` [related]
- 10.157.2.119 `int ppl_Rational_Box_get_congruences (ppl_const_Rational_Box_t ph, ppl_const_Congruence_System_t * pcs)` [related]
- 10.157.2.120 `int ppl_Rational_Box_get_constraints (ppl_const_Rational_Box_t ph, ppl_const_Constraint_System_t * pcs)` [related]
- 10.157.2.121 `int ppl_Rational_Box_get_minimized_congruences (ppl_const_Rational_Box_t ph, ppl_const_Congruence_System_t * pcs)` [related]
- 10.157.2.122 `int ppl_Rational_Box_get_minimized_constraints (ppl_const_Rational_Box_t ph, ppl_const_Constraint_System_t * pcs)` [related]
- 10.157.2.123 `int ppl_Rational_Box_intersection_assign (ppl_Rational_Box_t x, ppl_const_Rational_Box_t y)` [related]
- 10.157.2.124 `int ppl_Rational_Box_is_bounded (ppl_const_Rational_Box_t ph)` [related]
- 10.157.2.125 `int ppl_Rational_Box_is_discrete (ppl_const_Rational_Box_t ph)` [related]
- 10.157.2.126 `int ppl_Rational_Box_is_disjoint_from_Rational_Box (ppl_const_Rational_Box_t x, ppl_const_Rational_Box_t y)` [related]
- 10.157.2.127 `int ppl_Rational_Box_is_empty (ppl_const_Rational_Box_t ph)` [related]

- 10.157.2.128 `int ppl_Rational_Box_is_topologically_closed (ppl_const_Rational_Box_t ph)`
[related]
- 10.157.2.129 `int ppl_Rational_Box_is_universe (ppl_const_Rational_Box_t ph)` [related]
- 10.157.2.130 `int ppl_Rational_Box_limited_CC76_extrapolation_assign (ppl_Rational_Box_t x,
ppl_const_Rational_Box_t y, ppl_const_Constraint_System_t cs)` [related]
- 10.157.2.131 `int ppl_Rational_Box_limited_CC76_extrapolation_assign_with_tokens (ppl_
Rational_Box_t x, ppl_const_Rational_Box_t y, ppl_const_Constraint_System_t cs,
unsigned * tp)` [related]
- 10.157.2.132 `int ppl_Rational_Box_linear_partition (ppl_const_Rational_Box_t
x, ppl_const_Rational_Box_t y, ppl_Rational_Box_t * p_inters,
ppl_Pointset_Powerset_NNC_Polyhedron_t * p_rest)` [related]
- 10.157.2.133 `int ppl_Rational_Box_map_space_dimensions (ppl_Rational_Box_t ph,
ppl_dimension_type maps[], size_t n)` [related]
- 10.157.2.134 `int ppl_Rational_Box_maximize (ppl_const_Rational_Box_t ph,
ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d,
int * poptimum)` [related]
- 10.157.2.135 `int ppl_Rational_Box_maximize_with_point (ppl_const_Rational_Box_t ph,
ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d,
int * poptimum, ppl_Generator_t point)` [related]
- 10.157.2.136 `int ppl_Rational_Box_minimize (ppl_const_Rational_Box_t ph,
ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d,
int * poptimum)` [related]

- 10.157.2.137 `int ppl_Rational_Box_minimize_with_point (ppl_const_Rational_Box_t ph,
ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d,
int * poptimum, ppl_Generator_t point)` [related]
- 10.157.2.138 `int ppl_Rational_Box_OK (ppl_const_Rational_Box_t ph)` [related]
- 10.157.2.139 `int ppl_Rational_Box_refine_with_congruence (ppl_Rational_Box_t ph,
ppl_const_Congruence_t c)` [related]
- 10.157.2.140 `int ppl_Rational_Box_refine_with_congruences (ppl_Rational_Box_t ph,
ppl_const_Congruence_System_t cs)` [related]
- 10.157.2.141 `int ppl_Rational_Box_refine_with_constraint (ppl_Rational_Box_t ph,
ppl_const_Constraint_t c)` [related]
- 10.157.2.142 `int ppl_Rational_Box_refine_with_constraints (ppl_Rational_Box_t ph,
ppl_const_Constraint_System_t cs)` [related]
- 10.157.2.143 `int ppl_Rational_Box_relation_with_Congruence (ppl_const_Rational_Box_t ph,
ppl_const_Congruence_t c)` [related]
- 10.157.2.144 `int ppl_Rational_Box_relation_with_Constraint (ppl_const_Rational_Box_t ph,
ppl_const_Constraint_t c)` [related]
- 10.157.2.145 `int ppl_Rational_Box_relation_with_Generator (ppl_const_Rational_Box_t ph,
ppl_const_Generator_t c)` [related]

- 10.157.2.146 `int ppl_Rational_Box_remove_higher_space_dimensions (ppl_Rational_Box_t ph,
ppl_dimension_type d)` [`related`]
- 10.157.2.147 `int ppl_Rational_Box_remove_space_dimensions (ppl_Rational_Box_t ph,
ppl_dimension_type ds[], size_t n)` [`related`]
- 10.157.2.148 `int ppl_Rational_Box_simplify_using_context_assign (ppl_Rational_Box_t x,
ppl_const_Rational_Box_t y)` [`related`]
- 10.157.2.149 `int ppl_Rational_Box_space_dimension (ppl_const_Rational_Box_t ph,
ppl_dimension_type * m)` [`related`]
- 10.157.2.150 `int ppl_Rational_Box_strictly_contains_Rational_Box (ppl_const_Rational_Box_t x,
ppl_const_Rational_Box_t y)` [`related`]
- 10.157.2.151 `int ppl_Rational_Box_time_elapse_assign (ppl_Rational_Box_t x,
ppl_const_Rational_Box_t y)` [`related`]
- 10.157.2.152 `int ppl_Rational_Box_topological_closure_assign (ppl_Rational_Box_t ph)`
[`related`]
- 10.157.2.153 `int ppl_Rational_Box_total_memory_in_bytes (ppl_const_Rational_Box_t ps, size_t
* sz)` [`related`]
- 10.157.2.154 `int ppl_Rational_Box_unconstrain_space_dimension (ppl_Rational_Box_t ph,
ppl_dimension_type var)` [`related`]

- 10.157.2.155 `int ppl_Rational_Box_unconstrain_space_dimensions (ppl_Rational_Box_t ph,
ppl_dimension_type ds[], size_t n)` [**related**]
- 10.157.2.156 `int ppl_Rational_Box_upper_bound_assign (ppl_Rational_Box_t x,
ppl_const_Rational_Box_t y)` [**related**]
- 10.157.2.157 `int ppl_Rational_Box_upper_bound_assign_if_exact (ppl_Rational_Box_t x,
ppl_const_Rational_Box_t y)` [**related**]
- 10.157.2.158 `int ppl_Rational_Box_widening_assign (ppl_Rational_Box_t x,
ppl_const_Rational_Box_t y)` [**related**]
- 10.157.2.159 `int ppl_Rational_Box_widening_assign_with_tokens (ppl_Rational_Box_t x,
ppl_const_Rational_Box_t y, unsigned * tp)` [**related**]
- 10.157.2.160 `int ppl_Rational_Box_wrap_assign (ppl_Rational_Box_t ph, ppl_dimension_type
ds[], size_t n, enum ppl_enum_Bounded_Integer_Type_Width w, enum
ppl_enum_Bounded_Integer_Type_Representation r, enum ppl_enum_Bounded_
Integer_Type_Overflow o, const ppl_const_Constraint_System_t * pcs, unsigned
complexity_threshold, int wrap_individually)` [**related**]
- 10.157.2.161 `int ppl_termination_test_MS_Rational_Box (ppl_const_Rational_Box_t pset)`
[**related**]
- 10.157.2.162 `int ppl_termination_test_MS_Rational_Box_2 (ppl_const_Rational_Box_t
pset_before, ppl_const_Rational_Box_t pset_after)` [**related**]
- 10.157.2.163 `int ppl_termination_test_PR_Rational_Box (ppl_const_Rational_Box_t pset)`
[**related**]

10.157.2.164 `int ppl_termination_test_PR_Rational_Box_2 (ppl_const_Rational_Box_t pset_before, ppl_const_Rational_Box_t pset_after)` [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.158 `ppl_Uint16_Box_tag` Interface Reference

Types and functions for [ppl_Uint16_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Uint16_Box (ppl_const_Uint16_Box_t ph)`
- `int ppl_new_Uint16_Box_from_space_dimension (ppl_Uint16_Box_t *pph, ppl_dimension_type d, int empty)`
- `int ppl_new_Uint16_Box_from_Int8_Box (ppl_Uint16_Box_t *pph, ppl_const_Int8_Box_t ph)`
- `int ppl_new_Uint16_Box_from_Int16_Box (ppl_Uint16_Box_t *pph, ppl_const_Int16_Box_t ph)`
- `int ppl_new_Uint16_Box_from_Int32_Box (ppl_Uint16_Box_t *pph, ppl_const_Int32_Box_t ph)`
- `int ppl_new_Uint16_Box_from_Int64_Box (ppl_Uint16_Box_t *pph, ppl_const_Int64_Box_t ph)`
- `int ppl_new_Uint16_Box_from_Uint8_Box (ppl_Uint16_Box_t *pph, ppl_const_Uint8_Box_t ph)`
- `int ppl_new_Uint16_Box_from_Uint16_Box (ppl_Uint16_Box_t *pph, ppl_const_Uint16_Box_t ph)`
- `int ppl_new_Uint16_Box_from_Uint32_Box (ppl_Uint16_Box_t *pph, ppl_const_Uint32_Box_t ph)`
- `int ppl_new_Uint16_Box_from_Uint64_Box (ppl_Uint16_Box_t *pph, ppl_const_Uint64_Box_t ph)`
- `int ppl_new_Uint16_Box_from_Z_Box (ppl_Uint16_Box_t *pph, ppl_const_Z_Box_t ph)`
- `int ppl_new_Uint16_Box_from_Rational_Box (ppl_Uint16_Box_t *pph, ppl_const_Rational_Box_t ph)`
- `int ppl_new_Uint16_Box_from_BD_Shape_int8_t (ppl_Uint16_Box_t *pph, ppl_const_BD_Shape_int8_t_t ph)`
- `int ppl_new_Uint16_Box_from_BD_Shape_int16_t (ppl_Uint16_Box_t *pph, ppl_const_BD_Shape_int16_t_t ph)`
- `int ppl_new_Uint16_Box_from_BD_Shape_int32_t (ppl_Uint16_Box_t *pph, ppl_const_BD_Shape_int32_t_t ph)`
- `int ppl_new_Uint16_Box_from_BD_Shape_int64_t (ppl_Uint16_Box_t *pph, ppl_const_BD_Shape_int64_t_t ph)`
- `int ppl_new_Uint16_Box_from_BD_Shape_mpz_class (ppl_Uint16_Box_t *pph, ppl_const_BD_Shape_mpz_class_t ph)`
- `int ppl_new_Uint16_Box_from_BD_Shape_mpq_class (ppl_Uint16_Box_t *pph, ppl_const_BD_Shape_mpq_class_t ph)`
- `int ppl_new_Uint16_Box_from_Octagonal_Shape_int8_t (ppl_Uint16_Box_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph)`
- `int ppl_new_Uint16_Box_from_Octagonal_Shape_int16_t (ppl_Uint16_Box_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph)`

- int [ppl_new_Uint16_Box_from_Octagonal_Shape_int32_t](#) (ppl_Uint16_Box_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph)
- int [ppl_new_Uint16_Box_from_Octagonal_Shape_int64_t](#) (ppl_Uint16_Box_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph)
- int [ppl_new_Uint16_Box_from_Octagonal_Shape_mpz_class](#) (ppl_Uint16_Box_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph)
- int [ppl_new_Uint16_Box_from_Octagonal_Shape_mpq_class](#) (ppl_Uint16_Box_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph)
- int [ppl_new_Uint16_Box_from_C_Polyhedron](#) (ppl_Uint16_Box_t *pph, ppl_const_Polyhedron_t ph)
- int [ppl_new_Uint16_Box_from_NNC_Polyhedron](#) (ppl_Uint16_Box_t *pph, ppl_const_Polyhedron_t ph)
- int [ppl_new_Uint16_Box_from_Grid](#) (ppl_Uint16_Box_t *pph, ppl_const_Grid_t ph)
- int [ppl_new_Uint16_Box_from_Float_Box](#) (ppl_Uint16_Box_t *pph, ppl_const_Float_Box_t ph)
- int [ppl_new_Uint16_Box_from_BD_Shape_float](#) (ppl_Uint16_Box_t *pph, ppl_const_BD_Shape_float_t ph)
- int [ppl_new_Uint16_Box_from_Octagonal_Shape_float](#) (ppl_Uint16_Box_t *pph, ppl_const_Octagonal_Shape_float_t ph)
- int [ppl_new_Uint16_Box_from_Double_Box](#) (ppl_Uint16_Box_t *pph, ppl_const_Double_Box_t ph)
- int [ppl_new_Uint16_Box_from_BD_Shape_double](#) (ppl_Uint16_Box_t *pph, ppl_const_BD_Shape_double_t ph)
- int [ppl_new_Uint16_Box_from_Octagonal_Shape_double](#) (ppl_Uint16_Box_t *pph, ppl_const_Octagonal_Shape_double_t ph)
- int [ppl_new_Uint16_Box_from_Long_Double_Box](#) (ppl_Uint16_Box_t *pph, ppl_const_Long_Double_Box_t ph)
- int [ppl_new_Uint16_Box_from_BD_Shape_long_double](#) (ppl_Uint16_Box_t *pph, ppl_const_BD_Shape_long_double_t ph)
- int [ppl_new_Uint16_Box_from_Octagonal_Shape_long_double](#) (ppl_Uint16_Box_t *pph, ppl_const_Octagonal_Shape_long_double_t ph)
- int [ppl_new_Uint16_Box_from_Int8_Box_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_Int8_Box_t ph, int complexity)
- int [ppl_new_Uint16_Box_from_Int16_Box_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_Int16_Box_t ph, int complexity)
- int [ppl_new_Uint16_Box_from_Int32_Box_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_Int32_Box_t ph, int complexity)
- int [ppl_new_Uint16_Box_from_Int64_Box_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_Int64_Box_t ph, int complexity)
- int [ppl_new_Uint16_Box_from_Uint8_Box_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_Uint8_Box_t ph, int complexity)
- int [ppl_new_Uint16_Box_from_Uint16_Box_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_Uint16_Box_t ph, int complexity)
- int [ppl_new_Uint16_Box_from_Uint32_Box_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_Uint32_Box_t ph, int complexity)
- int [ppl_new_Uint16_Box_from_Uint64_Box_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_Uint64_Box_t ph, int complexity)
- int [ppl_new_Uint16_Box_from_Z_Box_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_Z_Box_t ph, int complexity)
- int [ppl_new_Uint16_Box_from_Rational_Box_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_Rational_Box_t ph, int complexity)
- int [ppl_new_Uint16_Box_from_BD_Shape_int8_t_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)

- [int ppl_new_Uint16_Box_from_BD_Shape_int16_t_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)
- [int ppl_new_Uint16_Box_from_BD_Shape_int32_t_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)
- [int ppl_new_Uint16_Box_from_BD_Shape_int64_t_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)
- [int ppl_new_Uint16_Box_from_BD_Shape_mpz_class_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)
- [int ppl_new_Uint16_Box_from_BD_Shape_mpq_class_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)
- [int ppl_new_Uint16_Box_from_Octagonal_Shape_int8_t_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)
- [int ppl_new_Uint16_Box_from_Octagonal_Shape_int16_t_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)
- [int ppl_new_Uint16_Box_from_Octagonal_Shape_int32_t_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)
- [int ppl_new_Uint16_Box_from_Octagonal_Shape_int64_t_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)
- [int ppl_new_Uint16_Box_from_Octagonal_Shape_mpz_class_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)
- [int ppl_new_Uint16_Box_from_Octagonal_Shape_mpq_class_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)
- [int ppl_new_Uint16_Box_from_C_Polyhedron_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- [int ppl_new_Uint16_Box_from_NNC_Polyhedron_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- [int ppl_new_Uint16_Box_from_Grid_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_Grid_t ph, int complexity)
- [int ppl_new_Uint16_Box_from_Float_Box_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_Float_Box_t ph, int complexity)
- [int ppl_new_Uint16_Box_from_BD_Shape_float_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_BD_Shape_float_t ph, int complexity)
- [int ppl_new_Uint16_Box_from_Octagonal_Shape_float_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)
- [int ppl_new_Uint16_Box_from_Double_Box_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_Double_Box_t ph, int complexity)
- [int ppl_new_Uint16_Box_from_BD_Shape_double_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_BD_Shape_double_t ph, int complexity)
- [int ppl_new_Uint16_Box_from_Octagonal_Shape_double_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)
- [int ppl_new_Uint16_Box_from_Long_Double_Box_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- [int ppl_new_Uint16_Box_from_BD_Shape_long_double_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity)
- [int ppl_new_Uint16_Box_from_Octagonal_Shape_long_double_with_complexity](#) (ppl_Uint16_Box_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)
- [int ppl_new_Uint16_Box_from_Constraint_System](#) (ppl_Uint16_Box_t *pph, ppl_const_Constraint_System_t cs)
- [int ppl_new_Uint16_Box_from_Congruence_System](#) (ppl_Uint16_Box_t *pph, ppl_const_Congruence_System_t cs)
- [int ppl_new_Uint16_Box_from_Generator_System](#) (ppl_Uint16_Box_t *pph, ppl_const_Generator_System_t cs)

- int [ppl_Uint16_Box_space_dimension](#) (ppl_const_Uint16_Box_t ph, [ppl_dimension_type](#) *m)
- int [ppl_Uint16_Box_affine_dimension](#) (ppl_const_Uint16_Box_t ph, [ppl_dimension_type](#) *m)
- int [ppl_Uint16_Box_relation_with_Constraint](#) (ppl_const_Uint16_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Uint16_Box_relation_with_Generator](#) (ppl_const_Uint16_Box_t ph, ppl_const_Generator_t c)
- int [ppl_Uint16_Box_relation_with_Congruence](#) (ppl_const_Uint16_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Uint16_Box_get_constraints](#) (ppl_const_Uint16_Box_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_Uint16_Box_get_congruences](#) (ppl_const_Uint16_Box_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_Uint16_Box_get_minimized_constraints](#) (ppl_const_Uint16_Box_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_Uint16_Box_get_minimized_congruences](#) (ppl_const_Uint16_Box_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_Uint16_Box_is_empty](#) (ppl_const_Uint16_Box_t ph)
- int [ppl_Uint16_Box_is_universe](#) (ppl_const_Uint16_Box_t ph)
- int [ppl_Uint16_Box_is_bounded](#) (ppl_const_Uint16_Box_t ph)
- int [ppl_Uint16_Box_contains_integer_point](#) (ppl_const_Uint16_Box_t ph)
- int [ppl_Uint16_Box_is_topologically_closed](#) (ppl_const_Uint16_Box_t ph)
- int [ppl_Uint16_Box_is_discrete](#) (ppl_const_Uint16_Box_t ph)
- int [ppl_Uint16_Box_topological_closure_assign](#) (ppl_Uint16_Box_t ph)
- int [ppl_Uint16_Box_bounds_from_above](#) (ppl_const_Uint16_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Uint16_Box_bounds_from_below](#) (ppl_const_Uint16_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Uint16_Box_maximize](#) (ppl_const_Uint16_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Uint16_Box_minimize](#) (ppl_const_Uint16_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Uint16_Box_maximize_with_point](#) (ppl_const_Uint16_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Uint16_Box_minimize_with_point](#) (ppl_const_Uint16_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Uint16_Box_frequency](#) (ppl_const_Uint16_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)
- int [ppl_Uint16_Box_contains_Uint16_Box](#) (ppl_const_Uint16_Box_t x, ppl_const_Uint16_Box_t y)
- int [ppl_Uint16_Box_strictly_contains_Uint16_Box](#) (ppl_const_Uint16_Box_t x, ppl_const_Uint16_Box_t y)
- int [ppl_Uint16_Box_is_disjoint_from_Uint16_Box](#) (ppl_const_Uint16_Box_t x, ppl_const_Uint16_Box_t y)
- int [ppl_Uint16_Box_equals_Uint16_Box](#) (ppl_const_Uint16_Box_t x, ppl_const_Uint16_Box_t y)
- int [ppl_Uint16_Box_OK](#) (ppl_const_Uint16_Box_t ph)
- int [ppl_Uint16_Box_add_constraint](#) (ppl_Uint16_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Uint16_Box_add_congruence](#) (ppl_Uint16_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Uint16_Box_add_constraints](#) (ppl_Uint16_Box_t ph, ppl_const_Constraint_System_t cs)

- int [ppl_Uint16_Box_add_congruences](#) (ppl_Uint16_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Uint16_Box_refine_with_constraint](#) (ppl_Uint16_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Uint16_Box_refine_with_congruence](#) (ppl_Uint16_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Uint16_Box_refine_with_constraints](#) (ppl_Uint16_Box_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Uint16_Box_refine_with_congruences](#) (ppl_Uint16_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Uint16_Box_intersection_assign](#) (ppl_Uint16_Box_t x, ppl_const_Uint16_Box_t y)
- int [ppl_Uint16_Box_upper_bound_assign](#) (ppl_Uint16_Box_t x, ppl_const_Uint16_Box_t y)
- int [ppl_Uint16_Box_difference_assign](#) (ppl_Uint16_Box_t x, ppl_const_Uint16_Box_t y)
- int [ppl_Uint16_Box_concatenate_assign](#) (ppl_Uint16_Box_t x, ppl_const_Uint16_Box_t y)
- int [ppl_Uint16_Box_time_elapse_assign](#) (ppl_Uint16_Box_t x, ppl_const_Uint16_Box_t y)
- int [ppl_Uint16_Box_upper_bound_assign_if_exact](#) (ppl_Uint16_Box_t x, ppl_const_Uint16_Box_t y)
- int [ppl_Uint16_Box_simplify_using_context_assign](#) (ppl_Uint16_Box_t x, ppl_const_Uint16_Box_t y)
- int [ppl_Uint16_Box_constrains](#) (ppl_Uint16_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Uint16_Box_unconstrain_space_dimension](#) (ppl_Uint16_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Uint16_Box_unconstrain_space_dimensions](#) (ppl_Uint16_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Uint16_Box_affine_image](#) (ppl_Uint16_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Uint16_Box_affine_preimage](#) (ppl_Uint16_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Uint16_Box_bounded_affine_image](#) (ppl_Uint16_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Uint16_Box_bounded_affine_preimage](#) (ppl_Uint16_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Uint16_Box_generalized_affine_image](#) (ppl_Uint16_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Uint16_Box_generalized_affine_preimage](#) (ppl_Uint16_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Uint16_Box_generalized_affine_image_lhs_rhs](#) (ppl_Uint16_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Uint16_Box_generalized_affine_preimage_lhs_rhs](#) (ppl_Uint16_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Uint16_Box_add_space_dimensions_and_embed](#) (ppl_Uint16_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Uint16_Box_add_space_dimensions_and_project](#) (ppl_Uint16_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Uint16_Box_remove_space_dimensions](#) (ppl_Uint16_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Uint16_Box_remove_higher_space_dimensions](#) (ppl_Uint16_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Uint16_Box_expand_space_dimension](#) (ppl_Uint16_Box_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Uint16_Box_fold_space_dimensions](#) (ppl_Uint16_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)

- int [ppl_Uint16_Box_map_space_dimensions](#) (ppl_Uint16_Box_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_Uint16_Box_drop_some_non_integer_points](#) (ppl_Uint16_Box_t ph, int complexity)
- int [ppl_Uint16_Box_drop_some_non_integer_points_2](#) (ppl_Uint16_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_Uint16_Box_external_memory_in_bytes](#) (ppl_const_Uint16_Box_t ps, size_t *sz)
- int [ppl_Uint16_Box_total_memory_in_bytes](#) (ppl_const_Uint16_Box_t ps, size_t *sz)
- int [ppl_Uint16_Box_CC76_widening_assign_with_tokens](#) (ppl_Uint16_Box_t x, ppl_const_Uint16_Box_t y, unsigned *tp)
- int [ppl_Uint16_Box_CC76_widening_assign](#) (ppl_Uint16_Box_t x, ppl_const_Uint16_Box_t y)
- int [ppl_Uint16_Box_widening_assign_with_tokens](#) (ppl_Uint16_Box_t x, ppl_const_Uint16_Box_t y, unsigned *tp)
- int [ppl_Uint16_Box_widening_assign](#) (ppl_Uint16_Box_t x, ppl_const_Uint16_Box_t y)
- int [ppl_Uint16_Box_limited_CC76_extrapolation_assign_with_tokens](#) (ppl_Uint16_Box_t x, ppl_const_Uint16_Box_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- int [ppl_Uint16_Box_limited_CC76_extrapolation_assign](#) (ppl_Uint16_Box_t x, ppl_const_Uint16_Box_t y, ppl_const_Constraint_System_t cs)
- int [ppl_Uint16_Box_linear_partition](#) (ppl_const_Uint16_Box_t x, ppl_const_Uint16_Box_t y, ppl_Uint16_Box_t *p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest)
- int [ppl_Uint16_Box_wrap_assign](#) (ppl_Uint16_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, enum [ppl_enum_Bounded_Integer_Type_Width](#) w, enum [ppl_enum_Bounded_Integer_Type_Representation](#) r, enum [ppl_enum_Bounded_Integer_Type_Overflow](#) o, const ppl_const_Constraint_System_t *pcs, unsigned complexity_threshold, int wrap_individually)
- int [ppl_new_Uint16_Box_recycle_Constraint_System](#) (ppl_Uint16_Box_t *pph, ppl_Constraint_System_t cs)
- int [ppl_new_Uint16_Box_recycle_Congruence_System](#) (ppl_Uint16_Box_t *pph, ppl_Congruence_System_t cs)
- int [ppl_new_Uint16_Box_recycle_Generator_System](#) (ppl_Uint16_Box_t *pph, ppl_Generator_System_t cs)
- int [ppl_assign_Uint16_Box_from_Uint16_Box](#) (ppl_Uint16_Box_t dst, ppl_const_Uint16_Box_t src)
- int [ppl_Uint16_Box_add_recycled_constraints](#) (ppl_Uint16_Box_t ph, ppl_Constraint_System_t cs)
- int [ppl_Uint16_Box_add_recycled_congruences](#) (ppl_Uint16_Box_t ph, ppl_Congruence_System_t cs)
- int [ppl_termination_test_MS_Uint16_Box](#) (ppl_const_Uint16_Box_t pset)
- int [ppl_termination_test_PR_Uint16_Box](#) (ppl_const_Uint16_Box_t pset)
- int [ppl_one_affine_ranking_function_MS_Uint16_Box](#) (ppl_const_Uint16_Box_t pset, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_Uint16_Box](#) (ppl_const_Uint16_Box_t pset, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_Uint16_Box](#) (ppl_const_Uint16_Box_t pset, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_Uint16_Box](#) (ppl_const_Uint16_Box_t pset, ppl_Polyhedron_t ph)
- int [ppl_termination_test_MS_Uint16_Box_2](#) (ppl_const_Uint16_Box_t pset_before, ppl_const_Uint16_Box_t pset_after)
- int [ppl_termination_test_PR_Uint16_Box_2](#) (ppl_const_Uint16_Box_t pset_before, ppl_const_Uint16_Box_t pset_after)
- int [ppl_one_affine_ranking_function_MS_Uint16_Box_2](#) (ppl_const_Uint16_Box_t pset_before, ppl_const_Uint16_Box_t pset_after, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_Uint16_Box_2](#) (ppl_const_Uint16_Box_t pset_before, ppl_const_Uint16_Box_t pset_after, ppl_Generator_t point)

- int [ppl_all_affine_ranking_functions_MS_Uint16_Box_2](#) (ppl_const_Uint16_Box_t pset_before, ppl_const_Uint16_Box_t pset_after, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_Uint16_Box_2](#) (ppl_const_Uint16_Box_t pset_before, ppl_const_Uint16_Box_t pset_after, ppl_Polyhedron_t ph)

10.158.1 Detailed Description

Types and functions for [ppl_Uint16_Box_tag](#).

10.158.2 Friends And Related Function Documentation

10.158.2.1 int [ppl_all_affine_ranking_functions_MS_Uint16_Box](#) (ppl_const_Uint16_Box_t *pset*, ppl_Polyhedron_t *ph*) [**related**]

10.158.2.2 int [ppl_all_affine_ranking_functions_MS_Uint16_Box_2](#) (ppl_const_Uint16_Box_t *pset_before*, ppl_const_Uint16_Box_t *pset_after*, ppl_Polyhedron_t *ph*) [**related**]

10.158.2.3 int [ppl_all_affine_ranking_functions_PR_Uint16_Box](#) (ppl_const_Uint16_Box_t *pset*, ppl_Polyhedron_t *ph*) [**related**]

10.158.2.4 int [ppl_all_affine_ranking_functions_PR_Uint16_Box_2](#) (ppl_const_Uint16_Box_t *pset_before*, ppl_const_Uint16_Box_t *pset_after*, ppl_Polyhedron_t *ph*) [**related**]

10.158.2.5 int [ppl_assign_Uint16_Box_from_Uint16_Box](#) (ppl_Uint16_Box_t *dst*, ppl_const_Uint16_Box_t *src*) [**related**]

10.158.2.6 int [ppl_delete_Uint16_Box](#) (ppl_const_Uint16_Box_t *ph*) [**related**]

10.158.2.7 int [ppl_new_Uint16_Box_from_BD_Shape_double](#) (ppl_Uint16_Box_t * *pph*, ppl_const_BD_Shape_double_t *ph*) [**related**]

- 10.158.2.8** `int ppl_new_Uint16_Box_from_BD_Shape_double_with_complexity`
(`ppl_Uint16_Box_t * pph`, `ppl_const_BD_Shape_double_t ph`, `int complexity`)
[related]
- 10.158.2.9** `int ppl_new_Uint16_Box_from_BD_Shape_float` (`ppl_Uint16_Box_t * pph`,
`ppl_const_BD_Shape_float_t ph`) [related]
- 10.158.2.10** `int ppl_new_Uint16_Box_from_BD_Shape_float_with_complexity` (`ppl_Uint16_Box_t`
`* pph`, `ppl_const_BD_Shape_float_t ph`, `int complexity`) [related]
- 10.158.2.11** `int ppl_new_Uint16_Box_from_BD_Shape_int16_t` (`ppl_Uint16_Box_t * pph`,
`ppl_const_BD_Shape_int16_t_t ph`) [related]
- 10.158.2.12** `int ppl_new_Uint16_Box_from_BD_Shape_int16_t_with_complexity`
(`ppl_Uint16_Box_t * pph`, `ppl_const_BD_Shape_int16_t_t ph`, `int complexity`)
[related]
- 10.158.2.13** `int ppl_new_Uint16_Box_from_BD_Shape_int32_t` (`ppl_Uint16_Box_t * pph`,
`ppl_const_BD_Shape_int32_t_t ph`) [related]
- 10.158.2.14** `int ppl_new_Uint16_Box_from_BD_Shape_int32_t_with_complexity`
(`ppl_Uint16_Box_t * pph`, `ppl_const_BD_Shape_int32_t_t ph`, `int complexity`)
[related]
- 10.158.2.15** `int ppl_new_Uint16_Box_from_BD_Shape_int64_t` (`ppl_Uint16_Box_t * pph`,
`ppl_const_BD_Shape_int64_t_t ph`) [related]
- 10.158.2.16** `int ppl_new_Uint16_Box_from_BD_Shape_int64_t_with_complexity`
(`ppl_Uint16_Box_t * pph`, `ppl_const_BD_Shape_int64_t_t ph`, `int complexity`)
[related]

- 10.158.2.17 `int ppl_new_Uint16_Box_from_BD_Shape_int8_t (ppl_Uint16_Box_t * pph,
ppl_const_BD_Shape_int8_t ph)` [`related`]
- 10.158.2.18 `int ppl_new_Uint16_Box_from_BD_Shape_int8_t_with_complexity
(ppl_Uint16_Box_t * pph, ppl_const_BD_Shape_int8_t ph, int complexity)`
[`related`]
- 10.158.2.19 `int ppl_new_Uint16_Box_from_BD_Shape_long_double (ppl_Uint16_Box_t * pph,
ppl_const_BD_Shape_long_double_t ph)` [`related`]
- 10.158.2.20 `int ppl_new_Uint16_Box_from_BD_Shape_long_double_with_complexity
(ppl_Uint16_Box_t * pph, ppl_const_BD_Shape_long_double_t ph, int complexity)`
[`related`]
- 10.158.2.21 `int ppl_new_Uint16_Box_from_BD_Shape_mpq_class (ppl_Uint16_Box_t * pph,
ppl_const_BD_Shape_mpq_class_t ph)` [`related`]
- 10.158.2.22 `int ppl_new_Uint16_Box_from_BD_Shape_mpq_class_with_complexity
(ppl_Uint16_Box_t * pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)`
[`related`]
- 10.158.2.23 `int ppl_new_Uint16_Box_from_BD_Shape_mpz_class (ppl_Uint16_Box_t * pph,
ppl_const_BD_Shape_mpz_class_t ph)` [`related`]
- 10.158.2.24 `int ppl_new_Uint16_Box_from_BD_Shape_mpz_class_with_complexity
(ppl_Uint16_Box_t * pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)`
[`related`]
- 10.158.2.25 `int ppl_new_Uint16_Box_from_C_Polyhedron (ppl_Uint16_Box_t * pph,
ppl_const_Polyhedron_t ph)` [`related`]

- 10.158.2.26 `int ppl_new_Uint16_Box_from_C_Polyhedron_with_complexity (ppl_Uint16_Box_t * pph, ppl_const_Polyhedron_t ph, int complexity)` [related]
- 10.158.2.27 `int ppl_new_Uint16_Box_from_Congruence_System (ppl_Uint16_Box_t * pph, ppl_const_Congruence_System_t cs)` [related]
- 10.158.2.28 `int ppl_new_Uint16_Box_from_Constraint_System (ppl_Uint16_Box_t * pph, ppl_const_Constraint_System_t cs)` [related]
- 10.158.2.29 `int ppl_new_Uint16_Box_from_Double_Box (ppl_Uint16_Box_t * pph, ppl_const_Double_Box_t ph)` [related]
- 10.158.2.30 `int ppl_new_Uint16_Box_from_Double_Box_with_complexity (ppl_Uint16_Box_t * pph, ppl_const_Double_Box_t ph, int complexity)` [related]
- 10.158.2.31 `int ppl_new_Uint16_Box_from_Float_Box (ppl_Uint16_Box_t * pph, ppl_const_Float_Box_t ph)` [related]
- 10.158.2.32 `int ppl_new_Uint16_Box_from_Float_Box_with_complexity (ppl_Uint16_Box_t * pph, ppl_const_Float_Box_t ph, int complexity)` [related]
- 10.158.2.33 `int ppl_new_Uint16_Box_from_Generator_System (ppl_Uint16_Box_t * pph, ppl_const_Generator_System_t cs)` [related]
- 10.158.2.34 `int ppl_new_Uint16_Box_from_Grid (ppl_Uint16_Box_t * pph, ppl_const_Grid_t ph)` [related]

- 10.158.2.35 `int ppl_new_Uint16_Box_from_Grid_with_complexity (ppl_Uint16_Box_t * pph,
ppl_const_Grid_t ph, int complexity)` [`related`]
- 10.158.2.36 `int ppl_new_Uint16_Box_from_Int16_Box (ppl_Uint16_Box_t * pph,
ppl_const_Int16_Box_t ph)` [`related`]
- 10.158.2.37 `int ppl_new_Uint16_Box_from_Int16_Box_with_complexity (ppl_Uint16_Box_t *
pph, ppl_const_Int16_Box_t ph, int complexity)` [`related`]
- 10.158.2.38 `int ppl_new_Uint16_Box_from_Int32_Box (ppl_Uint16_Box_t * pph,
ppl_const_Int32_Box_t ph)` [`related`]
- 10.158.2.39 `int ppl_new_Uint16_Box_from_Int32_Box_with_complexity (ppl_Uint16_Box_t *
pph, ppl_const_Int32_Box_t ph, int complexity)` [`related`]
- 10.158.2.40 `int ppl_new_Uint16_Box_from_Int64_Box (ppl_Uint16_Box_t * pph,
ppl_const_Int64_Box_t ph)` [`related`]
- 10.158.2.41 `int ppl_new_Uint16_Box_from_Int64_Box_with_complexity (ppl_Uint16_Box_t *
pph, ppl_const_Int64_Box_t ph, int complexity)` [`related`]
- 10.158.2.42 `int ppl_new_Uint16_Box_from_Int8_Box (ppl_Uint16_Box_t * pph,
ppl_const_Int8_Box_t ph)` [`related`]
- 10.158.2.43 `int ppl_new_Uint16_Box_from_Int8_Box_with_complexity (ppl_Uint16_Box_t * pph,
ppl_const_Int8_Box_t ph, int complexity)` [`related`]

- 10.158.2.44 `int ppl_new_Uint16_Box_from_Long_Double_Box (ppl_Uint16_Box_t * pph,
ppl_const_Long_Double_Box_t ph)` [`related`]
- 10.158.2.45 `int ppl_new_Uint16_Box_from_Long_Double_Box_with_complexity
(ppl_Uint16_Box_t * pph, ppl_const_Long_Double_Box_t ph, int complexity)`
[`related`]
- 10.158.2.46 `int ppl_new_Uint16_Box_from_NNC_Polyhedron (ppl_Uint16_Box_t * pph,
ppl_const_Polyhedron_t ph)` [`related`]
- 10.158.2.47 `int ppl_new_Uint16_Box_from_NNC_Polyhedron_with_complexity
(ppl_Uint16_Box_t * pph, ppl_const_Polyhedron_t ph, int complexity)` [`related`]
- 10.158.2.48 `int ppl_new_Uint16_Box_from_Octagonal_Shape_double (ppl_Uint16_Box_t * pph,
ppl_const_Octagonal_Shape_double_t ph)` [`related`]
- 10.158.2.49 `int ppl_new_Uint16_Box_from_Octagonal_Shape_double_with_complexity
(ppl_Uint16_Box_t * pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)`
[`related`]
- 10.158.2.50 `int ppl_new_Uint16_Box_from_Octagonal_Shape_float (ppl_Uint16_Box_t * pph,
ppl_const_Octagonal_Shape_float_t ph)` [`related`]
- 10.158.2.51 `int ppl_new_Uint16_Box_from_Octagonal_Shape_float_with_complexity
(ppl_Uint16_Box_t * pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)`
[`related`]
- 10.158.2.52 `int ppl_new_Uint16_Box_from_Octagonal_Shape_int16_t (ppl_Uint16_Box_t * pph,
ppl_const_Octagonal_Shape_int16_t ph)` [`related`]

- 10.158.2.53 `int ppl_new_Uint16_Box_from_Octagonal_Shape_int16_t_with_complexity`
(`ppl_Uint16_Box_t *pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`, `int complexity`)
[related]
- 10.158.2.54 `int ppl_new_Uint16_Box_from_Octagonal_Shape_int32_t` (`ppl_Uint16_Box_t *pph`,
`ppl_const_Octagonal_Shape_int32_t_t ph`) [related]
- 10.158.2.55 `int ppl_new_Uint16_Box_from_Octagonal_Shape_int32_t_with_complexity`
(`ppl_Uint16_Box_t *pph`, `ppl_const_Octagonal_Shape_int32_t_t ph`, `int complexity`)
[related]
- 10.158.2.56 `int ppl_new_Uint16_Box_from_Octagonal_Shape_int64_t` (`ppl_Uint16_Box_t *pph`,
`ppl_const_Octagonal_Shape_int64_t_t ph`) [related]
- 10.158.2.57 `int ppl_new_Uint16_Box_from_Octagonal_Shape_int64_t_with_complexity`
(`ppl_Uint16_Box_t *pph`, `ppl_const_Octagonal_Shape_int64_t_t ph`, `int complexity`)
[related]
- 10.158.2.58 `int ppl_new_Uint16_Box_from_Octagonal_Shape_int8_t` (`ppl_Uint16_Box_t *pph`,
`ppl_const_Octagonal_Shape_int8_t_t ph`) [related]
- 10.158.2.59 `int ppl_new_Uint16_Box_from_Octagonal_Shape_int8_t_with_complexity`
(`ppl_Uint16_Box_t *pph`, `ppl_const_Octagonal_Shape_int8_t_t ph`, `int complexity`)
[related]
- 10.158.2.60 `int ppl_new_Uint16_Box_from_Octagonal_Shape_long_double` (`ppl_Uint16_Box_t *`
`pph`, `ppl_const_Octagonal_Shape_long_double_t ph`) [related]

- 10.158.2.61 `int ppl_new_Uint16_Box_from_Octagonal_Shape_long_double_with_complexity (ppl_Uint16_Box_t * pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)` [**related**]
- 10.158.2.62 `int ppl_new_Uint16_Box_from_Octagonal_Shape_mpq_class (ppl_Uint16_Box_t * pph, ppl_const_Octagonal_Shape_mpq_class_t ph)` [**related**]
- 10.158.2.63 `int ppl_new_Uint16_Box_from_Octagonal_Shape_mpq_class_with_complexity (ppl_Uint16_Box_t * pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)` [**related**]
- 10.158.2.64 `int ppl_new_Uint16_Box_from_Octagonal_Shape_mpz_class (ppl_Uint16_Box_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph)` [**related**]
- 10.158.2.65 `int ppl_new_Uint16_Box_from_Octagonal_Shape_mpz_class_with_complexity (ppl_Uint16_Box_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)` [**related**]
- 10.158.2.66 `int ppl_new_Uint16_Box_from_Rational_Box (ppl_Uint16_Box_t * pph, ppl_const_Rational_Box_t ph)` [**related**]
- 10.158.2.67 `int ppl_new_Uint16_Box_from_Rational_Box_with_complexity (ppl_Uint16_Box_t * pph, ppl_const_Rational_Box_t ph, int complexity)` [**related**]
- 10.158.2.68 `int ppl_new_Uint16_Box_from_space_dimension (ppl_Uint16_Box_t * pph, ppl_dimension_type d, int empty)` [**related**]
- 10.158.2.69 `int ppl_new_Uint16_Box_from_Uint16_Box (ppl_Uint16_Box_t * pph, ppl_const_Uint16_Box_t ph)` [**related**]

- 10.158.2.70 `int ppl_new_Uint16_Box_from_Uint16_Box_with_complexity (ppl_Uint16_Box_t * pph, ppl_const_Uint16_Box_t ph, int complexity)` [related]
- 10.158.2.71 `int ppl_new_Uint16_Box_from_Uint32_Box (ppl_Uint16_Box_t * pph, ppl_const_Uint32_Box_t ph)` [related]
- 10.158.2.72 `int ppl_new_Uint16_Box_from_Uint32_Box_with_complexity (ppl_Uint16_Box_t * pph, ppl_const_Uint32_Box_t ph, int complexity)` [related]
- 10.158.2.73 `int ppl_new_Uint16_Box_from_Uint64_Box (ppl_Uint16_Box_t * pph, ppl_const_Uint64_Box_t ph)` [related]
- 10.158.2.74 `int ppl_new_Uint16_Box_from_Uint64_Box_with_complexity (ppl_Uint16_Box_t * pph, ppl_const_Uint64_Box_t ph, int complexity)` [related]
- 10.158.2.75 `int ppl_new_Uint16_Box_from_Uint8_Box (ppl_Uint16_Box_t * pph, ppl_const_Uint8_Box_t ph)` [related]
- 10.158.2.76 `int ppl_new_Uint16_Box_from_Uint8_Box_with_complexity (ppl_Uint16_Box_t * pph, ppl_const_Uint8_Box_t ph, int complexity)` [related]
- 10.158.2.77 `int ppl_new_Uint16_Box_from_Z_Box (ppl_Uint16_Box_t * pph, ppl_const_Z_Box_t ph)` [related]
- 10.158.2.78 `int ppl_new_Uint16_Box_from_Z_Box_with_complexity (ppl_Uint16_Box_t * pph, ppl_const_Z_Box_t ph, int complexity)` [related]

- 10.158.2.79 `int ppl_new_Uint16_Box_recycle_Congruence_System (ppl_Uint16_Box_t * pph,
ppl_Congruence_System_t cs)` [**related**]
- 10.158.2.80 `int ppl_new_Uint16_Box_recycle_Constraint_System (ppl_Uint16_Box_t * pph,
ppl_Constraint_System_t cs)` [**related**]
- 10.158.2.81 `int ppl_new_Uint16_Box_recycle_Generator_System (ppl_Uint16_Box_t * pph,
ppl_Generator_System_t cs)` [**related**]
- 10.158.2.82 `int ppl_one_affine_ranking_function_MS_Uint16_Box (ppl_const_Uint16_Box_t pset,
ppl_Generator_t point)` [**related**]
- 10.158.2.83 `int ppl_one_affine_ranking_function_MS_Uint16_Box_2 (ppl_const_Uint16_Box_t
pset_before, ppl_const_Uint16_Box_t pset_after, ppl_Generator_t point)`
[**related**]
- 10.158.2.84 `int ppl_one_affine_ranking_function_PR_Uint16_Box (ppl_const_Uint16_Box_t pset,
ppl_Generator_t point)` [**related**]
- 10.158.2.85 `int ppl_one_affine_ranking_function_PR_Uint16_Box_2 (ppl_const_Uint16_Box_t
pset_before, ppl_const_Uint16_Box_t pset_after, ppl_Generator_t point)`
[**related**]
- 10.158.2.86 `int ppl_termination_test_MS_Uint16_Box (ppl_const_Uint16_Box_t pset)`
[**related**]
- 10.158.2.87 `int ppl_termination_test_MS_Uint16_Box_2 (ppl_const_Uint16_Box_t pset_before,
ppl_const_Uint16_Box_t pset_after)` [**related**]

- 10.158.2.88 `int ppl_termination_test_PR_Uint16_Box (ppl_const_Uint16_Box_t pset)`
[related]
- 10.158.2.89 `int ppl_termination_test_PR_Uint16_Box_2 (ppl_const_Uint16_Box_t pset_before,
ppl_const_Uint16_Box_t pset_after)` [related]
- 10.158.2.90 `int ppl_Uint16_Box_add_congruence (ppl_Uint16_Box_t ph, ppl_const_Congruence_t
c)` [related]
- 10.158.2.91 `int ppl_Uint16_Box_add_congruences (ppl_Uint16_Box_t ph,
ppl_const_Congruence_System_t cs)` [related]
- 10.158.2.92 `int ppl_Uint16_Box_add_constraint (ppl_Uint16_Box_t ph, ppl_const_Constraint_t
c)` [related]
- 10.158.2.93 `int ppl_Uint16_Box_add_constraints (ppl_Uint16_Box_t ph,
ppl_const_Constraint_System_t cs)` [related]
- 10.158.2.94 `int ppl_Uint16_Box_add_recycled_congruences (ppl_Uint16_Box_t ph,
ppl_Congruence_System_t cs)` [related]
- 10.158.2.95 `int ppl_Uint16_Box_add_recycled_constraints (ppl_Uint16_Box_t ph,
ppl_Constraint_System_t cs)` [related]
- 10.158.2.96 `int ppl_Uint16_Box_add_space_dimensions_and_embed (ppl_Uint16_Box_t ph,
ppl_dimension_type d)` [related]

- 10.158.2.97 `int ppl_Uint16_Box_add_space_dimensions_and_project (ppl_Uint16_Box_t ph,
ppl_dimension_type d)` [related]
- 10.158.2.98 `int ppl_Uint16_Box_affine_dimension (ppl_const_Uint16_Box_t ph,
ppl_dimension_type * m)` [related]
- 10.158.2.99 `int ppl_Uint16_Box_affine_image (ppl_Uint16_Box_t ph, ppl_dimension_type var,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [related]
- 10.158.2.100 `int ppl_Uint16_Box_affine_preimage (ppl_Uint16_Box_t ph, ppl_dimension_type
var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [related]
- 10.158.2.101 `int ppl_Uint16_Box_bounded_affine_image (ppl_Uint16_Box_t
ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb,
ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [related]
- 10.158.2.102 `int ppl_Uint16_Box_bounded_affine_preimage (ppl_Uint16_Box_t
ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb,
ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [related]
- 10.158.2.103 `int ppl_Uint16_Box_bounds_from_above (ppl_const_Uint16_Box_t ph,
ppl_const_Linear_Expression_t le)` [related]
- 10.158.2.104 `int ppl_Uint16_Box_bounds_from_below (ppl_const_Uint16_Box_t ph,
ppl_const_Linear_Expression_t le)` [related]
- 10.158.2.105 `int ppl_Uint16_Box_CC76_widening_assign (ppl_Uint16_Box_t x,
ppl_const_Uint16_Box_t y)` [related]

- 10.158.2.106 `int ppl_Uint16_Box_CC76_widening_assign_with_tokens (ppl_Uint16_Box_t x, ppl_const_Uint16_Box_ty, unsigned * tp)` [`related`]
- 10.158.2.107 `int ppl_Uint16_Box_concatenate_assign (ppl_Uint16_Box_t x, ppl_const_Uint16_Box_ty)` [`related`]
- 10.158.2.108 `int ppl_Uint16_Box_constrains (ppl_Uint16_Box_t ph, ppl_dimension_type var)` [`related`]
- 10.158.2.109 `int ppl_Uint16_Box_contains_integer_point (ppl_const_Uint16_Box_t ph)` [`related`]
- 10.158.2.110 `int ppl_Uint16_Box_contains_Uint16_Box (ppl_const_Uint16_Box_t x, ppl_const_Uint16_Box_ty)` [`related`]
- 10.158.2.111 `int ppl_Uint16_Box_difference_assign (ppl_Uint16_Box_t x, ppl_const_Uint16_Box_ty)` [`related`]
- 10.158.2.112 `int ppl_Uint16_Box_drop_some_non_integer_points (ppl_Uint16_Box_t ph, int complexity)` [`related`]
- 10.158.2.113 `int ppl_Uint16_Box_drop_some_non_integer_points_2 (ppl_Uint16_Box_t ph, ppl_dimension_type ds[], size_t n, int complexity)` [`related`]
- 10.158.2.114 `int ppl_Uint16_Box_equals_Uint16_Box (ppl_const_Uint16_Box_t x, ppl_const_Uint16_Box_ty)` [`related`]

- 10.158.2.115 `int ppl_Uint16_Box_expand_space_dimension (ppl_Uint16_Box_t ph,
ppl_dimension_type d, ppl_dimension_type m)` [**related**]
- 10.158.2.116 `int ppl_Uint16_Box_external_memory_in_bytes (ppl_const_Uint16_Box_t ps, size_t
* sz)` [**related**]
- 10.158.2.117 `int ppl_Uint16_Box_fold_space_dimensions (ppl_Uint16_Box_t ph,
ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [**related**]
- 10.158.2.118 `int ppl_Uint16_Box_frequency (ppl_const_Uint16_Box_t ph,
ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t
ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)` [**related**]
- 10.158.2.119 `int ppl_Uint16_Box_generalized_affine_image (ppl_Uint16_Box_t ph,
ppl_dimension_type var, enum ppl_enum_Constraint_Type relysym,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.158.2.120 `int ppl_Uint16_Box_generalized_affine_image_lhs_rhs (ppl_Uint16_Box_t ph,
ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relysym,
ppl_const_Linear_Expression_t rhs)` [**related**]
- 10.158.2.121 `int ppl_Uint16_Box_generalized_affine_preimage (ppl_Uint16_Box_t
ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relysym,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.158.2.122 `int ppl_Uint16_Box_generalized_affine_preimage_lhs_rhs (ppl_Uint16_Box_t ph,
ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relysym,
ppl_const_Linear_Expression_t rhs)` [**related**]

- 10.158.2.123 `int ppl_Uint16_Box_get_congruences (ppl_const_Uint16_Box_t ph,
ppl_const_Congruence_System_t * pcs)` [related]
- 10.158.2.124 `int ppl_Uint16_Box_get_constraints (ppl_const_Uint16_Box_t ph,
ppl_const_Constraint_System_t * pcs)` [related]
- 10.158.2.125 `int ppl_Uint16_Box_get_minimized_congruences (ppl_const_Uint16_Box_t ph,
ppl_const_Congruence_System_t * pcs)` [related]
- 10.158.2.126 `int ppl_Uint16_Box_get_minimized_constraints (ppl_const_Uint16_Box_t ph,
ppl_const_Constraint_System_t * pcs)` [related]
- 10.158.2.127 `int ppl_Uint16_Box_intersection_assign (ppl_Uint16_Box_t x,
ppl_const_Uint16_Box_ty)` [related]
- 10.158.2.128 `int ppl_Uint16_Box_is_bounded (ppl_const_Uint16_Box_t ph)` [related]
- 10.158.2.129 `int ppl_Uint16_Box_is_discrete (ppl_const_Uint16_Box_t ph)` [related]
- 10.158.2.130 `int ppl_Uint16_Box_is_disjoint_from_Uint16_Box (ppl_const_Uint16_Box_t x,
ppl_const_Uint16_Box_ty)` [related]
- 10.158.2.131 `int ppl_Uint16_Box_is_empty (ppl_const_Uint16_Box_t ph)` [related]
- 10.158.2.132 `int ppl_Uint16_Box_is_topologically_closed (ppl_const_Uint16_Box_t ph)`
[related]

- 10.158.2.133** `int ppl_Uint16_Box_is_universe (ppl_const_Uint16_Box_t ph)` [**related**]
- 10.158.2.134** `int ppl_Uint16_Box_limited_CC76_extrapolation_assign (ppl_Uint16_Box_t x,
ppl_const_Uint16_Box_t y, ppl_const_Constraint_System_t cs)` [**related**]
- 10.158.2.135** `int ppl_Uint16_Box_limited_CC76_extrapolation_assign_with_tokens
(ppl_Uint16_Box_t x, ppl_const_Uint16_Box_t y, ppl_const_Constraint_System_t
cs, unsigned * tp)` [**related**]
- 10.158.2.136** `int ppl_Uint16_Box_linear_partition (ppl_const_Uint16_Box_t
x, ppl_const_Uint16_Box_t y, ppl_Uint16_Box_t * p_inters,
ppl_Pointset_Powerset_NNC_Polyhedron_t * p_rest)` [**related**]
- 10.158.2.137** `int ppl_Uint16_Box_map_space_dimensions (ppl_Uint16_Box_t ph,
ppl_dimension_type maps[], size_t n)` [**related**]
- 10.158.2.138** `int ppl_Uint16_Box_maximize (ppl_const_Uint16_Box_t ph,
ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d,
int * poptimum)` [**related**]
- 10.158.2.139** `int ppl_Uint16_Box_maximize_with_point (ppl_const_Uint16_Box_t ph,
ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d,
int * poptimum, ppl_Generator_t point)` [**related**]
- 10.158.2.140** `int ppl_Uint16_Box_minimize (ppl_const_Uint16_Box_t ph,
ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d,
int * poptimum)` [**related**]

- 10.158.2.141 `int ppl_Uint16_Box_minimize_with_point (ppl_const_Uint16_Box_t ph,
ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d,
int * poptimum, ppl_Generator_t point)` [related]
- 10.158.2.142 `int ppl_Uint16_Box_OK (ppl_const_Uint16_Box_t ph)` [related]
- 10.158.2.143 `int ppl_Uint16_Box_refine_with_congruence (ppl_Uint16_Box_t ph,
ppl_const_Congruence_t c)` [related]
- 10.158.2.144 `int ppl_Uint16_Box_refine_with_congruences (ppl_Uint16_Box_t ph,
ppl_const_Congruence_System_t cs)` [related]
- 10.158.2.145 `int ppl_Uint16_Box_refine_with_constraint (ppl_Uint16_Box_t ph,
ppl_const_Constraint_t c)` [related]
- 10.158.2.146 `int ppl_Uint16_Box_refine_with_constraints (ppl_Uint16_Box_t ph,
ppl_const_Constraint_System_t cs)` [related]
- 10.158.2.147 `int ppl_Uint16_Box_relation_with_Congruence (ppl_const_Uint16_Box_t ph,
ppl_const_Congruence_t c)` [related]
- 10.158.2.148 `int ppl_Uint16_Box_relation_with_Constraint (ppl_const_Uint16_Box_t ph,
ppl_const_Constraint_t c)` [related]
- 10.158.2.149 `int ppl_Uint16_Box_relation_with_Generator (ppl_const_Uint16_Box_t ph,
ppl_const_Generator_t c)` [related]

- 10.158.2.150** `int ppl_Uint16_Box_remove_higher_space_dimensions (ppl_Uint16_Box_t ph, ppl_dimension_type d)` [**related**]
- 10.158.2.151** `int ppl_Uint16_Box_remove_space_dimensions (ppl_Uint16_Box_t ph, ppl_dimension_type ds[], size_t n)` [**related**]
- 10.158.2.152** `int ppl_Uint16_Box_simplify_using_context_assign (ppl_Uint16_Box_t x, ppl_const_Uint16_Box_ty)` [**related**]
- 10.158.2.153** `int ppl_Uint16_Box_space_dimension (ppl_const_Uint16_Box_t ph, ppl_dimension_type * m)` [**related**]
- 10.158.2.154** `int ppl_Uint16_Box_strictly_contains_Uint16_Box (ppl_const_Uint16_Box_t x, ppl_const_Uint16_Box_ty)` [**related**]
- 10.158.2.155** `int ppl_Uint16_Box_time_elapse_assign (ppl_Uint16_Box_t x, ppl_const_Uint16_Box_ty)` [**related**]
- 10.158.2.156** `int ppl_Uint16_Box_topological_closure_assign (ppl_Uint16_Box_t ph)` [**related**]
- 10.158.2.157** `int ppl_Uint16_Box_total_memory_in_bytes (ppl_const_Uint16_Box_t ps, size_t * sz)` [**related**]
- 10.158.2.158** `int ppl_Uint16_Box_unconstrain_space_dimension (ppl_Uint16_Box_t ph, ppl_dimension_type var)` [**related**]

- 10.158.2.159** `int ppl_Uint16_Box_unconstrain_space_dimensions (ppl_Uint16_Box_t ph,
ppl_dimension_type ds[], size_t n)` [**related**]
- 10.158.2.160** `int ppl_Uint16_Box_upper_bound_assign (ppl_Uint16_Box_t x,
ppl_const_Uint16_Box_ty)` [**related**]
- 10.158.2.161** `int ppl_Uint16_Box_upper_bound_assign_if_exact (ppl_Uint16_Box_t x,
ppl_const_Uint16_Box_ty)` [**related**]
- 10.158.2.162** `int ppl_Uint16_Box_widening_assign (ppl_Uint16_Box_t x, ppl_const_Uint16_Box_t
y)` [**related**]
- 10.158.2.163** `int ppl_Uint16_Box_widening_assign_with_tokens (ppl_Uint16_Box_t x,
ppl_const_Uint16_Box_ty, unsigned * tp)` [**related**]
- 10.158.2.164** `int ppl_Uint16_Box_wrap_assign (ppl_Uint16_Box_t ph, ppl_dimension_type
ds[], size_t n, enum ppl_enum_Bounded_Integer_Type_Width w, enum
ppl_enum_Bounded_Integer_Type_Representation r, enum ppl_enum_Bounded_
Integer_Type_Overflow o, const ppl_const_Constraint_System_t * pcs, unsigned
complexity_threshold, int wrap_individually)` [**related**]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.159 ppl_Uint32_Box_tag Interface Reference

Types and functions for [ppl_Uint32_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl\_delete\_Uint32\_Box (ppl_const_Uint32_Box_t ph)`

- int [ppl_new_Uint32_Box_from_space_dimension](#) (ppl_Uint32_Box_t *pph, [ppl_dimension_type](#) d, int empty)
- int [ppl_new_Uint32_Box_from_Int8_Box](#) (ppl_Uint32_Box_t *pph, ppl_const_Int8_Box_t ph)
- int [ppl_new_Uint32_Box_from_Int16_Box](#) (ppl_Uint32_Box_t *pph, ppl_const_Int16_Box_t ph)
- int [ppl_new_Uint32_Box_from_Int32_Box](#) (ppl_Uint32_Box_t *pph, ppl_const_Int32_Box_t ph)
- int [ppl_new_Uint32_Box_from_Int64_Box](#) (ppl_Uint32_Box_t *pph, ppl_const_Int64_Box_t ph)
- int [ppl_new_Uint32_Box_from_Uint8_Box](#) (ppl_Uint32_Box_t *pph, ppl_const_Uint8_Box_t ph)
- int [ppl_new_Uint32_Box_from_Uint16_Box](#) (ppl_Uint32_Box_t *pph, ppl_const_Uint16_Box_t ph)
- int [ppl_new_Uint32_Box_from_Uint32_Box](#) (ppl_Uint32_Box_t *pph, ppl_const_Uint32_Box_t ph)
- int [ppl_new_Uint32_Box_from_Uint64_Box](#) (ppl_Uint32_Box_t *pph, ppl_const_Uint64_Box_t ph)
- int [ppl_new_Uint32_Box_from_Z_Box](#) (ppl_Uint32_Box_t *pph, ppl_const_Z_Box_t ph)
- int [ppl_new_Uint32_Box_from_Rational_Box](#) (ppl_Uint32_Box_t *pph, ppl_const_Rational_Box_t ph)
- int [ppl_new_Uint32_Box_from_BD_Shape_int8_t](#) (ppl_Uint32_Box_t *pph, ppl_const_BD_Shape_int8_t_t ph)
- int [ppl_new_Uint32_Box_from_BD_Shape_int16_t](#) (ppl_Uint32_Box_t *pph, ppl_const_BD_Shape_int16_t_t ph)
- int [ppl_new_Uint32_Box_from_BD_Shape_int32_t](#) (ppl_Uint32_Box_t *pph, ppl_const_BD_Shape_int32_t_t ph)
- int [ppl_new_Uint32_Box_from_BD_Shape_int64_t](#) (ppl_Uint32_Box_t *pph, ppl_const_BD_Shape_int64_t_t ph)
- int [ppl_new_Uint32_Box_from_BD_Shape_mpz_class](#) (ppl_Uint32_Box_t *pph, ppl_const_BD_Shape_mpz_class_t ph)
- int [ppl_new_Uint32_Box_from_BD_Shape_mpq_class](#) (ppl_Uint32_Box_t *pph, ppl_const_BD_Shape_mpq_class_t ph)
- int [ppl_new_Uint32_Box_from_Octagonal_Shape_int8_t](#) (ppl_Uint32_Box_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph)
- int [ppl_new_Uint32_Box_from_Octagonal_Shape_int16_t](#) (ppl_Uint32_Box_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph)
- int [ppl_new_Uint32_Box_from_Octagonal_Shape_int32_t](#) (ppl_Uint32_Box_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph)
- int [ppl_new_Uint32_Box_from_Octagonal_Shape_int64_t](#) (ppl_Uint32_Box_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph)
- int [ppl_new_Uint32_Box_from_Octagonal_Shape_mpz_class](#) (ppl_Uint32_Box_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph)
- int [ppl_new_Uint32_Box_from_Octagonal_Shape_mpq_class](#) (ppl_Uint32_Box_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph)
- int [ppl_new_Uint32_Box_from_C_Polyhedron](#) (ppl_Uint32_Box_t *pph, ppl_const_Polyhedron_t ph)
- int [ppl_new_Uint32_Box_from_NNC_Polyhedron](#) (ppl_Uint32_Box_t *pph, ppl_const_Polyhedron_t ph)
- int [ppl_new_Uint32_Box_from_Grid](#) (ppl_Uint32_Box_t *pph, ppl_const_Grid_t ph)
- int [ppl_new_Uint32_Box_from_Float_Box](#) (ppl_Uint32_Box_t *pph, ppl_const_Float_Box_t ph)
- int [ppl_new_Uint32_Box_from_BD_Shape_float](#) (ppl_Uint32_Box_t *pph, ppl_const_BD_Shape_float_t ph)
- int [ppl_new_Uint32_Box_from_Octagonal_Shape_float](#) (ppl_Uint32_Box_t *pph, ppl_const_Octagonal_Shape_float_t ph)
- int [ppl_new_Uint32_Box_from_Double_Box](#) (ppl_Uint32_Box_t *pph, ppl_const_Double_Box_t ph)

- `int ppl_new_Uint32_Box_from_BD_Shape_double` (`ppl_Uint32_Box_t *pph`, `ppl_const_BD_Shape_double_t ph`)
- `int ppl_new_Uint32_Box_from_Octagonal_Shape_double` (`ppl_Uint32_Box_t *pph`, `ppl_const_Octagonal_Shape_double_t ph`)
- `int ppl_new_Uint32_Box_from_Long_Double_Box` (`ppl_Uint32_Box_t *pph`, `ppl_const_Long_Double_Box_t ph`)
- `int ppl_new_Uint32_Box_from_BD_Shape_long_double` (`ppl_Uint32_Box_t *pph`, `ppl_const_BD_Shape_long_double_t ph`)
- `int ppl_new_Uint32_Box_from_Octagonal_Shape_long_double` (`ppl_Uint32_Box_t *pph`, `ppl_const_Octagonal_Shape_long_double_t ph`)
- `int ppl_new_Uint32_Box_from_Int8_Box_with_complexity` (`ppl_Uint32_Box_t *pph`, `ppl_const_Int8_Box_t ph`, `int complexity`)
- `int ppl_new_Uint32_Box_from_Int16_Box_with_complexity` (`ppl_Uint32_Box_t *pph`, `ppl_const_Int16_Box_t ph`, `int complexity`)
- `int ppl_new_Uint32_Box_from_Int32_Box_with_complexity` (`ppl_Uint32_Box_t *pph`, `ppl_const_Int32_Box_t ph`, `int complexity`)
- `int ppl_new_Uint32_Box_from_Int64_Box_with_complexity` (`ppl_Uint32_Box_t *pph`, `ppl_const_Int64_Box_t ph`, `int complexity`)
- `int ppl_new_Uint32_Box_from_Uint8_Box_with_complexity` (`ppl_Uint32_Box_t *pph`, `ppl_const_Uint8_Box_t ph`, `int complexity`)
- `int ppl_new_Uint32_Box_from_Uint16_Box_with_complexity` (`ppl_Uint32_Box_t *pph`, `ppl_const_Uint16_Box_t ph`, `int complexity`)
- `int ppl_new_Uint32_Box_from_Uint32_Box_with_complexity` (`ppl_Uint32_Box_t *pph`, `ppl_const_Uint32_Box_t ph`, `int complexity`)
- `int ppl_new_Uint32_Box_from_Uint64_Box_with_complexity` (`ppl_Uint32_Box_t *pph`, `ppl_const_Uint64_Box_t ph`, `int complexity`)
- `int ppl_new_Uint32_Box_from_Z_Box_with_complexity` (`ppl_Uint32_Box_t *pph`, `ppl_const_Z_Box_t ph`, `int complexity`)
- `int ppl_new_Uint32_Box_from_Rational_Box_with_complexity` (`ppl_Uint32_Box_t *pph`, `ppl_const_Rational_Box_t ph`, `int complexity`)
- `int ppl_new_Uint32_Box_from_BD_Shape_int8_t_with_complexity` (`ppl_Uint32_Box_t *pph`, `ppl_const_BD_Shape_int8_t_t ph`, `int complexity`)
- `int ppl_new_Uint32_Box_from_BD_Shape_int16_t_with_complexity` (`ppl_Uint32_Box_t *pph`, `ppl_const_BD_Shape_int16_t_t ph`, `int complexity`)
- `int ppl_new_Uint32_Box_from_BD_Shape_int32_t_with_complexity` (`ppl_Uint32_Box_t *pph`, `ppl_const_BD_Shape_int32_t_t ph`, `int complexity`)
- `int ppl_new_Uint32_Box_from_BD_Shape_int64_t_with_complexity` (`ppl_Uint32_Box_t *pph`, `ppl_const_BD_Shape_int64_t_t ph`, `int complexity`)
- `int ppl_new_Uint32_Box_from_BD_Shape_mpz_class_with_complexity` (`ppl_Uint32_Box_t *pph`, `ppl_const_BD_Shape_mpz_class_t ph`, `int complexity`)
- `int ppl_new_Uint32_Box_from_BD_Shape_mpq_class_with_complexity` (`ppl_Uint32_Box_t *pph`, `ppl_const_BD_Shape_mpq_class_t ph`, `int complexity`)
- `int ppl_new_Uint32_Box_from_Octagonal_Shape_int8_t_with_complexity` (`ppl_Uint32_Box_t *pph`, `ppl_const_Octagonal_Shape_int8_t_t ph`, `int complexity`)
- `int ppl_new_Uint32_Box_from_Octagonal_Shape_int16_t_with_complexity` (`ppl_Uint32_Box_t *pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`, `int complexity`)
- `int ppl_new_Uint32_Box_from_Octagonal_Shape_int32_t_with_complexity` (`ppl_Uint32_Box_t *pph`, `ppl_const_Octagonal_Shape_int32_t_t ph`, `int complexity`)
- `int ppl_new_Uint32_Box_from_Octagonal_Shape_int64_t_with_complexity` (`ppl_Uint32_Box_t *pph`, `ppl_const_Octagonal_Shape_int64_t_t ph`, `int complexity`)
- `int ppl_new_Uint32_Box_from_Octagonal_Shape_mpz_class_with_complexity` (`ppl_Uint32_Box_t *pph`, `ppl_const_Octagonal_Shape_mpz_class_t ph`, `int complexity`)

- int [ppl_new_Uint32_Box_from_Octagonal_Shape_mpq_class_with_complexity](#) (ppl_Uint32_Box_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_Uint32_Box_from_C_Polyhedron_with_complexity](#) (ppl_Uint32_Box_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_Uint32_Box_from_NNC_Polyhedron_with_complexity](#) (ppl_Uint32_Box_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_Uint32_Box_from_Grid_with_complexity](#) (ppl_Uint32_Box_t *pph, ppl_const_Grid_t ph, int complexity)
- int [ppl_new_Uint32_Box_from_Float_Box_with_complexity](#) (ppl_Uint32_Box_t *pph, ppl_const_Float_Box_t ph, int complexity)
- int [ppl_new_Uint32_Box_from_BD_Shape_float_with_complexity](#) (ppl_Uint32_Box_t *pph, ppl_const_BD_Shape_float_t ph, int complexity)
- int [ppl_new_Uint32_Box_from_Octagonal_Shape_float_with_complexity](#) (ppl_Uint32_Box_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)
- int [ppl_new_Uint32_Box_from_Double_Box_with_complexity](#) (ppl_Uint32_Box_t *pph, ppl_const_Double_Box_t ph, int complexity)
- int [ppl_new_Uint32_Box_from_BD_Shape_double_with_complexity](#) (ppl_Uint32_Box_t *pph, ppl_const_BD_Shape_double_t ph, int complexity)
- int [ppl_new_Uint32_Box_from_Octagonal_Shape_double_with_complexity](#) (ppl_Uint32_Box_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)
- int [ppl_new_Uint32_Box_from_Long_Double_Box_with_complexity](#) (ppl_Uint32_Box_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- int [ppl_new_Uint32_Box_from_BD_Shape_long_double_with_complexity](#) (ppl_Uint32_Box_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity)
- int [ppl_new_Uint32_Box_from_Octagonal_Shape_long_double_with_complexity](#) (ppl_Uint32_Box_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)
- int [ppl_new_Uint32_Box_from_Constraint_System](#) (ppl_Uint32_Box_t *pph, ppl_const_Constraint_System_t cs)
- int [ppl_new_Uint32_Box_from_Congruence_System](#) (ppl_Uint32_Box_t *pph, ppl_const_Congruence_System_t cs)
- int [ppl_new_Uint32_Box_from_Generator_System](#) (ppl_Uint32_Box_t *pph, ppl_const_Generator_System_t cs)
- int [ppl_Uint32_Box_space_dimension](#) (ppl_const_Uint32_Box_t ph, [ppl_dimension_type](#) *m)
- int [ppl_Uint32_Box_affine_dimension](#) (ppl_const_Uint32_Box_t ph, [ppl_dimension_type](#) *m)
- int [ppl_Uint32_Box_relation_with_Constraint](#) (ppl_const_Uint32_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Uint32_Box_relation_with_Generator](#) (ppl_const_Uint32_Box_t ph, ppl_const_Generator_t c)
- int [ppl_Uint32_Box_relation_with_Congruence](#) (ppl_const_Uint32_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Uint32_Box_get_constraints](#) (ppl_const_Uint32_Box_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_Uint32_Box_get_congruences](#) (ppl_const_Uint32_Box_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_Uint32_Box_get_minimized_constraints](#) (ppl_const_Uint32_Box_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_Uint32_Box_get_minimized_congruences](#) (ppl_const_Uint32_Box_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_Uint32_Box_is_empty](#) (ppl_const_Uint32_Box_t ph)
- int [ppl_Uint32_Box_is_universe](#) (ppl_const_Uint32_Box_t ph)
- int [ppl_Uint32_Box_is_bounded](#) (ppl_const_Uint32_Box_t ph)
- int [ppl_Uint32_Box_contains_integer_point](#) (ppl_const_Uint32_Box_t ph)

- int [ppl_Uint32_Box_is_topologically_closed](#) (ppl_const_Uint32_Box_t ph)
- int [ppl_Uint32_Box_is_discrete](#) (ppl_const_Uint32_Box_t ph)
- int [ppl_Uint32_Box_topological_closure_assign](#) (ppl_Uint32_Box_t ph)
- int [ppl_Uint32_Box_bounds_from_above](#) (ppl_const_Uint32_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Uint32_Box_bounds_from_below](#) (ppl_const_Uint32_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Uint32_Box_maximize](#) (ppl_const_Uint32_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Uint32_Box_minimize](#) (ppl_const_Uint32_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Uint32_Box_maximize_with_point](#) (ppl_const_Uint32_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Uint32_Box_minimize_with_point](#) (ppl_const_Uint32_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Uint32_Box_frequency](#) (ppl_const_Uint32_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)
- int [ppl_Uint32_Box_contains_Uint32_Box](#) (ppl_const_Uint32_Box_t x, ppl_const_Uint32_Box_t y)
- int [ppl_Uint32_Box_strictly_contains_Uint32_Box](#) (ppl_const_Uint32_Box_t x, ppl_const_Uint32_Box_t y)
- int [ppl_Uint32_Box_is_disjoint_from_Uint32_Box](#) (ppl_const_Uint32_Box_t x, ppl_const_Uint32_Box_t y)
- int [ppl_Uint32_Box_equals_Uint32_Box](#) (ppl_const_Uint32_Box_t x, ppl_const_Uint32_Box_t y)
- int [ppl_Uint32_Box_OK](#) (ppl_const_Uint32_Box_t ph)
- int [ppl_Uint32_Box_add_constraint](#) (ppl_Uint32_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Uint32_Box_add_congruence](#) (ppl_Uint32_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Uint32_Box_add_constraints](#) (ppl_Uint32_Box_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Uint32_Box_add_congruences](#) (ppl_Uint32_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Uint32_Box_refine_with_constraint](#) (ppl_Uint32_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Uint32_Box_refine_with_congruence](#) (ppl_Uint32_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Uint32_Box_refine_with_constraints](#) (ppl_Uint32_Box_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Uint32_Box_refine_with_congruences](#) (ppl_Uint32_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Uint32_Box_intersection_assign](#) (ppl_Uint32_Box_t x, ppl_const_Uint32_Box_t y)
- int [ppl_Uint32_Box_upper_bound_assign](#) (ppl_Uint32_Box_t x, ppl_const_Uint32_Box_t y)
- int [ppl_Uint32_Box_difference_assign](#) (ppl_Uint32_Box_t x, ppl_const_Uint32_Box_t y)
- int [ppl_Uint32_Box_concatenate_assign](#) (ppl_Uint32_Box_t x, ppl_const_Uint32_Box_t y)
- int [ppl_Uint32_Box_time_elapse_assign](#) (ppl_Uint32_Box_t x, ppl_const_Uint32_Box_t y)
- int [ppl_Uint32_Box_upper_bound_assign_if_exact](#) (ppl_Uint32_Box_t x, ppl_const_Uint32_Box_t y)
- int [ppl_Uint32_Box_simplify_using_context_assign](#) (ppl_Uint32_Box_t x, ppl_const_Uint32_Box_t y)
- int [ppl_Uint32_Box_constrains](#) (ppl_Uint32_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Uint32_Box_unconstrain_space_dimension](#) (ppl_Uint32_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Uint32_Box_unconstrain_space_dimensions](#) (ppl_Uint32_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)

- int [ppl_Uint32_Box_affine_image](#) (ppl_Uint32_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Uint32_Box_affine_preimage](#) (ppl_Uint32_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Uint32_Box_bounded_affine_image](#) (ppl_Uint32_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Uint32_Box_bounded_affine_preimage](#) (ppl_Uint32_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Uint32_Box_generalized_affine_image](#) (ppl_Uint32_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Uint32_Box_generalized_affine_preimage](#) (ppl_Uint32_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Uint32_Box_generalized_affine_image_lhs_rhs](#) (ppl_Uint32_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Uint32_Box_generalized_affine_preimage_lhs_rhs](#) (ppl_Uint32_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Uint32_Box_add_space_dimensions_and_embed](#) (ppl_Uint32_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Uint32_Box_add_space_dimensions_and_project](#) (ppl_Uint32_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Uint32_Box_remove_space_dimensions](#) (ppl_Uint32_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Uint32_Box_remove_higher_space_dimensions](#) (ppl_Uint32_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Uint32_Box_expand_space_dimension](#) (ppl_Uint32_Box_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Uint32_Box_fold_space_dimensions](#) (ppl_Uint32_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_Uint32_Box_map_space_dimensions](#) (ppl_Uint32_Box_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_Uint32_Box_drop_some_non_integer_points](#) (ppl_Uint32_Box_t ph, int complexity)
- int [ppl_Uint32_Box_drop_some_non_integer_points_2](#) (ppl_Uint32_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_Uint32_Box_external_memory_in_bytes](#) (ppl_const_Uint32_Box_t ps, size_t *sz)
- int [ppl_Uint32_Box_total_memory_in_bytes](#) (ppl_const_Uint32_Box_t ps, size_t *sz)
- int [ppl_Uint32_Box_CC76_widening_assign_with_tokens](#) (ppl_Uint32_Box_t x, ppl_const_Uint32_Box_t y, unsigned *tp)
- int [ppl_Uint32_Box_CC76_widening_assign](#) (ppl_Uint32_Box_t x, ppl_const_Uint32_Box_t y)
- int [ppl_Uint32_Box_widening_assign_with_tokens](#) (ppl_Uint32_Box_t x, ppl_const_Uint32_Box_t y, unsigned *tp)
- int [ppl_Uint32_Box_widening_assign](#) (ppl_Uint32_Box_t x, ppl_const_Uint32_Box_t y)
- int [ppl_Uint32_Box_limited_CC76_extrapolation_assign_with_tokens](#) (ppl_Uint32_Box_t x, ppl_const_Uint32_Box_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- int [ppl_Uint32_Box_limited_CC76_extrapolation_assign](#) (ppl_Uint32_Box_t x, ppl_const_Uint32_Box_t y, ppl_const_Constraint_System_t cs)
- int [ppl_Uint32_Box_linear_partition](#) (ppl_const_Uint32_Box_t x, ppl_const_Uint32_Box_t y, ppl_Uint32_Box_t *p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest)

- int [ppl_Uint32_Box_wrap_assign](#) (ppl_Uint32_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, enum [ppl_enum_Bounded_Integer_Type_Width](#) w, enum [ppl_enum_Bounded_Integer_Type_Representation](#) r, enum [ppl_enum_Bounded_Integer_Type_Overflow](#) o, const ppl_constraint_System_t *pcs, unsigned complexity_threshold, int wrap_individually)
- int [ppl_new_Uint32_Box_recycle_Constraint_System](#) (ppl_Uint32_Box_t *pph, ppl_Constraint_System_t cs)
- int [ppl_new_Uint32_Box_recycle_Congruence_System](#) (ppl_Uint32_Box_t *pph, ppl_Congruence_System_t cs)
- int [ppl_new_Uint32_Box_recycle_Generator_System](#) (ppl_Uint32_Box_t *pph, ppl_Generator_System_t cs)
- int [ppl_assign_Uint32_Box_from_Uint32_Box](#) (ppl_Uint32_Box_t dst, ppl_const_Uint32_Box_t src)
- int [ppl_Uint32_Box_add_recycled_constraints](#) (ppl_Uint32_Box_t ph, ppl_Constraint_System_t cs)
- int [ppl_Uint32_Box_add_recycled_congruences](#) (ppl_Uint32_Box_t ph, ppl_Congruence_System_t cs)
- int [ppl_termination_test_MS_Uint32_Box](#) (ppl_const_Uint32_Box_t pset)
- int [ppl_termination_test_PR_Uint32_Box](#) (ppl_const_Uint32_Box_t pset)
- int [ppl_one_affine_ranking_function_MS_Uint32_Box](#) (ppl_const_Uint32_Box_t pset, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_Uint32_Box](#) (ppl_const_Uint32_Box_t pset, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_Uint32_Box](#) (ppl_const_Uint32_Box_t pset, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_Uint32_Box](#) (ppl_const_Uint32_Box_t pset, ppl_Polyhedron_t ph)
- int [ppl_termination_test_MS_Uint32_Box_2](#) (ppl_const_Uint32_Box_t pset_before, ppl_const_Uint32_Box_t pset_after)
- int [ppl_termination_test_PR_Uint32_Box_2](#) (ppl_const_Uint32_Box_t pset_before, ppl_const_Uint32_Box_t pset_after)
- int [ppl_one_affine_ranking_function_MS_Uint32_Box_2](#) (ppl_const_Uint32_Box_t pset_before, ppl_const_Uint32_Box_t pset_after, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_Uint32_Box_2](#) (ppl_const_Uint32_Box_t pset_before, ppl_const_Uint32_Box_t pset_after, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_Uint32_Box_2](#) (ppl_const_Uint32_Box_t pset_before, ppl_const_Uint32_Box_t pset_after, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_Uint32_Box_2](#) (ppl_const_Uint32_Box_t pset_before, ppl_const_Uint32_Box_t pset_after, ppl_Polyhedron_t ph)

10.159.1 Detailed Description

Types and functions for [ppl_Uint32_Box_tag](#).

10.159.2 Friends And Related Function Documentation

- 10.159.2.1** int [ppl_all_affine_ranking_functions_MS_Uint32_Box](#) (ppl_const_Uint32_Box_t pset, ppl_Polyhedron_t ph) [**related**]

10.159.2.2 `int ppl_all_affine_ranking_functions_MS_Uint32_Box_2 (ppl_const_Uint32_Box_t pset_before, ppl_const_Uint32_Box_t pset_after, ppl_Polyhedron_t ph)` [related]

10.159.2.3 `int ppl_all_affine_ranking_functions_PR_Uint32_Box (ppl_const_Uint32_Box_t pset, ppl_Polyhedron_t ph)` [related]

10.159.2.4 `int ppl_all_affine_ranking_functions_PR_Uint32_Box_2 (ppl_const_Uint32_Box_t pset_before, ppl_const_Uint32_Box_t pset_after, ppl_Polyhedron_t ph)` [related]

10.159.2.5 `int ppl_assign_Uint32_Box_from_Uint32_Box (ppl_Uint32_Box_t dst, ppl_const_Uint32_Box_t src)` [related]

10.159.2.6 `int ppl_delete_Uint32_Box (ppl_const_Uint32_Box_t ph)` [related]

10.159.2.7 `int ppl_new_Uint32_Box_from_BD_Shape_double (ppl_Uint32_Box_t * pph, ppl_const_BD_Shape_double_t ph)` [related]

10.159.2.8 `int ppl_new_Uint32_Box_from_BD_Shape_double_with_complexity (ppl_Uint32_Box_t * pph, ppl_const_BD_Shape_double_t ph, int complexity)` [related]

10.159.2.9 `int ppl_new_Uint32_Box_from_BD_Shape_float (ppl_Uint32_Box_t * pph, ppl_const_BD_Shape_float_t ph)` [related]

10.159.2.10 `int ppl_new_Uint32_Box_from_BD_Shape_float_with_complexity (ppl_Uint32_Box_t * pph, ppl_const_BD_Shape_float_t ph, int complexity)` [related]

- 10.159.2.11** `int ppl_new_Uint32_Box_from_BD_Shape_int16_t (ppl_Uint32_Box_t * pph,
ppl_const_BD_Shape_int16_t_t ph)` [**related**]
- 10.159.2.12** `int ppl_new_Uint32_Box_from_BD_Shape_int16_t_with_complexity
(ppl_Uint32_Box_t * pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)`
[**related**]
- 10.159.2.13** `int ppl_new_Uint32_Box_from_BD_Shape_int32_t (ppl_Uint32_Box_t * pph,
ppl_const_BD_Shape_int32_t_t ph)` [**related**]
- 10.159.2.14** `int ppl_new_Uint32_Box_from_BD_Shape_int32_t_with_complexity
(ppl_Uint32_Box_t * pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)`
[**related**]
- 10.159.2.15** `int ppl_new_Uint32_Box_from_BD_Shape_int64_t (ppl_Uint32_Box_t * pph,
ppl_const_BD_Shape_int64_t_t ph)` [**related**]
- 10.159.2.16** `int ppl_new_Uint32_Box_from_BD_Shape_int64_t_with_complexity
(ppl_Uint32_Box_t * pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)`
[**related**]
- 10.159.2.17** `int ppl_new_Uint32_Box_from_BD_Shape_int8_t (ppl_Uint32_Box_t * pph,
ppl_const_BD_Shape_int8_t_t ph)` [**related**]
- 10.159.2.18** `int ppl_new_Uint32_Box_from_BD_Shape_int8_t_with_complexity
(ppl_Uint32_Box_t * pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)`
[**related**]
- 10.159.2.19** `int ppl_new_Uint32_Box_from_BD_Shape_long_double (ppl_Uint32_Box_t * pph,
ppl_const_BD_Shape_long_double_t ph)` [**related**]

- 10.159.2.20 `int ppl_new_Uint32_Box_from_BD_Shape_long_double_with_complexity`
(`ppl_Uint32_Box_t * pph`, `ppl_const_BD_Shape_long_double_t ph`, `int complexity`)
[related]
- 10.159.2.21 `int ppl_new_Uint32_Box_from_BD_Shape_mpq_class` (`ppl_Uint32_Box_t * pph`,
`ppl_const_BD_Shape_mpq_class_t ph`) [related]
- 10.159.2.22 `int ppl_new_Uint32_Box_from_BD_Shape_mpq_class_with_complexity`
(`ppl_Uint32_Box_t * pph`, `ppl_const_BD_Shape_mpq_class_t ph`, `int complexity`)
[related]
- 10.159.2.23 `int ppl_new_Uint32_Box_from_BD_Shape_mpz_class` (`ppl_Uint32_Box_t * pph`,
`ppl_const_BD_Shape_mpz_class_t ph`) [related]
- 10.159.2.24 `int ppl_new_Uint32_Box_from_BD_Shape_mpz_class_with_complexity`
(`ppl_Uint32_Box_t * pph`, `ppl_const_BD_Shape_mpz_class_t ph`, `int complexity`)
[related]
- 10.159.2.25 `int ppl_new_Uint32_Box_from_C_Polyhedron` (`ppl_Uint32_Box_t * pph`,
`ppl_const_Polyhedron_t ph`) [related]
- 10.159.2.26 `int ppl_new_Uint32_Box_from_C_Polyhedron_with_complexity` (`ppl_Uint32_Box_t *`
`pph`, `ppl_const_Polyhedron_t ph`, `int complexity`) [related]
- 10.159.2.27 `int ppl_new_Uint32_Box_from_Congruence_System` (`ppl_Uint32_Box_t * pph`,
`ppl_const_Congruence_System_t cs`) [related]
- 10.159.2.28 `int ppl_new_Uint32_Box_from_Constraint_System` (`ppl_Uint32_Box_t * pph`,
`ppl_const_Constraint_System_t cs`) [related]

- 10.159.2.29 `int ppl_new_Uint32_Box_from_Double_Box (ppl_Uint32_Box_t * pph,
ppl_const_Double_Box_t ph)` [`related`]
- 10.159.2.30 `int ppl_new_Uint32_Box_from_Double_Box_with_complexity (ppl_Uint32_Box_t *
pph, ppl_const_Double_Box_t ph, int complexity)` [`related`]
- 10.159.2.31 `int ppl_new_Uint32_Box_from_Float_Box (ppl_Uint32_Box_t * pph,
ppl_const_Float_Box_t ph)` [`related`]
- 10.159.2.32 `int ppl_new_Uint32_Box_from_Float_Box_with_complexity (ppl_Uint32_Box_t *
pph, ppl_const_Float_Box_t ph, int complexity)` [`related`]
- 10.159.2.33 `int ppl_new_Uint32_Box_from_Generator_System (ppl_Uint32_Box_t * pph,
ppl_const_Generator_System_t cs)` [`related`]
- 10.159.2.34 `int ppl_new_Uint32_Box_from_Grid (ppl_Uint32_Box_t * pph, ppl_const_Grid_t ph)`
[`related`]
- 10.159.2.35 `int ppl_new_Uint32_Box_from_Grid_with_complexity (ppl_Uint32_Box_t * pph,
ppl_const_Grid_t ph, int complexity)` [`related`]
- 10.159.2.36 `int ppl_new_Uint32_Box_from_Int16_Box (ppl_Uint32_Box_t * pph,
ppl_const_Int16_Box_t ph)` [`related`]
- 10.159.2.37 `int ppl_new_Uint32_Box_from_Int16_Box_with_complexity (ppl_Uint32_Box_t *
pph, ppl_const_Int16_Box_t ph, int complexity)` [`related`]

- 10.159.2.38** `int ppl_new_Uint32_Box_from_Int32_Box (ppl_Uint32_Box_t * pph,
ppl_const_Int32_Box_t ph)` [related]
- 10.159.2.39** `int ppl_new_Uint32_Box_from_Int32_Box_with_complexity (ppl_Uint32_Box_t *
pph, ppl_const_Int32_Box_t ph, int complexity)` [related]
- 10.159.2.40** `int ppl_new_Uint32_Box_from_Int64_Box (ppl_Uint32_Box_t * pph,
ppl_const_Int64_Box_t ph)` [related]
- 10.159.2.41** `int ppl_new_Uint32_Box_from_Int64_Box_with_complexity (ppl_Uint32_Box_t *
pph, ppl_const_Int64_Box_t ph, int complexity)` [related]
- 10.159.2.42** `int ppl_new_Uint32_Box_from_Int8_Box (ppl_Uint32_Box_t * pph,
ppl_const_Int8_Box_t ph)` [related]
- 10.159.2.43** `int ppl_new_Uint32_Box_from_Int8_Box_with_complexity (ppl_Uint32_Box_t * pph,
ppl_const_Int8_Box_t ph, int complexity)` [related]
- 10.159.2.44** `int ppl_new_Uint32_Box_from_Long_Double_Box (ppl_Uint32_Box_t * pph,
ppl_const_Long_Double_Box_t ph)` [related]
- 10.159.2.45** `int ppl_new_Uint32_Box_from_Long_Double_Box_with_complexity
(ppl_Uint32_Box_t * pph, ppl_const_Long_Double_Box_t ph, int complexity)`
[related]
- 10.159.2.46** `int ppl_new_Uint32_Box_from_NNC_Polyhedron (ppl_Uint32_Box_t * pph,
ppl_const_Polyhedron_t ph)` [related]

- 10.159.2.47 `int ppl_new_Uint32_Box_from_NNC_Polyhedron_with_complexity`
`(ppl_Uint32_Box_t * pph, ppl_const_Polyhedron_t ph, int complexity)` [`related`]
- 10.159.2.48 `int ppl_new_Uint32_Box_from_Octagonal_Shape_double` `(ppl_Uint32_Box_t * pph,`
`ppl_const_Octagonal_Shape_double_t ph)` [`related`]
- 10.159.2.49 `int ppl_new_Uint32_Box_from_Octagonal_Shape_double_with_complexity`
`(ppl_Uint32_Box_t * pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)`
`[related]`
- 10.159.2.50 `int ppl_new_Uint32_Box_from_Octagonal_Shape_float` `(ppl_Uint32_Box_t * pph,`
`ppl_const_Octagonal_Shape_float_t ph)` [`related`]
- 10.159.2.51 `int ppl_new_Uint32_Box_from_Octagonal_Shape_float_with_complexity`
`(ppl_Uint32_Box_t * pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)`
`[related]`
- 10.159.2.52 `int ppl_new_Uint32_Box_from_Octagonal_Shape_int16_t` `(ppl_Uint32_Box_t * pph,`
`ppl_const_Octagonal_Shape_int16_t ph)` [`related`]
- 10.159.2.53 `int ppl_new_Uint32_Box_from_Octagonal_Shape_int16_t_with_complexity`
`(ppl_Uint32_Box_t * pph, ppl_const_Octagonal_Shape_int16_t ph, int complexity)`
`[related]`
- 10.159.2.54 `int ppl_new_Uint32_Box_from_Octagonal_Shape_int32_t` `(ppl_Uint32_Box_t * pph,`
`ppl_const_Octagonal_Shape_int32_t ph)` [`related`]
- 10.159.2.55 `int ppl_new_Uint32_Box_from_Octagonal_Shape_int32_t_with_complexity`
`(ppl_Uint32_Box_t * pph, ppl_const_Octagonal_Shape_int32_t ph, int complexity)`
`[related]`

- 10.159.2.56 `int ppl_new_Uint32_Box_from_Octagonal_Shape_int64_t (ppl_Uint32_Box_t * pph, ppl_const_Octagonal_Shape_int64_t_t ph)` [`related`]
- 10.159.2.57 `int ppl_new_Uint32_Box_from_Octagonal_Shape_int64_t_with_complexity (ppl_Uint32_Box_t * pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)` [`related`]
- 10.159.2.58 `int ppl_new_Uint32_Box_from_Octagonal_Shape_int8_t (ppl_Uint32_Box_t * pph, ppl_const_Octagonal_Shape_int8_t_t ph)` [`related`]
- 10.159.2.59 `int ppl_new_Uint32_Box_from_Octagonal_Shape_int8_t_with_complexity (ppl_Uint32_Box_t * pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)` [`related`]
- 10.159.2.60 `int ppl_new_Uint32_Box_from_Octagonal_Shape_long_double (ppl_Uint32_Box_t * pph, ppl_const_Octagonal_Shape_long_double_t ph)` [`related`]
- 10.159.2.61 `int ppl_new_Uint32_Box_from_Octagonal_Shape_long_double_with_complexity (ppl_Uint32_Box_t * pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)` [`related`]
- 10.159.2.62 `int ppl_new_Uint32_Box_from_Octagonal_Shape_mpq_class (ppl_Uint32_Box_t * pph, ppl_const_Octagonal_Shape_mpq_class_t ph)` [`related`]
- 10.159.2.63 `int ppl_new_Uint32_Box_from_Octagonal_Shape_mpq_class_with_complexity (ppl_Uint32_Box_t * pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)` [`related`]
- 10.159.2.64 `int ppl_new_Uint32_Box_from_Octagonal_Shape_mpz_class (ppl_Uint32_Box_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph)` [`related`]

- 10.159.2.65 `int ppl_new_Uint32_Box_from_Octagonal_Shape_mpz_class_with_complexity (ppl_Uint32_Box_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)` [**related**]
- 10.159.2.66 `int ppl_new_Uint32_Box_from_Rational_Box (ppl_Uint32_Box_t * pph, ppl_const_Rational_Box_t ph)` [**related**]
- 10.159.2.67 `int ppl_new_Uint32_Box_from_Rational_Box_with_complexity (ppl_Uint32_Box_t * pph, ppl_const_Rational_Box_t ph, int complexity)` [**related**]
- 10.159.2.68 `int ppl_new_Uint32_Box_from_space_dimension (ppl_Uint32_Box_t * pph, ppl_dimension_type d, int empty)` [**related**]
- 10.159.2.69 `int ppl_new_Uint32_Box_from_Uint16_Box (ppl_Uint32_Box_t * pph, ppl_const_Uint16_Box_t ph)` [**related**]
- 10.159.2.70 `int ppl_new_Uint32_Box_from_Uint16_Box_with_complexity (ppl_Uint32_Box_t * pph, ppl_const_Uint16_Box_t ph, int complexity)` [**related**]
- 10.159.2.71 `int ppl_new_Uint32_Box_from_Uint32_Box (ppl_Uint32_Box_t * pph, ppl_const_Uint32_Box_t ph)` [**related**]
- 10.159.2.72 `int ppl_new_Uint32_Box_from_Uint32_Box_with_complexity (ppl_Uint32_Box_t * pph, ppl_const_Uint32_Box_t ph, int complexity)` [**related**]
- 10.159.2.73 `int ppl_new_Uint32_Box_from_Uint64_Box (ppl_Uint32_Box_t * pph, ppl_const_Uint64_Box_t ph)` [**related**]

- 10.159.2.74** `int ppl_new_Uint32_Box_from_Uint64_Box_with_complexity (ppl_Uint32_Box_t * pph, ppl_const_Uint64_Box_t ph, int complexity)` [**related**]
- 10.159.2.75** `int ppl_new_Uint32_Box_from_Uint8_Box (ppl_Uint32_Box_t * pph, ppl_const_Uint8_Box_t ph)` [**related**]
- 10.159.2.76** `int ppl_new_Uint32_Box_from_Uint8_Box_with_complexity (ppl_Uint32_Box_t * pph, ppl_const_Uint8_Box_t ph, int complexity)` [**related**]
- 10.159.2.77** `int ppl_new_Uint32_Box_from_Z_Box (ppl_Uint32_Box_t * pph, ppl_const_Z_Box_t ph)` [**related**]
- 10.159.2.78** `int ppl_new_Uint32_Box_from_Z_Box_with_complexity (ppl_Uint32_Box_t * pph, ppl_const_Z_Box_t ph, int complexity)` [**related**]
- 10.159.2.79** `int ppl_new_Uint32_Box_recycle_Congruence_System (ppl_Uint32_Box_t * pph, ppl_Congruence_System_t cs)` [**related**]
- 10.159.2.80** `int ppl_new_Uint32_Box_recycle_Constraint_System (ppl_Uint32_Box_t * pph, ppl_Constraint_System_t cs)` [**related**]
- 10.159.2.81** `int ppl_new_Uint32_Box_recycle_Generator_System (ppl_Uint32_Box_t * pph, ppl_Generator_System_t cs)` [**related**]
- 10.159.2.82** `int ppl_one_affine_ranking_function_MS_Uint32_Box (ppl_const_Uint32_Box_t pset, ppl_Generator_t point)` [**related**]

- 10.159.2.83 `int ppl_one_affine_ranking_function_MS_Uint32_Box_2 (ppl_const_Uint32_Box_t pset_before, ppl_const_Uint32_Box_t pset_after, ppl_Generator_t point)` `[related]`
- 10.159.2.84 `int ppl_one_affine_ranking_function_PR_Uint32_Box (ppl_const_Uint32_Box_t pset, ppl_Generator_t point)` `[related]`
- 10.159.2.85 `int ppl_one_affine_ranking_function_PR_Uint32_Box_2 (ppl_const_Uint32_Box_t pset_before, ppl_const_Uint32_Box_t pset_after, ppl_Generator_t point)` `[related]`
- 10.159.2.86 `int ppl_termination_test_MS_Uint32_Box (ppl_const_Uint32_Box_t pset)` `[related]`
- 10.159.2.87 `int ppl_termination_test_MS_Uint32_Box_2 (ppl_const_Uint32_Box_t pset_before, ppl_const_Uint32_Box_t pset_after)` `[related]`
- 10.159.2.88 `int ppl_termination_test_PR_Uint32_Box (ppl_const_Uint32_Box_t pset)` `[related]`
- 10.159.2.89 `int ppl_termination_test_PR_Uint32_Box_2 (ppl_const_Uint32_Box_t pset_before, ppl_const_Uint32_Box_t pset_after)` `[related]`
- 10.159.2.90 `int ppl_Uint32_Box_add_congruence (ppl_Uint32_Box_t ph, ppl_const_Congruence_t c)` `[related]`
- 10.159.2.91 `int ppl_Uint32_Box_add_congruences (ppl_Uint32_Box_t ph, ppl_const_Congruence_System_t cs)` `[related]`

- 10.159.2.92** `int ppl_Uint32_Box_add_constraint (ppl_Uint32_Box_t ph, ppl_const_Constraint_t c)` [**related**]
- 10.159.2.93** `int ppl_Uint32_Box_add_constraints (ppl_Uint32_Box_t ph, ppl_const_Constraint_System_t cs)` [**related**]
- 10.159.2.94** `int ppl_Uint32_Box_add_recycled_congruences (ppl_Uint32_Box_t ph, ppl_Congruence_System_t cs)` [**related**]
- 10.159.2.95** `int ppl_Uint32_Box_add_recycled_constraints (ppl_Uint32_Box_t ph, ppl_Constraint_System_t cs)` [**related**]
- 10.159.2.96** `int ppl_Uint32_Box_add_space_dimensions_and_embed (ppl_Uint32_Box_t ph, ppl_dimension_type d)` [**related**]
- 10.159.2.97** `int ppl_Uint32_Box_add_space_dimensions_and_project (ppl_Uint32_Box_t ph, ppl_dimension_type d)` [**related**]
- 10.159.2.98** `int ppl_Uint32_Box_affine_dimension (ppl_const_Uint32_Box_t ph, ppl_dimension_type * m)` [**related**]
- 10.159.2.99** `int ppl_Uint32_Box_affine_image (ppl_Uint32_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.159.2.100** `int ppl_Uint32_Box_affine_preimage (ppl_Uint32_Box_t ph, ppl_dimension_type var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]

- 10.159.2.101 `int ppl_Uint32_Box_bounded_affine_image (ppl_Uint32_Box_t
ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb,
ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d) [related]`
- 10.159.2.102 `int ppl_Uint32_Box_bounded_affine_preimage (ppl_Uint32_Box_t
ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb,
ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d) [related]`
- 10.159.2.103 `int ppl_Uint32_Box_bounds_from_above (ppl_const_Uint32_Box_t ph,
ppl_const_Linear_Expression_t le) [related]`
- 10.159.2.104 `int ppl_Uint32_Box_bounds_from_below (ppl_const_Uint32_Box_t ph,
ppl_const_Linear_Expression_t le) [related]`
- 10.159.2.105 `int ppl_Uint32_Box_CC76_widening_assign (ppl_Uint32_Box_t x,
ppl_const_Uint32_Box_t y) [related]`
- 10.159.2.106 `int ppl_Uint32_Box_CC76_widening_assign_with_tokens (ppl_Uint32_Box_t x,
ppl_const_Uint32_Box_t y, unsigned *tp) [related]`
- 10.159.2.107 `int ppl_Uint32_Box_concatenate_assign (ppl_Uint32_Box_t x,
ppl_const_Uint32_Box_t y) [related]`
- 10.159.2.108 `int ppl_Uint32_Box_constrains (ppl_Uint32_Box_t ph, ppl_dimension_type var)
[related]`
- 10.159.2.109 `int ppl_Uint32_Box_contains_integer_point (ppl_const_Uint32_Box_t ph)
[related]`

- 10.159.2.110** `int ppl_Uint32_Box_contains_Uint32_Box (ppl_const_Uint32_Box_t x, ppl_const_Uint32_Box_t y)` [**related**]
- 10.159.2.111** `int ppl_Uint32_Box_difference_assign (ppl_Uint32_Box_t x, ppl_const_Uint32_Box_t y)` [**related**]
- 10.159.2.112** `int ppl_Uint32_Box_drop_some_non_integer_points (ppl_Uint32_Box_t ph, int complexity)` [**related**]
- 10.159.2.113** `int ppl_Uint32_Box_drop_some_non_integer_points_2 (ppl_Uint32_Box_t ph, ppl_dimension_type ds[], size_t n, int complexity)` [**related**]
- 10.159.2.114** `int ppl_Uint32_Box_equals_Uint32_Box (ppl_const_Uint32_Box_t x, ppl_const_Uint32_Box_t y)` [**related**]
- 10.159.2.115** `int ppl_Uint32_Box_expand_space_dimension (ppl_Uint32_Box_t ph, ppl_dimension_type d, ppl_dimension_type m)` [**related**]
- 10.159.2.116** `int ppl_Uint32_Box_external_memory_in_bytes (ppl_const_Uint32_Box_t ps, size_t * sz)` [**related**]
- 10.159.2.117** `int ppl_Uint32_Box_fold_space_dimensions (ppl_Uint32_Box_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [**related**]
- 10.159.2.118** `int ppl_Uint32_Box_frequency (ppl_const_Uint32_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)` [**related**]

- 10.159.2.119 `int ppl_Uint32_Box_generalized_affine_image (ppl_Uint32_Box_t ph,
ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.159.2.120 `int ppl_Uint32_Box_generalized_affine_image_lhs_rhs (ppl_Uint32_Box_t ph,
ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym,
ppl_const_Linear_Expression_t rhs)` [`related`]
- 10.159.2.121 `int ppl_Uint32_Box_generalized_affine_preimage (ppl_Uint32_Box_t
ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.159.2.122 `int ppl_Uint32_Box_generalized_affine_preimage_lhs_rhs (ppl_Uint32_Box_t ph,
ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym,
ppl_const_Linear_Expression_t rhs)` [`related`]
- 10.159.2.123 `int ppl_Uint32_Box_get_congruences (ppl_const_Uint32_Box_t ph,
ppl_const_Congruence_System_t * pcs)` [`related`]
- 10.159.2.124 `int ppl_Uint32_Box_get_constraints (ppl_const_Uint32_Box_t ph,
ppl_const_Constraint_System_t * pcs)` [`related`]
- 10.159.2.125 `int ppl_Uint32_Box_get_minimized_congruences (ppl_const_Uint32_Box_t ph,
ppl_const_Congruence_System_t * pcs)` [`related`]
- 10.159.2.126 `int ppl_Uint32_Box_get_minimized_constraints (ppl_const_Uint32_Box_t ph,
ppl_const_Constraint_System_t * pcs)` [`related`]
- 10.159.2.127 `int ppl_Uint32_Box_intersection_assign (ppl_Uint32_Box_t x,
ppl_const_Uint32_Box_t y)` [`related`]

- 10.159.2.128 `int ppl_Uint32_Box_is_bounded (ppl_const_Uint32_Box_t ph)` [`related`]
- 10.159.2.129 `int ppl_Uint32_Box_is_discrete (ppl_const_Uint32_Box_t ph)` [`related`]
- 10.159.2.130 `int ppl_Uint32_Box_is_disjoint_from_Uint32_Box (ppl_const_Uint32_Box_t x,
ppl_const_Uint32_Box_t y)` [`related`]
- 10.159.2.131 `int ppl_Uint32_Box_is_empty (ppl_const_Uint32_Box_t ph)` [`related`]
- 10.159.2.132 `int ppl_Uint32_Box_is_topologically_closed (ppl_const_Uint32_Box_t ph)`
[`related`]
- 10.159.2.133 `int ppl_Uint32_Box_is_universe (ppl_const_Uint32_Box_t ph)` [`related`]
- 10.159.2.134 `int ppl_Uint32_Box_limited_CC76_extrapolation_assign (ppl_Uint32_Box_t x,
ppl_const_Uint32_Box_t y, ppl_const_Constraint_System_t cs)` [`related`]
- 10.159.2.135 `int ppl_Uint32_Box_limited_CC76_extrapolation_assign_with_tokens
(ppl_Uint32_Box_t x, ppl_const_Uint32_Box_t y, ppl_const_Constraint_System_t
cs, unsigned * tp)` [`related`]
- 10.159.2.136 `int ppl_Uint32_Box_linear_partition (ppl_const_Uint32_Box_t
x, ppl_const_Uint32_Box_t y, ppl_Uint32_Box_t * p_inters,
ppl_Pointset_Powerset_NNC_Polyhedron_t * p_rest)` [`related`]
- 10.159.2.137 `int ppl_Uint32_Box_map_space_dimensions (ppl_Uint32_Box_t ph,
ppl_dimension_type maps[], size_t n)` [`related`]

- 10.159.2.138 `int ppl_Uint32_Box_maximize (ppl_const_Uint32_Box_t ph,
ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d,
int * poptimum) [related]`
- 10.159.2.139 `int ppl_Uint32_Box_maximize_with_point (ppl_const_Uint32_Box_t ph,
ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d,
int * poptimum, ppl_Generator_t point) [related]`
- 10.159.2.140 `int ppl_Uint32_Box_minimize (ppl_const_Uint32_Box_t ph,
ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d,
int * poptimum) [related]`
- 10.159.2.141 `int ppl_Uint32_Box_minimize_with_point (ppl_const_Uint32_Box_t ph,
ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d,
int * poptimum, ppl_Generator_t point) [related]`
- 10.159.2.142 `int ppl_Uint32_Box_OK (ppl_const_Uint32_Box_t ph) [related]`
- 10.159.2.143 `int ppl_Uint32_Box_refine_with_congruence (ppl_Uint32_Box_t ph,
ppl_const_Congruence_t c) [related]`
- 10.159.2.144 `int ppl_Uint32_Box_refine_with_congruences (ppl_Uint32_Box_t ph,
ppl_const_Congruence_System_t cs) [related]`
- 10.159.2.145 `int ppl_Uint32_Box_refine_with_constraint (ppl_Uint32_Box_t ph,
ppl_const_Constraint_t c) [related]`
- 10.159.2.146 `int ppl_Uint32_Box_refine_with_constraints (ppl_Uint32_Box_t ph,
ppl_const_Constraint_System_t cs) [related]`

- 10.159.2.147 `int ppl_Uint32_Box_relation_with_Congruence (ppl_const_Uint32_Box_t ph,
ppl_const_Congruence_t c)` [`related`]
- 10.159.2.148 `int ppl_Uint32_Box_relation_with_Constraint (ppl_const_Uint32_Box_t ph,
ppl_const_Constraint_t c)` [`related`]
- 10.159.2.149 `int ppl_Uint32_Box_relation_with_Generator (ppl_const_Uint32_Box_t ph,
ppl_const_Generator_t c)` [`related`]
- 10.159.2.150 `int ppl_Uint32_Box_remove_higher_space_dimensions (ppl_Uint32_Box_t ph,
ppl_dimension_type d)` [`related`]
- 10.159.2.151 `int ppl_Uint32_Box_remove_space_dimensions (ppl_Uint32_Box_t ph,
ppl_dimension_type ds[], size_t n)` [`related`]
- 10.159.2.152 `int ppl_Uint32_Box_simplify_using_context_assign (ppl_Uint32_Box_t x,
ppl_const_Uint32_Box_t y)` [`related`]
- 10.159.2.153 `int ppl_Uint32_Box_space_dimension (ppl_const_Uint32_Box_t ph,
ppl_dimension_type * m)` [`related`]
- 10.159.2.154 `int ppl_Uint32_Box_strictly_contains_Uint32_Box (ppl_const_Uint32_Box_t x,
ppl_const_Uint32_Box_t y)` [`related`]
- 10.159.2.155 `int ppl_Uint32_Box_time_elapse_assign (ppl_Uint32_Box_t x,
ppl_const_Uint32_Box_t y)` [`related`]

- 10.159.2.156 `int ppl_Uint32_Box_topological_closure_assign (ppl_Uint32_Box_t ph)`
[related]
- 10.159.2.157 `int ppl_Uint32_Box_total_memory_in_bytes (ppl_const_Uint32_Box_t ps, size_t *
sz)` [related]
- 10.159.2.158 `int ppl_Uint32_Box_unconstrain_space_dimension (ppl_Uint32_Box_t ph,
ppl_dimension_type var)` [related]
- 10.159.2.159 `int ppl_Uint32_Box_unconstrain_space_dimensions (ppl_Uint32_Box_t ph,
ppl_dimension_type ds[], size_t n)` [related]
- 10.159.2.160 `int ppl_Uint32_Box_upper_bound_assign (ppl_Uint32_Box_t x,
ppl_const_Uint32_Box_t y)` [related]
- 10.159.2.161 `int ppl_Uint32_Box_upper_bound_assign_if_exact (ppl_Uint32_Box_t x,
ppl_const_Uint32_Box_t y)` [related]
- 10.159.2.162 `int ppl_Uint32_Box_widening_assign (ppl_Uint32_Box_t x, ppl_const_Uint32_Box_t
y)` [related]
- 10.159.2.163 `int ppl_Uint32_Box_widening_assign_with_tokens (ppl_Uint32_Box_t x,
ppl_const_Uint32_Box_t y, unsigned *tp)` [related]
- 10.159.2.164 `int ppl_Uint32_Box_wrap_assign (ppl_Uint32_Box_t ph, ppl_dimension_type
ds[], size_t n, enum ppl_enum_Bounded_Integer_Type_Width w, enum
ppl_enum_Bounded_Integer_Type_Representation r, enum ppl_enum_Bounded_
Integer_Type_Overflow o, const ppl_const_Constraint_System_t *pcs, unsigned
complexity_threshold, int wrap_individually)` [related]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.160 ppl_Uint64_Box_tag Interface Reference

Types and functions for [ppl_Uint64_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- [int ppl_delete_Uint64_Box](#) (ppl_const_Uint64_Box_t ph)
- [int ppl_new_Uint64_Box_from_space_dimension](#) (ppl_Uint64_Box_t *pph, [ppl_dimension_type](#) d, int empty)
- [int ppl_new_Uint64_Box_from_Int8_Box](#) (ppl_Uint64_Box_t *pph, ppl_const_Int8_Box_t ph)
- [int ppl_new_Uint64_Box_from_Int16_Box](#) (ppl_Uint64_Box_t *pph, ppl_const_Int16_Box_t ph)
- [int ppl_new_Uint64_Box_from_Int32_Box](#) (ppl_Uint64_Box_t *pph, ppl_const_Int32_Box_t ph)
- [int ppl_new_Uint64_Box_from_Int64_Box](#) (ppl_Uint64_Box_t *pph, ppl_const_Int64_Box_t ph)
- [int ppl_new_Uint64_Box_from_Uint8_Box](#) (ppl_Uint64_Box_t *pph, ppl_const_Uint8_Box_t ph)
- [int ppl_new_Uint64_Box_from_Uint16_Box](#) (ppl_Uint64_Box_t *pph, ppl_const_Uint16_Box_t ph)
- [int ppl_new_Uint64_Box_from_Uint32_Box](#) (ppl_Uint64_Box_t *pph, ppl_const_Uint32_Box_t ph)
- [int ppl_new_Uint64_Box_from_Uint64_Box](#) (ppl_Uint64_Box_t *pph, ppl_const_Uint64_Box_t ph)
- [int ppl_new_Uint64_Box_from_Z_Box](#) (ppl_Uint64_Box_t *pph, ppl_const_Z_Box_t ph)
- [int ppl_new_Uint64_Box_from_Rational_Box](#) (ppl_Uint64_Box_t *pph, ppl_const_Rational_Box_t ph)
- [int ppl_new_Uint64_Box_from_BD_Shape_int8_t](#) (ppl_Uint64_Box_t *pph, ppl_const_BD_Shape_int8_t_t ph)
- [int ppl_new_Uint64_Box_from_BD_Shape_int16_t](#) (ppl_Uint64_Box_t *pph, ppl_const_BD_Shape_int16_t_t ph)
- [int ppl_new_Uint64_Box_from_BD_Shape_int32_t](#) (ppl_Uint64_Box_t *pph, ppl_const_BD_Shape_int32_t_t ph)
- [int ppl_new_Uint64_Box_from_BD_Shape_int64_t](#) (ppl_Uint64_Box_t *pph, ppl_const_BD_Shape_int64_t_t ph)
- [int ppl_new_Uint64_Box_from_BD_Shape_mpz_class](#) (ppl_Uint64_Box_t *pph, ppl_const_BD_Shape_mpz_class_t ph)
- [int ppl_new_Uint64_Box_from_BD_Shape_mpq_class](#) (ppl_Uint64_Box_t *pph, ppl_const_BD_Shape_mpq_class_t ph)
- [int ppl_new_Uint64_Box_from_Octagonal_Shape_int8_t](#) (ppl_Uint64_Box_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph)
- [int ppl_new_Uint64_Box_from_Octagonal_Shape_int16_t](#) (ppl_Uint64_Box_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph)
- [int ppl_new_Uint64_Box_from_Octagonal_Shape_int32_t](#) (ppl_Uint64_Box_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph)
- [int ppl_new_Uint64_Box_from_Octagonal_Shape_int64_t](#) (ppl_Uint64_Box_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph)
- [int ppl_new_Uint64_Box_from_Octagonal_Shape_mpz_class](#) (ppl_Uint64_Box_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph)

- int [ppl_new_Uint64_Box_from_Octagonal_Shape_mpq_class](#) (ppl_Uint64_Box_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph)
- int [ppl_new_Uint64_Box_from_C_Polyhedron](#) (ppl_Uint64_Box_t *pph, ppl_const_Polyhedron_t ph)
- int [ppl_new_Uint64_Box_from_NNC_Polyhedron](#) (ppl_Uint64_Box_t *pph, ppl_const_Polyhedron_t ph)
- int [ppl_new_Uint64_Box_from_Grid](#) (ppl_Uint64_Box_t *pph, ppl_const_Grid_t ph)
- int [ppl_new_Uint64_Box_from_Float_Box](#) (ppl_Uint64_Box_t *pph, ppl_const_Float_Box_t ph)
- int [ppl_new_Uint64_Box_from_BD_Shape_float](#) (ppl_Uint64_Box_t *pph, ppl_const_BD_Shape_float_t ph)
- int [ppl_new_Uint64_Box_from_Octagonal_Shape_float](#) (ppl_Uint64_Box_t *pph, ppl_const_Octagonal_Shape_float_t ph)
- int [ppl_new_Uint64_Box_from_Double_Box](#) (ppl_Uint64_Box_t *pph, ppl_const_Double_Box_t ph)
- int [ppl_new_Uint64_Box_from_BD_Shape_double](#) (ppl_Uint64_Box_t *pph, ppl_const_BD_Shape_double_t ph)
- int [ppl_new_Uint64_Box_from_Octagonal_Shape_double](#) (ppl_Uint64_Box_t *pph, ppl_const_Octagonal_Shape_double_t ph)
- int [ppl_new_Uint64_Box_from_Long_Double_Box](#) (ppl_Uint64_Box_t *pph, ppl_const_Long_Double_Box_t ph)
- int [ppl_new_Uint64_Box_from_BD_Shape_long_double](#) (ppl_Uint64_Box_t *pph, ppl_const_BD_Shape_long_double_t ph)
- int [ppl_new_Uint64_Box_from_Octagonal_Shape_long_double](#) (ppl_Uint64_Box_t *pph, ppl_const_Octagonal_Shape_long_double_t ph)
- int [ppl_new_Uint64_Box_from_Int8_Box_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_Int8_Box_t ph, int complexity)
- int [ppl_new_Uint64_Box_from_Int16_Box_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_Int16_Box_t ph, int complexity)
- int [ppl_new_Uint64_Box_from_Int32_Box_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_Int32_Box_t ph, int complexity)
- int [ppl_new_Uint64_Box_from_Int64_Box_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_Int64_Box_t ph, int complexity)
- int [ppl_new_Uint64_Box_from_Uint8_Box_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_Uint8_Box_t ph, int complexity)
- int [ppl_new_Uint64_Box_from_Uint16_Box_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_Uint16_Box_t ph, int complexity)
- int [ppl_new_Uint64_Box_from_Uint32_Box_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_Uint32_Box_t ph, int complexity)
- int [ppl_new_Uint64_Box_from_Uint64_Box_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_Uint64_Box_t ph, int complexity)
- int [ppl_new_Uint64_Box_from_Z_Box_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_Z_Box_t ph, int complexity)
- int [ppl_new_Uint64_Box_from_Rational_Box_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_Rational_Box_t ph, int complexity)
- int [ppl_new_Uint64_Box_from_BD_Shape_int8_t_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)
- int [ppl_new_Uint64_Box_from_BD_Shape_int16_t_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)
- int [ppl_new_Uint64_Box_from_BD_Shape_int32_t_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)
- int [ppl_new_Uint64_Box_from_BD_Shape_int64_t_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)

- int [ppl_new_Uint64_Box_from_BD_Shape_mpz_class_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_Uint64_Box_from_BD_Shape_mpq_class_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_Uint64_Box_from_Octagonal_Shape_int8_t_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)
- int [ppl_new_Uint64_Box_from_Octagonal_Shape_int16_t_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)
- int [ppl_new_Uint64_Box_from_Octagonal_Shape_int32_t_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)
- int [ppl_new_Uint64_Box_from_Octagonal_Shape_int64_t_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)
- int [ppl_new_Uint64_Box_from_Octagonal_Shape_mpz_class_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_Uint64_Box_from_Octagonal_Shape_mpq_class_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_Uint64_Box_from_C_Polyhedron_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_Uint64_Box_from_NNC_Polyhedron_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_Uint64_Box_from_Grid_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_Grid_t ph, int complexity)
- int [ppl_new_Uint64_Box_from_Float_Box_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_Float_Box_t ph, int complexity)
- int [ppl_new_Uint64_Box_from_BD_Shape_float_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_BD_Shape_float_t ph, int complexity)
- int [ppl_new_Uint64_Box_from_Octagonal_Shape_float_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)
- int [ppl_new_Uint64_Box_from_Double_Box_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_Double_Box_t ph, int complexity)
- int [ppl_new_Uint64_Box_from_BD_Shape_double_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_BD_Shape_double_t ph, int complexity)
- int [ppl_new_Uint64_Box_from_Octagonal_Shape_double_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)
- int [ppl_new_Uint64_Box_from_Long_Double_Box_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- int [ppl_new_Uint64_Box_from_BD_Shape_long_double_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity)
- int [ppl_new_Uint64_Box_from_Octagonal_Shape_long_double_with_complexity](#) (ppl_Uint64_Box_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)
- int [ppl_new_Uint64_Box_from_Constraint_System](#) (ppl_Uint64_Box_t *pph, ppl_const_Constraint_System_t cs)
- int [ppl_new_Uint64_Box_from_Congruence_System](#) (ppl_Uint64_Box_t *pph, ppl_const_Congruence_System_t cs)
- int [ppl_new_Uint64_Box_from_Generator_System](#) (ppl_Uint64_Box_t *pph, ppl_const_Generator_System_t cs)
- int [ppl_Uint64_Box_space_dimension](#) (ppl_const_Uint64_Box_t ph, [ppl_dimension_type](#) *m)
- int [ppl_Uint64_Box_affine_dimension](#) (ppl_const_Uint64_Box_t ph, [ppl_dimension_type](#) *m)
- int [ppl_Uint64_Box_relation_with_Constraint](#) (ppl_const_Uint64_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Uint64_Box_relation_with_Generator](#) (ppl_const_Uint64_Box_t ph, ppl_const_Generator_t c)

- `int ppl_Uint64_Box_relation_with_Congruence` (`ppl_const_Uint64_Box_t ph`, `ppl_const_Congruence_t c`)
- `int ppl_Uint64_Box_get_constraints` (`ppl_const_Uint64_Box_t ph`, `ppl_const_Constraint_System_t *pcs`)
- `int ppl_Uint64_Box_get_congruences` (`ppl_const_Uint64_Box_t ph`, `ppl_const_Congruence_System_t *pcs`)
- `int ppl_Uint64_Box_get_minimized_constraints` (`ppl_const_Uint64_Box_t ph`, `ppl_const_Constraint_System_t *pcs`)
- `int ppl_Uint64_Box_get_minimized_congruences` (`ppl_const_Uint64_Box_t ph`, `ppl_const_Congruence_System_t *pcs`)
- `int ppl_Uint64_Box_is_empty` (`ppl_const_Uint64_Box_t ph`)
- `int ppl_Uint64_Box_is_universe` (`ppl_const_Uint64_Box_t ph`)
- `int ppl_Uint64_Box_is_bounded` (`ppl_const_Uint64_Box_t ph`)
- `int ppl_Uint64_Box_contains_integer_point` (`ppl_const_Uint64_Box_t ph`)
- `int ppl_Uint64_Box_is_topologically_closed` (`ppl_const_Uint64_Box_t ph`)
- `int ppl_Uint64_Box_is_discrete` (`ppl_const_Uint64_Box_t ph`)
- `int ppl_Uint64_Box_topological_closure_assign` (`ppl_Uint64_Box_t ph`)
- `int ppl_Uint64_Box_bounds_from_above` (`ppl_const_Uint64_Box_t ph`, `ppl_const_Linear_Expression_t le`)
- `int ppl_Uint64_Box_bounds_from_below` (`ppl_const_Uint64_Box_t ph`, `ppl_const_Linear_Expression_t le`)
- `int ppl_Uint64_Box_maximize` (`ppl_const_Uint64_Box_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int *poptimum`)
- `int ppl_Uint64_Box_minimize` (`ppl_const_Uint64_Box_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int *poptimum`)
- `int ppl_Uint64_Box_maximize_with_point` (`ppl_const_Uint64_Box_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int *poptimum`, `ppl_Generator_t point`)
- `int ppl_Uint64_Box_minimize_with_point` (`ppl_const_Uint64_Box_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_n`, `ppl_Coefficient_t ext_d`, `int *poptimum`, `ppl_Generator_t point`)
- `int ppl_Uint64_Box_frequency` (`ppl_const_Uint64_Box_t ph`, `ppl_const_Linear_Expression_t le`, `ppl_Coefficient_t ext_fn`, `ppl_Coefficient_t ext_fd`, `ppl_Coefficient_t ext_vn`, `ppl_Coefficient_t ext_vd`)
- `int ppl_Uint64_Box_contains_Uint64_Box` (`ppl_const_Uint64_Box_t x`, `ppl_const_Uint64_Box_t y`)
- `int ppl_Uint64_Box_strictly_contains_Uint64_Box` (`ppl_const_Uint64_Box_t x`, `ppl_const_Uint64_Box_t y`)
- `int ppl_Uint64_Box_is_disjoint_from_Uint64_Box` (`ppl_const_Uint64_Box_t x`, `ppl_const_Uint64_Box_t y`)
- `int ppl_Uint64_Box_equals_Uint64_Box` (`ppl_const_Uint64_Box_t x`, `ppl_const_Uint64_Box_t y`)
- `int ppl_Uint64_Box_OK` (`ppl_const_Uint64_Box_t ph`)
- `int ppl_Uint64_Box_add_constraint` (`ppl_Uint64_Box_t ph`, `ppl_const_Constraint_t c`)
- `int ppl_Uint64_Box_add_congruence` (`ppl_Uint64_Box_t ph`, `ppl_const_Congruence_t c`)
- `int ppl_Uint64_Box_add_constraints` (`ppl_Uint64_Box_t ph`, `ppl_const_Constraint_System_t cs`)
- `int ppl_Uint64_Box_add_congruences` (`ppl_Uint64_Box_t ph`, `ppl_const_Congruence_System_t cs`)
- `int ppl_Uint64_Box_refine_with_constraint` (`ppl_Uint64_Box_t ph`, `ppl_const_Constraint_t c`)
- `int ppl_Uint64_Box_refine_with_congruence` (`ppl_Uint64_Box_t ph`, `ppl_const_Congruence_t c`)
- `int ppl_Uint64_Box_refine_with_constraints` (`ppl_Uint64_Box_t ph`, `ppl_const_Constraint_System_t cs`)
- `int ppl_Uint64_Box_refine_with_congruences` (`ppl_Uint64_Box_t ph`, `ppl_const_Congruence_System_t cs`)

- int [ppl_Uint64_Box_intersection_assign](#) (ppl_Uint64_Box_t x, ppl_const_Uint64_Box_t y)
- int [ppl_Uint64_Box_upper_bound_assign](#) (ppl_Uint64_Box_t x, ppl_const_Uint64_Box_t y)
- int [ppl_Uint64_Box_difference_assign](#) (ppl_Uint64_Box_t x, ppl_const_Uint64_Box_t y)
- int [ppl_Uint64_Box_concatenate_assign](#) (ppl_Uint64_Box_t x, ppl_const_Uint64_Box_t y)
- int [ppl_Uint64_Box_time_elapse_assign](#) (ppl_Uint64_Box_t x, ppl_const_Uint64_Box_t y)
- int [ppl_Uint64_Box_upper_bound_assign_if_exact](#) (ppl_Uint64_Box_t x, ppl_const_Uint64_Box_t y)
- int [ppl_Uint64_Box_simplify_using_context_assign](#) (ppl_Uint64_Box_t x, ppl_const_Uint64_Box_t y)
- int [ppl_Uint64_Box_constrains](#) (ppl_Uint64_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Uint64_Box_unconstrain_space_dimension](#) (ppl_Uint64_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Uint64_Box_unconstrain_space_dimensions](#) (ppl_Uint64_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Uint64_Box_affine_image](#) (ppl_Uint64_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Uint64_Box_affine_preimage](#) (ppl_Uint64_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Uint64_Box_bounded_affine_image](#) (ppl_Uint64_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Uint64_Box_bounded_affine_preimage](#) (ppl_Uint64_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Uint64_Box_generalized_affine_image](#) (ppl_Uint64_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Uint64_Box_generalized_affine_preimage](#) (ppl_Uint64_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Uint64_Box_generalized_affine_image_lhs_rhs](#) (ppl_Uint64_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Uint64_Box_generalized_affine_preimage_lhs_rhs](#) (ppl_Uint64_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Uint64_Box_add_space_dimensions_and_embed](#) (ppl_Uint64_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Uint64_Box_add_space_dimensions_and_project](#) (ppl_Uint64_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Uint64_Box_remove_space_dimensions](#) (ppl_Uint64_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Uint64_Box_remove_higher_space_dimensions](#) (ppl_Uint64_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Uint64_Box_expand_space_dimension](#) (ppl_Uint64_Box_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Uint64_Box_fold_space_dimensions](#) (ppl_Uint64_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_Uint64_Box_map_space_dimensions](#) (ppl_Uint64_Box_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_Uint64_Box_drop_some_non_integer_points](#) (ppl_Uint64_Box_t ph, int complexity)
- int [ppl_Uint64_Box_drop_some_non_integer_points_2](#) (ppl_Uint64_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_Uint64_Box_external_memory_in_bytes](#) (ppl_const_Uint64_Box_t ps, size_t *sz)
- int [ppl_Uint64_Box_total_memory_in_bytes](#) (ppl_const_Uint64_Box_t ps, size_t *sz)

- `int ppl_Uint64_Box_CC76_widening_assign_with_tokens` (`ppl_Uint64_Box_t x`, `ppl_const_Uint64_Box_t y`, `unsigned *tp`)
- `int ppl_Uint64_Box_CC76_widening_assign` (`ppl_Uint64_Box_t x`, `ppl_const_Uint64_Box_t y`)
- `int ppl_Uint64_Box_widening_assign_with_tokens` (`ppl_Uint64_Box_t x`, `ppl_const_Uint64_Box_t y`, `unsigned *tp`)
- `int ppl_Uint64_Box_widening_assign` (`ppl_Uint64_Box_t x`, `ppl_const_Uint64_Box_t y`)
- `int ppl_Uint64_Box_limited_CC76_extrapolation_assign_with_tokens` (`ppl_Uint64_Box_t x`, `ppl_const_Uint64_Box_t y`, `ppl_const_Constraint_System_t cs`, `unsigned *tp`)
- `int ppl_Uint64_Box_limited_CC76_extrapolation_assign` (`ppl_Uint64_Box_t x`, `ppl_const_Uint64_Box_t y`, `ppl_const_Constraint_System_t cs`)
- `int ppl_Uint64_Box_linear_partition` (`ppl_const_Uint64_Box_t x`, `ppl_const_Uint64_Box_t y`, `ppl_Uint64_Box_t *p_inters`, `ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest`)
- `int ppl_Uint64_Box_wrap_assign` (`ppl_Uint64_Box_t ph`, `ppl_dimension_type ds[]`, `size_t n`, `enum ppl_enum_Bounded_Integer_Type_Width w`, `enum ppl_enum_Bounded_Integer_Type_Representation r`, `enum ppl_enum_Bounded_Integer_Type_Overflow o`, `const ppl_const_Constraint_System_t *pcs`, `unsigned complexity_threshold`, `int wrap_individually`)
- `int ppl_new_Uint64_Box_recycle_Constraint_System` (`ppl_Uint64_Box_t *pph`, `ppl_Constraint_System_t cs`)
- `int ppl_new_Uint64_Box_recycle_Congruence_System` (`ppl_Uint64_Box_t *pph`, `ppl_Congruence_System_t cs`)
- `int ppl_new_Uint64_Box_recycle_Generator_System` (`ppl_Uint64_Box_t *pph`, `ppl_Generator_System_t cs`)
- `int ppl_assign_Uint64_Box_from_Uint64_Box` (`ppl_Uint64_Box_t dst`, `ppl_const_Uint64_Box_t src`)
- `int ppl_Uint64_Box_add_recycled_constraints` (`ppl_Uint64_Box_t ph`, `ppl_Constraint_System_t cs`)
- `int ppl_Uint64_Box_add_recycled_congruences` (`ppl_Uint64_Box_t ph`, `ppl_Congruence_System_t cs`)
- `int ppl_termination_test_MS_Uint64_Box` (`ppl_const_Uint64_Box_t pset`)
- `int ppl_termination_test_PR_Uint64_Box` (`ppl_const_Uint64_Box_t pset`)
- `int ppl_one_affine_ranking_function_MS_Uint64_Box` (`ppl_const_Uint64_Box_t pset`, `ppl_Generator_t point`)
- `int ppl_one_affine_ranking_function_PR_Uint64_Box` (`ppl_const_Uint64_Box_t pset`, `ppl_Generator_t point`)
- `int ppl_all_affine_ranking_functions_MS_Uint64_Box` (`ppl_const_Uint64_Box_t pset`, `ppl_Polyhedron_t ph`)
- `int ppl_all_affine_ranking_functions_PR_Uint64_Box` (`ppl_const_Uint64_Box_t pset`, `ppl_Polyhedron_t ph`)
- `int ppl_termination_test_MS_Uint64_Box_2` (`ppl_const_Uint64_Box_t pset_before`, `ppl_const_Uint64_Box_t pset_after`)
- `int ppl_termination_test_PR_Uint64_Box_2` (`ppl_const_Uint64_Box_t pset_before`, `ppl_const_Uint64_Box_t pset_after`)
- `int ppl_one_affine_ranking_function_MS_Uint64_Box_2` (`ppl_const_Uint64_Box_t pset_before`, `ppl_const_Uint64_Box_t pset_after`, `ppl_Generator_t point`)
- `int ppl_one_affine_ranking_function_PR_Uint64_Box_2` (`ppl_const_Uint64_Box_t pset_before`, `ppl_const_Uint64_Box_t pset_after`, `ppl_Generator_t point`)
- `int ppl_all_affine_ranking_functions_MS_Uint64_Box_2` (`ppl_const_Uint64_Box_t pset_before`, `ppl_const_Uint64_Box_t pset_after`, `ppl_Polyhedron_t ph`)
- `int ppl_all_affine_ranking_functions_PR_Uint64_Box_2` (`ppl_const_Uint64_Box_t pset_before`, `ppl_const_Uint64_Box_t pset_after`, `ppl_Polyhedron_t ph`)

10.160.1 Detailed Description

Types and functions for [ppl_Uint64_Box_tag](#).

10.160.2 Friends And Related Function Documentation

10.160.2.1 `int ppl_all_affine_ranking_functions_MS_Uint64_Box (ppl_const_Uint64_Box_t pset, ppl_Polyhedron_t ph)` [**related**]

10.160.2.2 `int ppl_all_affine_ranking_functions_MS_Uint64_Box_2 (ppl_const_Uint64_Box_t pset_before, ppl_const_Uint64_Box_t pset_after, ppl_Polyhedron_t ph)` [**related**]

10.160.2.3 `int ppl_all_affine_ranking_functions_PR_Uint64_Box (ppl_const_Uint64_Box_t pset, ppl_Polyhedron_t ph)` [**related**]

10.160.2.4 `int ppl_all_affine_ranking_functions_PR_Uint64_Box_2 (ppl_const_Uint64_Box_t pset_before, ppl_const_Uint64_Box_t pset_after, ppl_Polyhedron_t ph)` [**related**]

10.160.2.5 `int ppl_assign_Uint64_Box_from_Uint64_Box (ppl_Uint64_Box_t dst, ppl_const_Uint64_Box_t src)` [**related**]

10.160.2.6 `int ppl_delete_Uint64_Box (ppl_const_Uint64_Box_t ph)` [**related**]

10.160.2.7 `int ppl_new_Uint64_Box_from_BD_Shape_double (ppl_Uint64_Box_t * pph, ppl_const_BD_Shape_double_t ph)` [**related**]

10.160.2.8 `int ppl_new_Uint64_Box_from_BD_Shape_double_with_complexity (ppl_Uint64_Box_t * pph, ppl_const_BD_Shape_double_t ph, int complexity)` [**related**]

- 10.160.2.9** `int ppl_new_Uint64_Box_from_BD_Shape_float (ppl_Uint64_Box_t * pph,
ppl_const_BD_Shape_float_t ph)` [**related**]
- 10.160.2.10** `int ppl_new_Uint64_Box_from_BD_Shape_float_with_complexity (ppl_Uint64_Box_t
* pph, ppl_const_BD_Shape_float_t ph, int complexity)` [**related**]
- 10.160.2.11** `int ppl_new_Uint64_Box_from_BD_Shape_int16_t (ppl_Uint64_Box_t * pph,
ppl_const_BD_Shape_int16_t_t ph)` [**related**]
- 10.160.2.12** `int ppl_new_Uint64_Box_from_BD_Shape_int16_t_with_complexity
(ppl_Uint64_Box_t * pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)`
[**related**]
- 10.160.2.13** `int ppl_new_Uint64_Box_from_BD_Shape_int32_t (ppl_Uint64_Box_t * pph,
ppl_const_BD_Shape_int32_t_t ph)` [**related**]
- 10.160.2.14** `int ppl_new_Uint64_Box_from_BD_Shape_int32_t_with_complexity
(ppl_Uint64_Box_t * pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)`
[**related**]
- 10.160.2.15** `int ppl_new_Uint64_Box_from_BD_Shape_int64_t (ppl_Uint64_Box_t * pph,
ppl_const_BD_Shape_int64_t_t ph)` [**related**]
- 10.160.2.16** `int ppl_new_Uint64_Box_from_BD_Shape_int64_t_with_complexity
(ppl_Uint64_Box_t * pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)`
[**related**]
- 10.160.2.17** `int ppl_new_Uint64_Box_from_BD_Shape_int8_t (ppl_Uint64_Box_t * pph,
ppl_const_BD_Shape_int8_t_t ph)` [**related**]

- 10.160.2.18** `int ppl_new_Uint64_Box_from_BD_Shape_int8_t_with_complexity`
(`ppl_Uint64_Box_t * pph`, `ppl_const_BD_Shape_int8_t_t ph`, `int complexity`)
[related]
- 10.160.2.19** `int ppl_new_Uint64_Box_from_BD_Shape_long_double` (`ppl_Uint64_Box_t * pph`,
`ppl_const_BD_Shape_long_double_t ph`) [related]
- 10.160.2.20** `int ppl_new_Uint64_Box_from_BD_Shape_long_double_with_complexity`
(`ppl_Uint64_Box_t * pph`, `ppl_const_BD_Shape_long_double_t ph`, `int complexity`)
[related]
- 10.160.2.21** `int ppl_new_Uint64_Box_from_BD_Shape_mpq_class` (`ppl_Uint64_Box_t * pph`,
`ppl_const_BD_Shape_mpq_class_t ph`) [related]
- 10.160.2.22** `int ppl_new_Uint64_Box_from_BD_Shape_mpq_class_with_complexity`
(`ppl_Uint64_Box_t * pph`, `ppl_const_BD_Shape_mpq_class_t ph`, `int complexity`)
[related]
- 10.160.2.23** `int ppl_new_Uint64_Box_from_BD_Shape_mpz_class` (`ppl_Uint64_Box_t * pph`,
`ppl_const_BD_Shape_mpz_class_t ph`) [related]
- 10.160.2.24** `int ppl_new_Uint64_Box_from_BD_Shape_mpz_class_with_complexity`
(`ppl_Uint64_Box_t * pph`, `ppl_const_BD_Shape_mpz_class_t ph`, `int complexity`)
[related]
- 10.160.2.25** `int ppl_new_Uint64_Box_from_C_Polyhedron` (`ppl_Uint64_Box_t * pph`,
`ppl_const_Polyhedron_t ph`) [related]
- 10.160.2.26** `int ppl_new_Uint64_Box_from_C_Polyhedron_with_complexity` (`ppl_Uint64_Box_t *`
`pph`, `ppl_const_Polyhedron_t ph`, `int complexity`) [related]

- 10.160.2.27 `int ppl_new_Uint64_Box_from_Congruence_System (ppl_Uint64_Box_t * pph,
ppl_const_Congruence_System_t cs)` [`related`]
- 10.160.2.28 `int ppl_new_Uint64_Box_from_Constraint_System (ppl_Uint64_Box_t * pph,
ppl_const_Constraint_System_t cs)` [`related`]
- 10.160.2.29 `int ppl_new_Uint64_Box_from_Double_Box (ppl_Uint64_Box_t * pph,
ppl_const_Double_Box_t ph)` [`related`]
- 10.160.2.30 `int ppl_new_Uint64_Box_from_Double_Box_with_complexity (ppl_Uint64_Box_t *
pph, ppl_const_Double_Box_t ph, int complexity)` [`related`]
- 10.160.2.31 `int ppl_new_Uint64_Box_from_Float_Box (ppl_Uint64_Box_t * pph,
ppl_const_Float_Box_t ph)` [`related`]
- 10.160.2.32 `int ppl_new_Uint64_Box_from_Float_Box_with_complexity (ppl_Uint64_Box_t *
pph, ppl_const_Float_Box_t ph, int complexity)` [`related`]
- 10.160.2.33 `int ppl_new_Uint64_Box_from_Generator_System (ppl_Uint64_Box_t * pph,
ppl_const_Generator_System_t cs)` [`related`]
- 10.160.2.34 `int ppl_new_Uint64_Box_from_Grid (ppl_Uint64_Box_t * pph, ppl_const_Grid_t ph)`
[`related`]
- 10.160.2.35 `int ppl_new_Uint64_Box_from_Grid_with_complexity (ppl_Uint64_Box_t * pph,
ppl_const_Grid_t ph, int complexity)` [`related`]

- 10.160.2.36** `int ppl_new_Uint64_Box_from_Int16_Box (ppl_Uint64_Box_t * pph,
ppl_const_Int16_Box_t ph)` [**related**]
- 10.160.2.37** `int ppl_new_Uint64_Box_from_Int16_Box_with_complexity (ppl_Uint64_Box_t *
pph, ppl_const_Int16_Box_t ph, int complexity)` [**related**]
- 10.160.2.38** `int ppl_new_Uint64_Box_from_Int32_Box (ppl_Uint64_Box_t * pph,
ppl_const_Int32_Box_t ph)` [**related**]
- 10.160.2.39** `int ppl_new_Uint64_Box_from_Int32_Box_with_complexity (ppl_Uint64_Box_t *
pph, ppl_const_Int32_Box_t ph, int complexity)` [**related**]
- 10.160.2.40** `int ppl_new_Uint64_Box_from_Int64_Box (ppl_Uint64_Box_t * pph,
ppl_const_Int64_Box_t ph)` [**related**]
- 10.160.2.41** `int ppl_new_Uint64_Box_from_Int64_Box_with_complexity (ppl_Uint64_Box_t *
pph, ppl_const_Int64_Box_t ph, int complexity)` [**related**]
- 10.160.2.42** `int ppl_new_Uint64_Box_from_Int8_Box (ppl_Uint64_Box_t * pph,
ppl_const_Int8_Box_t ph)` [**related**]
- 10.160.2.43** `int ppl_new_Uint64_Box_from_Int8_Box_with_complexity (ppl_Uint64_Box_t * pph,
ppl_const_Int8_Box_t ph, int complexity)` [**related**]
- 10.160.2.44** `int ppl_new_Uint64_Box_from_Long_Double_Box (ppl_Uint64_Box_t * pph,
ppl_const_Long_Double_Box_t ph)` [**related**]

- 10.160.2.45 `int ppl_new_Uint64_Box_from_Long_Double_Box_with_complexity`
(`ppl_Uint64_Box_t * pph`, `ppl_const_Long_Double_Box_t ph`, `int complexity`)
[related]
- 10.160.2.46 `int ppl_new_Uint64_Box_from_NNC_Polyhedron` (`ppl_Uint64_Box_t * pph`,
`ppl_const_Polyhedron_t ph`) [related]
- 10.160.2.47 `int ppl_new_Uint64_Box_from_NNC_Polyhedron_with_complexity`
(`ppl_Uint64_Box_t * pph`, `ppl_const_Polyhedron_t ph`, `int complexity`) [related]
- 10.160.2.48 `int ppl_new_Uint64_Box_from_Octagonal_Shape_double` (`ppl_Uint64_Box_t * pph`,
`ppl_const_Octagonal_Shape_double_t ph`) [related]
- 10.160.2.49 `int ppl_new_Uint64_Box_from_Octagonal_Shape_double_with_complexity`
(`ppl_Uint64_Box_t * pph`, `ppl_const_Octagonal_Shape_double_t ph`, `int complexity`)
[related]
- 10.160.2.50 `int ppl_new_Uint64_Box_from_Octagonal_Shape_float` (`ppl_Uint64_Box_t * pph`,
`ppl_const_Octagonal_Shape_float_t ph`) [related]
- 10.160.2.51 `int ppl_new_Uint64_Box_from_Octagonal_Shape_float_with_complexity`
(`ppl_Uint64_Box_t * pph`, `ppl_const_Octagonal_Shape_float_t ph`, `int complexity`)
[related]
- 10.160.2.52 `int ppl_new_Uint64_Box_from_Octagonal_Shape_int16_t` (`ppl_Uint64_Box_t * pph`,
`ppl_const_Octagonal_Shape_int16_t_t ph`) [related]
- 10.160.2.53 `int ppl_new_Uint64_Box_from_Octagonal_Shape_int16_t_with_complexity`
(`ppl_Uint64_Box_t * pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`, `int complexity`)
[related]

- 10.160.2.54** `int ppl_new_Uint64_Box_from_Octagonal_Shape_int32_t (ppl_Uint64_Box_t * pph, ppl_const_Octagonal_Shape_int32_t_t ph)` [**related**]
- 10.160.2.55** `int ppl_new_Uint64_Box_from_Octagonal_Shape_int32_t_with_complexity (ppl_Uint64_Box_t * pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)` [**related**]
- 10.160.2.56** `int ppl_new_Uint64_Box_from_Octagonal_Shape_int64_t (ppl_Uint64_Box_t * pph, ppl_const_Octagonal_Shape_int64_t_t ph)` [**related**]
- 10.160.2.57** `int ppl_new_Uint64_Box_from_Octagonal_Shape_int64_t_with_complexity (ppl_Uint64_Box_t * pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)` [**related**]
- 10.160.2.58** `int ppl_new_Uint64_Box_from_Octagonal_Shape_int8_t (ppl_Uint64_Box_t * pph, ppl_const_Octagonal_Shape_int8_t_t ph)` [**related**]
- 10.160.2.59** `int ppl_new_Uint64_Box_from_Octagonal_Shape_int8_t_with_complexity (ppl_Uint64_Box_t * pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)` [**related**]
- 10.160.2.60** `int ppl_new_Uint64_Box_from_Octagonal_Shape_long_double (ppl_Uint64_Box_t * pph, ppl_const_Octagonal_Shape_long_double_t_t ph)` [**related**]
- 10.160.2.61** `int ppl_new_Uint64_Box_from_Octagonal_Shape_long_double_with_complexity (ppl_Uint64_Box_t * pph, ppl_const_Octagonal_Shape_long_double_t_t ph, int complexity)` [**related**]
- 10.160.2.62** `int ppl_new_Uint64_Box_from_Octagonal_Shape_mpq_class (ppl_Uint64_Box_t * pph, ppl_const_Octagonal_Shape_mpq_class_t_t ph)` [**related**]

- 10.160.2.63 `int ppl_new_Uint64_Box_from_Octagonal_Shape_mpq_class_with_complexity`
(`ppl_Uint64_Box_t * pph`, `ppl_const_Octagonal_Shape_mpq_class_t ph`, `int complexity`) [`related`]
- 10.160.2.64 `int ppl_new_Uint64_Box_from_Octagonal_Shape_mpz_class` (`ppl_Uint64_Box_t *`
`pph`, `ppl_const_Octagonal_Shape_mpz_class_t ph`) [`related`]
- 10.160.2.65 `int ppl_new_Uint64_Box_from_Octagonal_Shape_mpz_class_with_complexity`
(`ppl_Uint64_Box_t * pph`, `ppl_const_Octagonal_Shape_mpz_class_t ph`, `int complexity`) [`related`]
- 10.160.2.66 `int ppl_new_Uint64_Box_from_Rational_Box` (`ppl_Uint64_Box_t * pph`,
`ppl_const_Rational_Box_t ph`) [`related`]
- 10.160.2.67 `int ppl_new_Uint64_Box_from_Rational_Box_with_complexity` (`ppl_Uint64_Box_t *`
`pph`, `ppl_const_Rational_Box_t ph`, `int complexity`) [`related`]
- 10.160.2.68 `int ppl_new_Uint64_Box_from_space_dimension` (`ppl_Uint64_Box_t * pph`,
`ppl_dimension_type d`, `int empty`) [`related`]
- 10.160.2.69 `int ppl_new_Uint64_Box_from_Uint16_Box` (`ppl_Uint64_Box_t * pph`,
`ppl_const_Uint16_Box_t ph`) [`related`]
- 10.160.2.70 `int ppl_new_Uint64_Box_from_Uint16_Box_with_complexity` (`ppl_Uint64_Box_t *`
`pph`, `ppl_const_Uint16_Box_t ph`, `int complexity`) [`related`]
- 10.160.2.71 `int ppl_new_Uint64_Box_from_Uint32_Box` (`ppl_Uint64_Box_t * pph`,
`ppl_const_Uint32_Box_t ph`) [`related`]

- 10.160.2.72** `int ppl_new_Uint64_Box_from_Uint32_Box_with_complexity (ppl_Uint64_Box_t * pph, ppl_const_Uint32_Box_t ph, int complexity)` [**related**]
- 10.160.2.73** `int ppl_new_Uint64_Box_from_Uint64_Box (ppl_Uint64_Box_t * pph, ppl_const_Uint64_Box_t ph)` [**related**]
- 10.160.2.74** `int ppl_new_Uint64_Box_from_Uint64_Box_with_complexity (ppl_Uint64_Box_t * pph, ppl_const_Uint64_Box_t ph, int complexity)` [**related**]
- 10.160.2.75** `int ppl_new_Uint64_Box_from_Uint8_Box (ppl_Uint64_Box_t * pph, ppl_const_Uint8_Box_t ph)` [**related**]
- 10.160.2.76** `int ppl_new_Uint64_Box_from_Uint8_Box_with_complexity (ppl_Uint64_Box_t * pph, ppl_const_Uint8_Box_t ph, int complexity)` [**related**]
- 10.160.2.77** `int ppl_new_Uint64_Box_from_Z_Box (ppl_Uint64_Box_t * pph, ppl_const_Z_Box_t ph)` [**related**]
- 10.160.2.78** `int ppl_new_Uint64_Box_from_Z_Box_with_complexity (ppl_Uint64_Box_t * pph, ppl_const_Z_Box_t ph, int complexity)` [**related**]
- 10.160.2.79** `int ppl_new_Uint64_Box_recycle_Congruence_System (ppl_Uint64_Box_t * pph, ppl_Congruence_System_t cs)` [**related**]
- 10.160.2.80** `int ppl_new_Uint64_Box_recycle_Constraint_System (ppl_Uint64_Box_t * pph, ppl_Constraint_System_t cs)` [**related**]

- 10.160.2.81 `int ppl_new_Uint64_Box_recycle_Generator_System (ppl_Uint64_Box_t * pph,
ppl_Generator_System_t cs)` [**related**]
- 10.160.2.82 `int ppl_one_affine_ranking_function_MS_Uint64_Box (ppl_const_Uint64_Box_t pset,
ppl_Generator_t point)` [**related**]
- 10.160.2.83 `int ppl_one_affine_ranking_function_MS_Uint64_Box_2 (ppl_const_Uint64_Box_t
pset_before, ppl_const_Uint64_Box_t pset_after, ppl_Generator_t point)`
[**related**]
- 10.160.2.84 `int ppl_one_affine_ranking_function_PR_Uint64_Box (ppl_const_Uint64_Box_t pset,
ppl_Generator_t point)` [**related**]
- 10.160.2.85 `int ppl_one_affine_ranking_function_PR_Uint64_Box_2 (ppl_const_Uint64_Box_t
pset_before, ppl_const_Uint64_Box_t pset_after, ppl_Generator_t point)`
[**related**]
- 10.160.2.86 `int ppl_termination_test_MS_Uint64_Box (ppl_const_Uint64_Box_t pset)`
[**related**]
- 10.160.2.87 `int ppl_termination_test_MS_Uint64_Box_2 (ppl_const_Uint64_Box_t pset_before,
ppl_const_Uint64_Box_t pset_after)` [**related**]
- 10.160.2.88 `int ppl_termination_test_PR_Uint64_Box (ppl_const_Uint64_Box_t pset)`
[**related**]
- 10.160.2.89 `int ppl_termination_test_PR_Uint64_Box_2 (ppl_const_Uint64_Box_t pset_before,
ppl_const_Uint64_Box_t pset_after)` [**related**]

- 10.160.2.90** `int ppl_Uint64_Box_add_congruence (ppl_Uint64_Box_t ph, ppl_const_Congruence_t c)` [**related**]
- 10.160.2.91** `int ppl_Uint64_Box_add_congruences (ppl_Uint64_Box_t ph, ppl_const_Congruence_System_t cs)` [**related**]
- 10.160.2.92** `int ppl_Uint64_Box_add_constraint (ppl_Uint64_Box_t ph, ppl_const_Constraint_t c)` [**related**]
- 10.160.2.93** `int ppl_Uint64_Box_add_constraints (ppl_Uint64_Box_t ph, ppl_const_Constraint_System_t cs)` [**related**]
- 10.160.2.94** `int ppl_Uint64_Box_add_recycled_congruences (ppl_Uint64_Box_t ph, ppl_Congruence_System_t cs)` [**related**]
- 10.160.2.95** `int ppl_Uint64_Box_add_recycled_constraints (ppl_Uint64_Box_t ph, ppl_Constraint_System_t cs)` [**related**]
- 10.160.2.96** `int ppl_Uint64_Box_add_space_dimensions_and_embed (ppl_Uint64_Box_t ph, ppl_dimension_type d)` [**related**]
- 10.160.2.97** `int ppl_Uint64_Box_add_space_dimensions_and_project (ppl_Uint64_Box_t ph, ppl_dimension_type d)` [**related**]
- 10.160.2.98** `int ppl_Uint64_Box_affine_dimension (ppl_const_Uint64_Box_t ph, ppl_dimension_type * m)` [**related**]

- 10.160.2.99** `int ppl_Uint64_Box_affine_image (ppl_Uint64_Box_t ph, ppl_dimension_type var,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.160.2.100** `int ppl_Uint64_Box_affine_preimage (ppl_Uint64_Box_t ph, ppl_dimension_type
var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.160.2.101** `int ppl_Uint64_Box_bounded_affine_image (ppl_Uint64_Box_t
ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb,
ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [**related**]
- 10.160.2.102** `int ppl_Uint64_Box_bounded_affine_preimage (ppl_Uint64_Box_t
ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb,
ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [**related**]
- 10.160.2.103** `int ppl_Uint64_Box_bounds_from_above (ppl_const_Uint64_Box_t ph,
ppl_const_Linear_Expression_t le)` [**related**]
- 10.160.2.104** `int ppl_Uint64_Box_bounds_from_below (ppl_const_Uint64_Box_t ph,
ppl_const_Linear_Expression_t le)` [**related**]
- 10.160.2.105** `int ppl_Uint64_Box_CC76_widening_assign (ppl_Uint64_Box_t x,
ppl_const_Uint64_Box_t y)` [**related**]
- 10.160.2.106** `int ppl_Uint64_Box_CC76_widening_assign_with_tokens (ppl_Uint64_Box_t x,
ppl_const_Uint64_Box_t y, unsigned * tp)` [**related**]
- 10.160.2.107** `int ppl_Uint64_Box_concatenate_assign (ppl_Uint64_Box_t x,
ppl_const_Uint64_Box_t y)` [**related**]

- 10.160.2.108 `int ppl_Uint64_Box_constrains (ppl_Uint64_Box_t ph, ppl_dimension_type var)`
[related]
- 10.160.2.109 `int ppl_Uint64_Box_contains_integer_point (ppl_const_Uint64_Box_t ph)`
[related]
- 10.160.2.110 `int ppl_Uint64_Box_contains_Uint64_Box (ppl_const_Uint64_Box_t x,
ppl_const_Uint64_Box_t y)` [related]
- 10.160.2.111 `int ppl_Uint64_Box_difference_assign (ppl_Uint64_Box_t x,
ppl_const_Uint64_Box_t y)` [related]
- 10.160.2.112 `int ppl_Uint64_Box_drop_some_non_integer_points (ppl_Uint64_Box_t ph, int
complexity)` [related]
- 10.160.2.113 `int ppl_Uint64_Box_drop_some_non_integer_points_2 (ppl_Uint64_Box_t ph,
ppl_dimension_type ds[], size_t n, int complexity)` [related]
- 10.160.2.114 `int ppl_Uint64_Box_equals_Uint64_Box (ppl_const_Uint64_Box_t x,
ppl_const_Uint64_Box_t y)` [related]
- 10.160.2.115 `int ppl_Uint64_Box_expand_space_dimension (ppl_Uint64_Box_t ph,
ppl_dimension_type d, ppl_dimension_type m)` [related]
- 10.160.2.116 `int ppl_Uint64_Box_external_memory_in_bytes (ppl_const_Uint64_Box_t ps, size_t
* sz)` [related]

- 10.160.2.117 `int ppl_Uint64_Box_fold_space_dimensions (ppl_Uint64_Box_t ph,
ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [`related`]
- 10.160.2.118 `int ppl_Uint64_Box_frequency (ppl_const_Uint64_Box_t ph,
ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t
ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)` [`related`]
- 10.160.2.119 `int ppl_Uint64_Box_generalized_affine_image (ppl_Uint64_Box_t ph,
ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.160.2.120 `int ppl_Uint64_Box_generalized_affine_image_lhs_rhs (ppl_Uint64_Box_t ph,
ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym,
ppl_const_Linear_Expression_t rhs)` [`related`]
- 10.160.2.121 `int ppl_Uint64_Box_generalized_affine_preimage (ppl_Uint64_Box_t
ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.160.2.122 `int ppl_Uint64_Box_generalized_affine_preimage_lhs_rhs (ppl_Uint64_Box_t ph,
ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym,
ppl_const_Linear_Expression_t rhs)` [`related`]
- 10.160.2.123 `int ppl_Uint64_Box_get_congruences (ppl_const_Uint64_Box_t ph,
ppl_const_Congruence_System_t * pcs)` [`related`]
- 10.160.2.124 `int ppl_Uint64_Box_get_constraints (ppl_const_Uint64_Box_t ph,
ppl_const_Constraint_System_t * pcs)` [`related`]

- 10.160.2.125 `int ppl_Uint64_Box_get_minimized_congruences (ppl_const_Uint64_Box_t ph,
ppl_const_Congruence_System_t * pcs)` [related]
- 10.160.2.126 `int ppl_Uint64_Box_get_minimized_constraints (ppl_const_Uint64_Box_t ph,
ppl_const_Constraint_System_t * pcs)` [related]
- 10.160.2.127 `int ppl_Uint64_Box_intersection_assign (ppl_Uint64_Box_t x,
ppl_const_Uint64_Box_t y)` [related]
- 10.160.2.128 `int ppl_Uint64_Box_is_bounded (ppl_const_Uint64_Box_t ph)` [related]
- 10.160.2.129 `int ppl_Uint64_Box_is_discrete (ppl_const_Uint64_Box_t ph)` [related]
- 10.160.2.130 `int ppl_Uint64_Box_is_disjoint_from_Uint64_Box (ppl_const_Uint64_Box_t x,
ppl_const_Uint64_Box_t y)` [related]
- 10.160.2.131 `int ppl_Uint64_Box_is_empty (ppl_const_Uint64_Box_t ph)` [related]
- 10.160.2.132 `int ppl_Uint64_Box_is_topologically_closed (ppl_const_Uint64_Box_t ph)`
[related]
- 10.160.2.133 `int ppl_Uint64_Box_is_universe (ppl_const_Uint64_Box_t ph)` [related]
- 10.160.2.134 `int ppl_Uint64_Box_limited_CC76_extrapolation_assign (ppl_Uint64_Box_t x,
ppl_const_Uint64_Box_t y, ppl_const_Constraint_System_t cs)` [related]

- 10.160.2.135** `int ppl_Uint64_Box_limited_CC76_extrapolation_assign_with_tokens`
`(ppl_Uint64_Box_t x, ppl_const_Uint64_Box_t y, ppl_const_Constraint_System_t`
`cs, unsigned * tp) [related]`
- 10.160.2.136** `int ppl_Uint64_Box_linear_partition` (`ppl_const_Uint64_Box_t`
`x, ppl_const_Uint64_Box_t y, ppl_Uint64_Box_t * p_inters,`
`ppl_Pointset_Powerset_NNC_Polyhedron_t * p_rest) [related]`
- 10.160.2.137** `int ppl_Uint64_Box_map_space_dimensions` (`ppl_Uint64_Box_t ph,`
`ppl_dimension_type maps[], size_t n) [related]`
- 10.160.2.138** `int ppl_Uint64_Box_maximize` (`ppl_const_Uint64_Box_t ph,`
`ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d,`
`int * poptimum) [related]`
- 10.160.2.139** `int ppl_Uint64_Box_maximize_with_point` (`ppl_const_Uint64_Box_t ph,`
`ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d,`
`int * poptimum, ppl_Generator_t point) [related]`
- 10.160.2.140** `int ppl_Uint64_Box_minimize` (`ppl_const_Uint64_Box_t ph,`
`ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d,`
`int * poptimum) [related]`
- 10.160.2.141** `int ppl_Uint64_Box_minimize_with_point` (`ppl_const_Uint64_Box_t ph,`
`ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d,`
`int * poptimum, ppl_Generator_t point) [related]`
- 10.160.2.142** `int ppl_Uint64_Box_OK` (`ppl_const_Uint64_Box_t ph) [related]`

- 10.160.2.143 `int ppl_Uint64_Box_refine_with_congruence (ppl_Uint64_Box_t ph,
ppl_const_Congruence_t c)` [`related`]
- 10.160.2.144 `int ppl_Uint64_Box_refine_with_congruences (ppl_Uint64_Box_t ph,
ppl_const_Congruence_System_t cs)` [`related`]
- 10.160.2.145 `int ppl_Uint64_Box_refine_with_constraint (ppl_Uint64_Box_t ph,
ppl_const_Constraint_t c)` [`related`]
- 10.160.2.146 `int ppl_Uint64_Box_refine_with_constraints (ppl_Uint64_Box_t ph,
ppl_const_Constraint_System_t cs)` [`related`]
- 10.160.2.147 `int ppl_Uint64_Box_relation_with_Congruence (ppl_const_Uint64_Box_t ph,
ppl_const_Congruence_t c)` [`related`]
- 10.160.2.148 `int ppl_Uint64_Box_relation_with_Constraint (ppl_const_Uint64_Box_t ph,
ppl_const_Constraint_t c)` [`related`]
- 10.160.2.149 `int ppl_Uint64_Box_relation_with_Generator (ppl_const_Uint64_Box_t ph,
ppl_const_Generator_t c)` [`related`]
- 10.160.2.150 `int ppl_Uint64_Box_remove_higher_space_dimensions (ppl_Uint64_Box_t ph,
ppl_dimension_type d)` [`related`]
- 10.160.2.151 `int ppl_Uint64_Box_remove_space_dimensions (ppl_Uint64_Box_t ph,
ppl_dimension_type ds[], size_t n)` [`related`]

- 10.160.2.152 `int ppl_Uint64_Box_simplify_using_context_assign (ppl_Uint64_Box_t x, ppl_const_Uint64_Box_ty) [related]`
- 10.160.2.153 `int ppl_Uint64_Box_space_dimension (ppl_const_Uint64_Box_t ph, ppl_dimension_type * m) [related]`
- 10.160.2.154 `int ppl_Uint64_Box_strictly_contains_Uint64_Box (ppl_const_Uint64_Box_t x, ppl_const_Uint64_Box_ty) [related]`
- 10.160.2.155 `int ppl_Uint64_Box_time_elapse_assign (ppl_Uint64_Box_t x, ppl_const_Uint64_Box_ty) [related]`
- 10.160.2.156 `int ppl_Uint64_Box_topological_closure_assign (ppl_Uint64_Box_t ph) [related]`
- 10.160.2.157 `int ppl_Uint64_Box_total_memory_in_bytes (ppl_const_Uint64_Box_t ps, size_t * sz) [related]`
- 10.160.2.158 `int ppl_Uint64_Box_unconstrain_space_dimension (ppl_Uint64_Box_t ph, ppl_dimension_type var) [related]`
- 10.160.2.159 `int ppl_Uint64_Box_unconstrain_space_dimensions (ppl_Uint64_Box_t ph, ppl_dimension_type ds[], size_t n) [related]`
- 10.160.2.160 `int ppl_Uint64_Box_upper_bound_assign (ppl_Uint64_Box_t x, ppl_const_Uint64_Box_ty) [related]`

- 10.160.2.161** `int ppl_Uint64_Box_upper_bound_assign_if_exact (ppl_Uint64_Box_t x, ppl_const_Uint64_Box_t y) [related]`
- 10.160.2.162** `int ppl_Uint64_Box_widening_assign (ppl_Uint64_Box_t x, ppl_const_Uint64_Box_t y) [related]`
- 10.160.2.163** `int ppl_Uint64_Box_widening_assign_with_tokens (ppl_Uint64_Box_t x, ppl_const_Uint64_Box_t y, unsigned *tp) [related]`
- 10.160.2.164** `int ppl_Uint64_Box_wrap_assign (ppl_Uint64_Box_t ph, ppl_dimension_type ds[], size_t n, enum ppl_enum_Bounded_Integer_Type_Width w, enum ppl_enum_Bounded_Integer_Type_Representation r, enum ppl_enum_Bounded_Integer_Type_Overflow o, const ppl_const_Constraint_System_t *pcs, unsigned complexity_threshold, int wrap_individually) [related]`

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.161 ppl_Uint8_Box_tag Interface Reference

Types and functions for [ppl_Uint8_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Uint8_Box (ppl_const_Uint8_Box_t ph)`
- `int ppl_new_Uint8_Box_from_space_dimension (ppl_Uint8_Box_t *pph, ppl_dimension_type d, int empty)`
- `int ppl_new_Uint8_Box_from_Int8_Box (ppl_Uint8_Box_t *pph, ppl_const_Int8_Box_t ph)`
- `int ppl_new_Uint8_Box_from_Int16_Box (ppl_Uint8_Box_t *pph, ppl_const_Int16_Box_t ph)`
- `int ppl_new_Uint8_Box_from_Int32_Box (ppl_Uint8_Box_t *pph, ppl_const_Int32_Box_t ph)`
- `int ppl_new_Uint8_Box_from_Int64_Box (ppl_Uint8_Box_t *pph, ppl_const_Int64_Box_t ph)`
- `int ppl_new_Uint8_Box_from_Uint8_Box (ppl_Uint8_Box_t *pph, ppl_const_Uint8_Box_t ph)`
- `int ppl_new_Uint8_Box_from_Uint16_Box (ppl_Uint8_Box_t *pph, ppl_const_Uint16_Box_t ph)`
- `int ppl_new_Uint8_Box_from_Uint32_Box (ppl_Uint8_Box_t *pph, ppl_const_Uint32_Box_t ph)`
- `int ppl_new_Uint8_Box_from_Uint64_Box (ppl_Uint8_Box_t *pph, ppl_const_Uint64_Box_t ph)`
- `int ppl_new_Uint8_Box_from_Z_Box (ppl_Uint8_Box_t *pph, ppl_const_Z_Box_t ph)`

- [int ppl_new_Uint8_Box_from_Rational_Box](#) (ppl_Uint8_Box_t *pph, ppl_const_Rational_Box_t ph)
- [int ppl_new_Uint8_Box_from_BD_Shape_int8_t](#) (ppl_Uint8_Box_t *pph, ppl_const_BD_Shape_int8_t_t ph)
- [int ppl_new_Uint8_Box_from_BD_Shape_int16_t](#) (ppl_Uint8_Box_t *pph, ppl_const_BD_Shape_int16_t_t ph)
- [int ppl_new_Uint8_Box_from_BD_Shape_int32_t](#) (ppl_Uint8_Box_t *pph, ppl_const_BD_Shape_int32_t_t ph)
- [int ppl_new_Uint8_Box_from_BD_Shape_int64_t](#) (ppl_Uint8_Box_t *pph, ppl_const_BD_Shape_int64_t_t ph)
- [int ppl_new_Uint8_Box_from_BD_Shape_mpz_class](#) (ppl_Uint8_Box_t *pph, ppl_const_BD_Shape_mpz_class_t ph)
- [int ppl_new_Uint8_Box_from_BD_Shape_mpq_class](#) (ppl_Uint8_Box_t *pph, ppl_const_BD_Shape_mpq_class_t ph)
- [int ppl_new_Uint8_Box_from_Octagonal_Shape_int8_t](#) (ppl_Uint8_Box_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph)
- [int ppl_new_Uint8_Box_from_Octagonal_Shape_int16_t](#) (ppl_Uint8_Box_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph)
- [int ppl_new_Uint8_Box_from_Octagonal_Shape_int32_t](#) (ppl_Uint8_Box_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph)
- [int ppl_new_Uint8_Box_from_Octagonal_Shape_int64_t](#) (ppl_Uint8_Box_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph)
- [int ppl_new_Uint8_Box_from_Octagonal_Shape_mpz_class](#) (ppl_Uint8_Box_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph)
- [int ppl_new_Uint8_Box_from_Octagonal_Shape_mpq_class](#) (ppl_Uint8_Box_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph)
- [int ppl_new_Uint8_Box_from_C_Polyhedron](#) (ppl_Uint8_Box_t *pph, ppl_const_Polyhedron_t ph)
- [int ppl_new_Uint8_Box_from_NNC_Polyhedron](#) (ppl_Uint8_Box_t *pph, ppl_const_Polyhedron_t ph)
- [int ppl_new_Uint8_Box_from_Grid](#) (ppl_Uint8_Box_t *pph, ppl_const_Grid_t ph)
- [int ppl_new_Uint8_Box_from_Float_Box](#) (ppl_Uint8_Box_t *pph, ppl_const_Float_Box_t ph)
- [int ppl_new_Uint8_Box_from_BD_Shape_float](#) (ppl_Uint8_Box_t *pph, ppl_const_BD_Shape_float_t ph)
- [int ppl_new_Uint8_Box_from_Octagonal_Shape_float](#) (ppl_Uint8_Box_t *pph, ppl_const_Octagonal_Shape_float_t ph)
- [int ppl_new_Uint8_Box_from_Double_Box](#) (ppl_Uint8_Box_t *pph, ppl_const_Double_Box_t ph)
- [int ppl_new_Uint8_Box_from_BD_Shape_double](#) (ppl_Uint8_Box_t *pph, ppl_const_BD_Shape_double_t ph)
- [int ppl_new_Uint8_Box_from_Octagonal_Shape_double](#) (ppl_Uint8_Box_t *pph, ppl_const_Octagonal_Shape_double_t ph)
- [int ppl_new_Uint8_Box_from_Long_Double_Box](#) (ppl_Uint8_Box_t *pph, ppl_const_Long_Double_Box_t ph)
- [int ppl_new_Uint8_Box_from_BD_Shape_long_double](#) (ppl_Uint8_Box_t *pph, ppl_const_BD_Shape_long_double_t ph)
- [int ppl_new_Uint8_Box_from_Octagonal_Shape_long_double](#) (ppl_Uint8_Box_t *pph, ppl_const_Octagonal_Shape_long_double_t ph)
- [int ppl_new_Uint8_Box_from_Int8_Box_with_complexity](#) (ppl_Uint8_Box_t *pph, ppl_const_Int8_Box_t ph, int complexity)
- [int ppl_new_Uint8_Box_from_Int16_Box_with_complexity](#) (ppl_Uint8_Box_t *pph, ppl_const_Int16_Box_t ph, int complexity)
- [int ppl_new_Uint8_Box_from_Int32_Box_with_complexity](#) (ppl_Uint8_Box_t *pph, ppl_const_Int32_Box_t ph, int complexity)

- int [ppl_new_Uint8_Box_from_Int64_Box_with_complexity](#) (ppl_Uint8_Box_t *pph, ppl_const_Int64_Box_t ph, int complexity)
- int [ppl_new_Uint8_Box_from_Uint8_Box_with_complexity](#) (ppl_Uint8_Box_t *pph, ppl_const_Uint8_Box_t ph, int complexity)
- int [ppl_new_Uint8_Box_from_Uint16_Box_with_complexity](#) (ppl_Uint8_Box_t *pph, ppl_const_Uint16_Box_t ph, int complexity)
- int [ppl_new_Uint8_Box_from_Uint32_Box_with_complexity](#) (ppl_Uint8_Box_t *pph, ppl_const_Uint32_Box_t ph, int complexity)
- int [ppl_new_Uint8_Box_from_Uint64_Box_with_complexity](#) (ppl_Uint8_Box_t *pph, ppl_const_Uint64_Box_t ph, int complexity)
- int [ppl_new_Uint8_Box_from_Z_Box_with_complexity](#) (ppl_Uint8_Box_t *pph, ppl_const_Z_Box_t ph, int complexity)
- int [ppl_new_Uint8_Box_from_Rational_Box_with_complexity](#) (ppl_Uint8_Box_t *pph, ppl_const_Rational_Box_t ph, int complexity)
- int [ppl_new_Uint8_Box_from_BD_Shape_int8_t_with_complexity](#) (ppl_Uint8_Box_t *pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)
- int [ppl_new_Uint8_Box_from_BD_Shape_int16_t_with_complexity](#) (ppl_Uint8_Box_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)
- int [ppl_new_Uint8_Box_from_BD_Shape_int32_t_with_complexity](#) (ppl_Uint8_Box_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)
- int [ppl_new_Uint8_Box_from_BD_Shape_int64_t_with_complexity](#) (ppl_Uint8_Box_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)
- int [ppl_new_Uint8_Box_from_BD_Shape_mpz_class_with_complexity](#) (ppl_Uint8_Box_t *pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_Uint8_Box_from_BD_Shape_mpq_class_with_complexity](#) (ppl_Uint8_Box_t *pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_Uint8_Box_from_Octagonal_Shape_int8_t_with_complexity](#) (ppl_Uint8_Box_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)
- int [ppl_new_Uint8_Box_from_Octagonal_Shape_int16_t_with_complexity](#) (ppl_Uint8_Box_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)
- int [ppl_new_Uint8_Box_from_Octagonal_Shape_int32_t_with_complexity](#) (ppl_Uint8_Box_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)
- int [ppl_new_Uint8_Box_from_Octagonal_Shape_int64_t_with_complexity](#) (ppl_Uint8_Box_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)
- int [ppl_new_Uint8_Box_from_Octagonal_Shape_mpz_class_with_complexity](#) (ppl_Uint8_Box_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_Uint8_Box_from_Octagonal_Shape_mpq_class_with_complexity](#) (ppl_Uint8_Box_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_Uint8_Box_from_C_Polyhedron_with_complexity](#) (ppl_Uint8_Box_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_Uint8_Box_from_NNC_Polyhedron_with_complexity](#) (ppl_Uint8_Box_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_Uint8_Box_from_Grid_with_complexity](#) (ppl_Uint8_Box_t *pph, ppl_const_Grid_t ph, int complexity)
- int [ppl_new_Uint8_Box_from_Float_Box_with_complexity](#) (ppl_Uint8_Box_t *pph, ppl_const_Float_Box_t ph, int complexity)
- int [ppl_new_Uint8_Box_from_BD_Shape_float_with_complexity](#) (ppl_Uint8_Box_t *pph, ppl_const_BD_Shape_float_t ph, int complexity)
- int [ppl_new_Uint8_Box_from_Octagonal_Shape_float_with_complexity](#) (ppl_Uint8_Box_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)
- int [ppl_new_Uint8_Box_from_Double_Box_with_complexity](#) (ppl_Uint8_Box_t *pph, ppl_const_Double_Box_t ph, int complexity)

- int [ppl_new_UInt8_Box_from_BD_Shape_double_with_complexity](#) (ppl_UInt8_Box_t *pph, ppl_const_BD_Shape_double_t ph, int complexity)
- int [ppl_new_UInt8_Box_from_Octagonal_Shape_double_with_complexity](#) (ppl_UInt8_Box_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)
- int [ppl_new_UInt8_Box_from_Long_Double_Box_with_complexity](#) (ppl_UInt8_Box_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- int [ppl_new_UInt8_Box_from_BD_Shape_long_double_with_complexity](#) (ppl_UInt8_Box_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity)
- int [ppl_new_UInt8_Box_from_Octagonal_Shape_long_double_with_complexity](#) (ppl_UInt8_Box_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)
- int [ppl_new_UInt8_Box_from_Constraint_System](#) (ppl_UInt8_Box_t *pph, ppl_const_Constraint_System_t cs)
- int [ppl_new_UInt8_Box_from_Congruence_System](#) (ppl_UInt8_Box_t *pph, ppl_const_Congruence_System_t cs)
- int [ppl_new_UInt8_Box_from_Generator_System](#) (ppl_UInt8_Box_t *pph, ppl_const_Generator_System_t cs)
- int [ppl_UInt8_Box_space_dimension](#) (ppl_const_UInt8_Box_t ph, [ppl_dimension_type](#) *m)
- int [ppl_UInt8_Box_affine_dimension](#) (ppl_const_UInt8_Box_t ph, [ppl_dimension_type](#) *m)
- int [ppl_UInt8_Box_relation_with_Constraint](#) (ppl_const_UInt8_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_UInt8_Box_relation_with_Generator](#) (ppl_const_UInt8_Box_t ph, ppl_const_Generator_t c)
- int [ppl_UInt8_Box_relation_with_Congruence](#) (ppl_const_UInt8_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_UInt8_Box_get_constraints](#) (ppl_const_UInt8_Box_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_UInt8_Box_get_congruences](#) (ppl_const_UInt8_Box_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_UInt8_Box_get_minimized_constraints](#) (ppl_const_UInt8_Box_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_UInt8_Box_get_minimized_congruences](#) (ppl_const_UInt8_Box_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_UInt8_Box_is_empty](#) (ppl_const_UInt8_Box_t ph)
- int [ppl_UInt8_Box_is_universe](#) (ppl_const_UInt8_Box_t ph)
- int [ppl_UInt8_Box_is_bounded](#) (ppl_const_UInt8_Box_t ph)
- int [ppl_UInt8_Box_contains_integer_point](#) (ppl_const_UInt8_Box_t ph)
- int [ppl_UInt8_Box_is_topologically_closed](#) (ppl_const_UInt8_Box_t ph)
- int [ppl_UInt8_Box_is_discrete](#) (ppl_const_UInt8_Box_t ph)
- int [ppl_UInt8_Box_topological_closure_assign](#) (ppl_UInt8_Box_t ph)
- int [ppl_UInt8_Box_bounds_from_above](#) (ppl_const_UInt8_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_UInt8_Box_bounds_from_below](#) (ppl_const_UInt8_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_UInt8_Box_maximize](#) (ppl_const_UInt8_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_UInt8_Box_minimize](#) (ppl_const_UInt8_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_UInt8_Box_maximize_with_point](#) (ppl_const_UInt8_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_UInt8_Box_minimize_with_point](#) (ppl_const_UInt8_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)

- int [ppl_Uint8_Box_frequency](#) (ppl_const_Uint8_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)
- int [ppl_Uint8_Box_contains_Uint8_Box](#) (ppl_const_Uint8_Box_t x, ppl_const_Uint8_Box_t y)
- int [ppl_Uint8_Box_strictly_contains_Uint8_Box](#) (ppl_const_Uint8_Box_t x, ppl_const_Uint8_Box_t y)
- int [ppl_Uint8_Box_is_disjoint_from_Uint8_Box](#) (ppl_const_Uint8_Box_t x, ppl_const_Uint8_Box_t y)
- int [ppl_Uint8_Box_equals_Uint8_Box](#) (ppl_const_Uint8_Box_t x, ppl_const_Uint8_Box_t y)
- int [ppl_Uint8_Box_OK](#) (ppl_const_Uint8_Box_t ph)
- int [ppl_Uint8_Box_add_constraint](#) (ppl_Uint8_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Uint8_Box_add_congruence](#) (ppl_Uint8_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Uint8_Box_add_constraints](#) (ppl_Uint8_Box_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Uint8_Box_add_congruences](#) (ppl_Uint8_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Uint8_Box_refine_with_constraint](#) (ppl_Uint8_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Uint8_Box_refine_with_congruence](#) (ppl_Uint8_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Uint8_Box_refine_with_constraints](#) (ppl_Uint8_Box_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Uint8_Box_refine_with_congruences](#) (ppl_Uint8_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Uint8_Box_intersection_assign](#) (ppl_Uint8_Box_t x, ppl_const_Uint8_Box_t y)
- int [ppl_Uint8_Box_upper_bound_assign](#) (ppl_Uint8_Box_t x, ppl_const_Uint8_Box_t y)
- int [ppl_Uint8_Box_difference_assign](#) (ppl_Uint8_Box_t x, ppl_const_Uint8_Box_t y)
- int [ppl_Uint8_Box_concatenate_assign](#) (ppl_Uint8_Box_t x, ppl_const_Uint8_Box_t y)
- int [ppl_Uint8_Box_time_elapse_assign](#) (ppl_Uint8_Box_t x, ppl_const_Uint8_Box_t y)
- int [ppl_Uint8_Box_upper_bound_assign_if_exact](#) (ppl_Uint8_Box_t x, ppl_const_Uint8_Box_t y)
- int [ppl_Uint8_Box_simplify_using_context_assign](#) (ppl_Uint8_Box_t x, ppl_const_Uint8_Box_t y)
- int [ppl_Uint8_Box_constrains](#) (ppl_Uint8_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Uint8_Box_unconstrain_space_dimension](#) (ppl_Uint8_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Uint8_Box_unconstrain_space_dimensions](#) (ppl_Uint8_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Uint8_Box_affine_image](#) (ppl_Uint8_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Uint8_Box_affine_preimage](#) (ppl_Uint8_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Uint8_Box_bounded_affine_image](#) (ppl_Uint8_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Uint8_Box_bounded_affine_preimage](#) (ppl_Uint8_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Uint8_Box_generalized_affine_image](#) (ppl_Uint8_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Uint8_Box_generalized_affine_preimage](#) (ppl_Uint8_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Uint8_Box_generalized_affine_image_lhs_rhs](#) (ppl_Uint8_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Uint8_Box_generalized_affine_preimage_lhs_rhs](#) (ppl_Uint8_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Uint8_Box_add_space_dimensions_and_embed](#) (ppl_Uint8_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Uint8_Box_add_space_dimensions_and_project](#) (ppl_Uint8_Box_t ph, [ppl_dimension_type](#) d)

- int [ppl_Uint8_Box_remove_space_dimensions](#) (ppl_Uint8_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Uint8_Box_remove_higher_space_dimensions](#) (ppl_Uint8_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Uint8_Box_expand_space_dimension](#) (ppl_Uint8_Box_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Uint8_Box_fold_space_dimensions](#) (ppl_Uint8_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_Uint8_Box_map_space_dimensions](#) (ppl_Uint8_Box_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_Uint8_Box_drop_some_non_integer_points](#) (ppl_Uint8_Box_t ph, int complexity)
- int [ppl_Uint8_Box_drop_some_non_integer_points_2](#) (ppl_Uint8_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_Uint8_Box_external_memory_in_bytes](#) (ppl_const_Uint8_Box_t ps, size_t *sz)
- int [ppl_Uint8_Box_total_memory_in_bytes](#) (ppl_const_Uint8_Box_t ps, size_t *sz)
- int [ppl_Uint8_Box_CC76_widening_assign_with_tokens](#) (ppl_Uint8_Box_t x, ppl_const_Uint8_Box_t y, unsigned *tp)
- int [ppl_Uint8_Box_CC76_widening_assign](#) (ppl_Uint8_Box_t x, ppl_const_Uint8_Box_t y)
- int [ppl_Uint8_Box_widening_assign_with_tokens](#) (ppl_Uint8_Box_t x, ppl_const_Uint8_Box_t y, unsigned *tp)
- int [ppl_Uint8_Box_widening_assign](#) (ppl_Uint8_Box_t x, ppl_const_Uint8_Box_t y)
- int [ppl_Uint8_Box_limited_CC76_extrapolation_assign_with_tokens](#) (ppl_Uint8_Box_t x, ppl_const_Uint8_Box_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- int [ppl_Uint8_Box_limited_CC76_extrapolation_assign](#) (ppl_Uint8_Box_t x, ppl_const_Uint8_Box_t y, ppl_const_Constraint_System_t cs)
- int [ppl_Uint8_Box_linear_partition](#) (ppl_const_Uint8_Box_t x, ppl_const_Uint8_Box_t y, ppl_Uint8_Box_t *p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest)
- int [ppl_Uint8_Box_wrap_assign](#) (ppl_Uint8_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, enum [ppl_enum_Bounded_Integer_Type_Width](#) w, enum [ppl_enum_Bounded_Integer_Type_Representation](#) r, enum [ppl_enum_Bounded_Integer_Type_Overflow](#) o, const ppl_const_Constraint_System_t *pcs, unsigned complexity_threshold, int wrap_individually)
- int [ppl_new_Uint8_Box_recycle_Constraint_System](#) (ppl_Uint8_Box_t *pph, ppl_Constraint_System_t cs)
- int [ppl_new_Uint8_Box_recycle_Congruence_System](#) (ppl_Uint8_Box_t *pph, ppl_Congruence_System_t cs)
- int [ppl_new_Uint8_Box_recycle_Generator_System](#) (ppl_Uint8_Box_t *pph, ppl_Generator_System_t cs)
- int [ppl_assign_Uint8_Box_from_Uint8_Box](#) (ppl_Uint8_Box_t dst, ppl_const_Uint8_Box_t src)
- int [ppl_Uint8_Box_add_recycled_constraints](#) (ppl_Uint8_Box_t ph, ppl_Constraint_System_t cs)
- int [ppl_Uint8_Box_add_recycled_congruences](#) (ppl_Uint8_Box_t ph, ppl_Congruence_System_t cs)
- int [ppl_termination_test_MS_Uint8_Box](#) (ppl_const_Uint8_Box_t pset)
- int [ppl_termination_test_PR_Uint8_Box](#) (ppl_const_Uint8_Box_t pset)
- int [ppl_one_affine_ranking_function_MS_Uint8_Box](#) (ppl_const_Uint8_Box_t pset, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_Uint8_Box](#) (ppl_const_Uint8_Box_t pset, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_Uint8_Box](#) (ppl_const_Uint8_Box_t pset, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_Uint8_Box](#) (ppl_const_Uint8_Box_t pset, ppl_Polyhedron_t ph)

- int [ppl_termination_test_MS_Uint8_Box_2](#) (ppl_const_Uint8_Box_t pset_before, ppl_const_Uint8_Box_t pset_after)
- int [ppl_termination_test_PR_Uint8_Box_2](#) (ppl_const_Uint8_Box_t pset_before, ppl_const_Uint8_Box_t pset_after)
- int [ppl_one_affine_ranking_function_MS_Uint8_Box_2](#) (ppl_const_Uint8_Box_t pset_before, ppl_const_Uint8_Box_t pset_after, ppl_Generator_t point)
- int [ppl_one_affine_ranking_function_PR_Uint8_Box_2](#) (ppl_const_Uint8_Box_t pset_before, ppl_const_Uint8_Box_t pset_after, ppl_Generator_t point)
- int [ppl_all_affine_ranking_functions_MS_Uint8_Box_2](#) (ppl_const_Uint8_Box_t pset_before, ppl_const_Uint8_Box_t pset_after, ppl_Polyhedron_t ph)
- int [ppl_all_affine_ranking_functions_PR_Uint8_Box_2](#) (ppl_const_Uint8_Box_t pset_before, ppl_const_Uint8_Box_t pset_after, ppl_Polyhedron_t ph)

10.161.1 Detailed Description

Types and functions for [ppl_Uint8_Box_tag](#).

10.161.2 Friends And Related Function Documentation

10.161.2.1 int [ppl_all_affine_ranking_functions_MS_Uint8_Box](#) (ppl_const_Uint8_Box_t *pset*, ppl_Polyhedron_t *ph*) [[related](#)]

10.161.2.2 int [ppl_all_affine_ranking_functions_MS_Uint8_Box_2](#) (ppl_const_Uint8_Box_t *pset_before*, ppl_const_Uint8_Box_t *pset_after*, ppl_Polyhedron_t *ph*) [[related](#)]

10.161.2.3 int [ppl_all_affine_ranking_functions_PR_Uint8_Box](#) (ppl_const_Uint8_Box_t *pset*, ppl_Polyhedron_t *ph*) [[related](#)]

10.161.2.4 int [ppl_all_affine_ranking_functions_PR_Uint8_Box_2](#) (ppl_const_Uint8_Box_t *pset_before*, ppl_const_Uint8_Box_t *pset_after*, ppl_Polyhedron_t *ph*) [[related](#)]

10.161.2.5 int [ppl_assign_Uint8_Box_from_Uint8_Box](#) (ppl_Uint8_Box_t *dst*, ppl_const_Uint8_Box_t *src*) [[related](#)]

10.161.2.6 int [ppl_delete_Uint8_Box](#) (ppl_const_Uint8_Box_t *ph*) [[related](#)]

- 10.161.2.7** `int ppl_new_Uint8_Box_from_BD_Shape_double (ppl_Uint8_Box_t * pph,
ppl_const_BD_Shape_double_t ph)` [**related**]
- 10.161.2.8** `int ppl_new_Uint8_Box_from_BD_Shape_double_with_complexity (ppl_Uint8_Box_t *
pph, ppl_const_BD_Shape_double_t ph, int complexity)` [**related**]
- 10.161.2.9** `int ppl_new_Uint8_Box_from_BD_Shape_float (ppl_Uint8_Box_t * pph,
ppl_const_BD_Shape_float_t ph)` [**related**]
- 10.161.2.10** `int ppl_new_Uint8_Box_from_BD_Shape_float_with_complexity (ppl_Uint8_Box_t *
pph, ppl_const_BD_Shape_float_t ph, int complexity)` [**related**]
- 10.161.2.11** `int ppl_new_Uint8_Box_from_BD_Shape_int16_t (ppl_Uint8_Box_t * pph,
ppl_const_BD_Shape_int16_t ph)` [**related**]
- 10.161.2.12** `int ppl_new_Uint8_Box_from_BD_Shape_int16_t_with_complexity (ppl_Uint8_Box_t
* pph, ppl_const_BD_Shape_int16_t ph, int complexity)` [**related**]
- 10.161.2.13** `int ppl_new_Uint8_Box_from_BD_Shape_int32_t (ppl_Uint8_Box_t * pph,
ppl_const_BD_Shape_int32_t ph)` [**related**]
- 10.161.2.14** `int ppl_new_Uint8_Box_from_BD_Shape_int32_t_with_complexity (ppl_Uint8_Box_t
* pph, ppl_const_BD_Shape_int32_t ph, int complexity)` [**related**]
- 10.161.2.15** `int ppl_new_Uint8_Box_from_BD_Shape_int64_t (ppl_Uint8_Box_t * pph,
ppl_const_BD_Shape_int64_t ph)` [**related**]

- 10.161.2.16** `int ppl_new_Uint8_Box_from_BD_Shape_int64_t_with_complexity (ppl_Uint8_Box_t * pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)` `[related]`
- 10.161.2.17** `int ppl_new_Uint8_Box_from_BD_Shape_int8_t (ppl_Uint8_Box_t * pph, ppl_const_BD_Shape_int8_t_t ph)` `[related]`
- 10.161.2.18** `int ppl_new_Uint8_Box_from_BD_Shape_int8_t_with_complexity (ppl_Uint8_Box_t * pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)` `[related]`
- 10.161.2.19** `int ppl_new_Uint8_Box_from_BD_Shape_long_double (ppl_Uint8_Box_t * pph, ppl_const_BD_Shape_long_double_t ph)` `[related]`
- 10.161.2.20** `int ppl_new_Uint8_Box_from_BD_Shape_long_double_with_complexity (ppl_Uint8_Box_t * pph, ppl_const_BD_Shape_long_double_t ph, int complexity)` `[related]`
- 10.161.2.21** `int ppl_new_Uint8_Box_from_BD_Shape_mpq_class (ppl_Uint8_Box_t * pph, ppl_const_BD_Shape_mpq_class_t ph)` `[related]`
- 10.161.2.22** `int ppl_new_Uint8_Box_from_BD_Shape_mpq_class_with_complexity (ppl_Uint8_Box_t * pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)` `[related]`
- 10.161.2.23** `int ppl_new_Uint8_Box_from_BD_Shape_mpz_class (ppl_Uint8_Box_t * pph, ppl_const_BD_Shape_mpz_class_t ph)` `[related]`
- 10.161.2.24** `int ppl_new_Uint8_Box_from_BD_Shape_mpz_class_with_complexity (ppl_Uint8_Box_t * pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)` `[related]`

- 10.161.2.25** `int ppl_new_Uint8_Box_from_C_Polyhedron (ppl_Uint8_Box_t * pph,
ppl_const_Polyhedron_t ph)` [**related**]
- 10.161.2.26** `int ppl_new_Uint8_Box_from_C_Polyhedron_with_complexity (ppl_Uint8_Box_t *
pph, ppl_const_Polyhedron_t ph, int complexity)` [**related**]
- 10.161.2.27** `int ppl_new_Uint8_Box_from_Congruence_System (ppl_Uint8_Box_t * pph,
ppl_const_Congruence_System_t cs)` [**related**]
- 10.161.2.28** `int ppl_new_Uint8_Box_from_Constraint_System (ppl_Uint8_Box_t * pph,
ppl_const_Constraint_System_t cs)` [**related**]
- 10.161.2.29** `int ppl_new_Uint8_Box_from_Double_Box (ppl_Uint8_Box_t * pph,
ppl_const_Double_Box_t ph)` [**related**]
- 10.161.2.30** `int ppl_new_Uint8_Box_from_Double_Box_with_complexity (ppl_Uint8_Box_t * pph,
ppl_const_Double_Box_t ph, int complexity)` [**related**]
- 10.161.2.31** `int ppl_new_Uint8_Box_from_Float_Box (ppl_Uint8_Box_t * pph,
ppl_const_Float_Box_t ph)` [**related**]
- 10.161.2.32** `int ppl_new_Uint8_Box_from_Float_Box_with_complexity (ppl_Uint8_Box_t * pph,
ppl_const_Float_Box_t ph, int complexity)` [**related**]
- 10.161.2.33** `int ppl_new_Uint8_Box_from_Generator_System (ppl_Uint8_Box_t * pph,
ppl_const_Generator_System_t cs)` [**related**]

- 10.161.2.34 `int ppl_new_Uint8_Box_from_Grid (ppl_Uint8_Box_t * pph, ppl_const_Grid_t ph)` `[related]`
- 10.161.2.35 `int ppl_new_Uint8_Box_from_Grid_with_complexity (ppl_Uint8_Box_t * pph, ppl_const_Grid_t ph, int complexity)` `[related]`
- 10.161.2.36 `int ppl_new_Uint8_Box_from_Int16_Box (ppl_Uint8_Box_t * pph, ppl_const_Int16_Box_t ph)` `[related]`
- 10.161.2.37 `int ppl_new_Uint8_Box_from_Int16_Box_with_complexity (ppl_Uint8_Box_t * pph, ppl_const_Int16_Box_t ph, int complexity)` `[related]`
- 10.161.2.38 `int ppl_new_Uint8_Box_from_Int32_Box (ppl_Uint8_Box_t * pph, ppl_const_Int32_Box_t ph)` `[related]`
- 10.161.2.39 `int ppl_new_Uint8_Box_from_Int32_Box_with_complexity (ppl_Uint8_Box_t * pph, ppl_const_Int32_Box_t ph, int complexity)` `[related]`
- 10.161.2.40 `int ppl_new_Uint8_Box_from_Int64_Box (ppl_Uint8_Box_t * pph, ppl_const_Int64_Box_t ph)` `[related]`
- 10.161.2.41 `int ppl_new_Uint8_Box_from_Int64_Box_with_complexity (ppl_Uint8_Box_t * pph, ppl_const_Int64_Box_t ph, int complexity)` `[related]`
- 10.161.2.42 `int ppl_new_Uint8_Box_from_Int8_Box (ppl_Uint8_Box_t * pph, ppl_const_Int8_Box_t ph)` `[related]`

- 10.161.2.43 `int ppl_new_Uint8_Box_from_Int8_Box_with_complexity (ppl_Uint8_Box_t * pph,
ppl_const_Int8_Box_t ph, int complexity)` [`related`]
- 10.161.2.44 `int ppl_new_Uint8_Box_from_Long_Double_Box (ppl_Uint8_Box_t * pph,
ppl_const_Long_Double_Box_t ph)` [`related`]
- 10.161.2.45 `int ppl_new_Uint8_Box_from_Long_Double_Box_with_complexity (ppl_Uint8_Box_t
* pph, ppl_const_Long_Double_Box_t ph, int complexity)` [`related`]
- 10.161.2.46 `int ppl_new_Uint8_Box_from_NNC_Polyhedron (ppl_Uint8_Box_t * pph,
ppl_const_Polyhedron_t ph)` [`related`]
- 10.161.2.47 `int ppl_new_Uint8_Box_from_NNC_Polyhedron_with_complexity (ppl_Uint8_Box_t
* pph, ppl_const_Polyhedron_t ph, int complexity)` [`related`]
- 10.161.2.48 `int ppl_new_Uint8_Box_from_Octagonal_Shape_double (ppl_Uint8_Box_t * pph,
ppl_const_Octagonal_Shape_double_t ph)` [`related`]
- 10.161.2.49 `int ppl_new_Uint8_Box_from_Octagonal_Shape_double_with_complexity
(ppl_Uint8_Box_t * pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)`
[`related`]
- 10.161.2.50 `int ppl_new_Uint8_Box_from_Octagonal_Shape_float (ppl_Uint8_Box_t * pph,
ppl_const_Octagonal_Shape_float_t ph)` [`related`]
- 10.161.2.51 `int ppl_new_Uint8_Box_from_Octagonal_Shape_float_with_complexity
(ppl_Uint8_Box_t * pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)`
[`related`]

- 10.161.2.52** `int ppl_new_Uint8_Box_from_Octagonal_Shape_int16_t (ppl_Uint8_Box_t * pph,
ppl_const_Octagonal_Shape_int16_t_t ph)` [**related**]
- 10.161.2.53** `int ppl_new_Uint8_Box_from_Octagonal_Shape_int16_t_with_complexity
(ppl_Uint8_Box_t * pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)`
[**related**]
- 10.161.2.54** `int ppl_new_Uint8_Box_from_Octagonal_Shape_int32_t (ppl_Uint8_Box_t * pph,
ppl_const_Octagonal_Shape_int32_t_t ph)` [**related**]
- 10.161.2.55** `int ppl_new_Uint8_Box_from_Octagonal_Shape_int32_t_with_complexity
(ppl_Uint8_Box_t * pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)`
[**related**]
- 10.161.2.56** `int ppl_new_Uint8_Box_from_Octagonal_Shape_int64_t (ppl_Uint8_Box_t * pph,
ppl_const_Octagonal_Shape_int64_t_t ph)` [**related**]
- 10.161.2.57** `int ppl_new_Uint8_Box_from_Octagonal_Shape_int64_t_with_complexity
(ppl_Uint8_Box_t * pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)`
[**related**]
- 10.161.2.58** `int ppl_new_Uint8_Box_from_Octagonal_Shape_int8_t (ppl_Uint8_Box_t * pph,
ppl_const_Octagonal_Shape_int8_t_t ph)` [**related**]
- 10.161.2.59** `int ppl_new_Uint8_Box_from_Octagonal_Shape_int8_t_with_complexity
(ppl_Uint8_Box_t * pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)`
[**related**]
- 10.161.2.60** `int ppl_new_Uint8_Box_from_Octagonal_Shape_long_double (ppl_Uint8_Box_t *
pph, ppl_const_Octagonal_Shape_long_double_t_t ph)` [**related**]

- 10.161.2.61 `int ppl_new_Uint8_Box_from_Octagonal_Shape_long_double_with_complexity`
(`ppl_Uint8_Box_t * pph`, `ppl_const_Octagonal_Shape_long_double_t ph`, `int complexity`) [`related`]

- 10.161.2.62 `int ppl_new_Uint8_Box_from_Octagonal_Shape_mpq_class` (`ppl_Uint8_Box_t * pph`,
`ppl_const_Octagonal_Shape_mpq_class_t ph`) [`related`]

- 10.161.2.63 `int ppl_new_Uint8_Box_from_Octagonal_Shape_mpq_class_with_complexity`
(`ppl_Uint8_Box_t * pph`, `ppl_const_Octagonal_Shape_mpq_class_t ph`, `int complexity`) [`related`]

- 10.161.2.64 `int ppl_new_Uint8_Box_from_Octagonal_Shape_mpz_class` (`ppl_Uint8_Box_t * pph`,
`ppl_const_Octagonal_Shape_mpz_class_t ph`) [`related`]

- 10.161.2.65 `int ppl_new_Uint8_Box_from_Octagonal_Shape_mpz_class_with_complexity`
(`ppl_Uint8_Box_t * pph`, `ppl_const_Octagonal_Shape_mpz_class_t ph`, `int complexity`) [`related`]

- 10.161.2.66 `int ppl_new_Uint8_Box_from_Rational_Box` (`ppl_Uint8_Box_t * pph`,
`ppl_const_Rational_Box_t ph`) [`related`]

- 10.161.2.67 `int ppl_new_Uint8_Box_from_Rational_Box_with_complexity` (`ppl_Uint8_Box_t *`
`pph`, `ppl_const_Rational_Box_t ph`, `int complexity`) [`related`]

- 10.161.2.68 `int ppl_new_Uint8_Box_from_space_dimension` (`ppl_Uint8_Box_t * pph`,
`ppl_dimension_type d`, `int empty`) [`related`]

- 10.161.2.69 `int ppl_new_Uint8_Box_from_Uint16_Box` (`ppl_Uint8_Box_t * pph`,
`ppl_const_Uint16_Box_t ph`) [`related`]

- 10.161.2.70** `int ppl_new_Uint8_Box_from_Uint16_Box_with_complexity (ppl_Uint8_Box_t * pph,
ppl_const_Uint16_Box_t ph, int complexity)` [**related**]
- 10.161.2.71** `int ppl_new_Uint8_Box_from_Uint32_Box (ppl_Uint8_Box_t * pph,
ppl_const_Uint32_Box_t ph)` [**related**]
- 10.161.2.72** `int ppl_new_Uint8_Box_from_Uint32_Box_with_complexity (ppl_Uint8_Box_t * pph,
ppl_const_Uint32_Box_t ph, int complexity)` [**related**]
- 10.161.2.73** `int ppl_new_Uint8_Box_from_Uint64_Box (ppl_Uint8_Box_t * pph,
ppl_const_Uint64_Box_t ph)` [**related**]
- 10.161.2.74** `int ppl_new_Uint8_Box_from_Uint64_Box_with_complexity (ppl_Uint8_Box_t * pph,
ppl_const_Uint64_Box_t ph, int complexity)` [**related**]
- 10.161.2.75** `int ppl_new_Uint8_Box_from_Uint8_Box (ppl_Uint8_Box_t * pph,
ppl_const_Uint8_Box_t ph)` [**related**]
- 10.161.2.76** `int ppl_new_Uint8_Box_from_Uint8_Box_with_complexity (ppl_Uint8_Box_t * pph,
ppl_const_Uint8_Box_t ph, int complexity)` [**related**]
- 10.161.2.77** `int ppl_new_Uint8_Box_from_Z_Box (ppl_Uint8_Box_t * pph, ppl_const_Z_Box_t
ph)` [**related**]
- 10.161.2.78** `int ppl_new_Uint8_Box_from_Z_Box_with_complexity (ppl_Uint8_Box_t * pph,
ppl_const_Z_Box_t ph, int complexity)` [**related**]

- 10.161.2.79** `int ppl_new_Uint8_Box_recycle_Congruence_System (ppl_Uint8_Box_t * pph,
ppl_Congruence_System_t cs)` [**related**]
- 10.161.2.80** `int ppl_new_Uint8_Box_recycle_Constraint_System (ppl_Uint8_Box_t * pph,
ppl_Constraint_System_t cs)` [**related**]
- 10.161.2.81** `int ppl_new_Uint8_Box_recycle_Generator_System (ppl_Uint8_Box_t * pph,
ppl_Generator_System_t cs)` [**related**]
- 10.161.2.82** `int ppl_one_affine_ranking_function_MS_Uint8_Box (ppl_const_Uint8_Box_t pset,
ppl_Generator_t point)` [**related**]
- 10.161.2.83** `int ppl_one_affine_ranking_function_MS_Uint8_Box_2 (ppl_const_Uint8_Box_t
pset_before, ppl_const_Uint8_Box_t pset_after, ppl_Generator_t point)` [**related**]
- 10.161.2.84** `int ppl_one_affine_ranking_function_PR_Uint8_Box (ppl_const_Uint8_Box_t pset,
ppl_Generator_t point)` [**related**]
- 10.161.2.85** `int ppl_one_affine_ranking_function_PR_Uint8_Box_2 (ppl_const_Uint8_Box_t
pset_before, ppl_const_Uint8_Box_t pset_after, ppl_Generator_t point)` [**related**]
- 10.161.2.86** `int ppl_termination_test_MS_Uint8_Box (ppl_const_Uint8_Box_t pset)` [**related**]
- 10.161.2.87** `int ppl_termination_test_MS_Uint8_Box_2 (ppl_const_Uint8_Box_t pset_before,
ppl_const_Uint8_Box_t pset_after)` [**related**]
- 10.161.2.88** `int ppl_termination_test_PR_Uint8_Box (ppl_const_Uint8_Box_t pset)` [**related**]

- 10.161.2.89** `int ppl_termination_test_PR_Uint8_Box_2 (ppl_const_Uint8_Box_t pset_before,
ppl_const_Uint8_Box_t pset_after)` [**related**]
- 10.161.2.90** `int ppl_Uint8_Box_add_congruence (ppl_Uint8_Box_t ph, ppl_const_Congruence_t
c)` [**related**]
- 10.161.2.91** `int ppl_Uint8_Box_add_congruences (ppl_Uint8_Box_t ph,
ppl_const_Congruence_System_t cs)` [**related**]
- 10.161.2.92** `int ppl_Uint8_Box_add_constraint (ppl_Uint8_Box_t ph, ppl_const_Constraint_t c)`
[**related**]
- 10.161.2.93** `int ppl_Uint8_Box_add_constraints (ppl_Uint8_Box_t ph,
ppl_const_Constraint_System_t cs)` [**related**]
- 10.161.2.94** `int ppl_Uint8_Box_add_recycled_congruences (ppl_Uint8_Box_t ph,
ppl_Congruence_System_t cs)` [**related**]
- 10.161.2.95** `int ppl_Uint8_Box_add_recycled_constraints (ppl_Uint8_Box_t ph,
ppl_Constraint_System_t cs)` [**related**]
- 10.161.2.96** `int ppl_Uint8_Box_add_space_dimensions_and_embed (ppl_Uint8_Box_t ph,
ppl_dimension_type d)` [**related**]
- 10.161.2.97** `int ppl_Uint8_Box_add_space_dimensions_and_project (ppl_Uint8_Box_t ph,
ppl_dimension_type d)` [**related**]

- 10.161.2.98 `int ppl_Uint8_Box_affine_dimension (ppl_const_Uint8_Box_t ph,
ppl_dimension_type * m)` [`related`]
- 10.161.2.99 `int ppl_Uint8_Box_affine_image (ppl_Uint8_Box_t ph, ppl_dimension_type var,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.161.2.100 `int ppl_Uint8_Box_affine_preimage (ppl_Uint8_Box_t ph, ppl_dimension_type var,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.161.2.101 `int ppl_Uint8_Box_bounded_affine_image (ppl_Uint8_Box_t ph, ppl_dimension_
type var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub,
ppl_const_Coefficient_t d)` [`related`]
- 10.161.2.102 `int ppl_Uint8_Box_bounded_affine_preimage (ppl_Uint8_Box_t
ph, ppl_dimension_type var, ppl_const_Linear_Expression_t lb,
ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)` [`related`]
- 10.161.2.103 `int ppl_Uint8_Box_bounds_from_above (ppl_const_Uint8_Box_t ph,
ppl_const_Linear_Expression_t le)` [`related`]
- 10.161.2.104 `int ppl_Uint8_Box_bounds_from_below (ppl_const_Uint8_Box_t ph,
ppl_const_Linear_Expression_t le)` [`related`]
- 10.161.2.105 `int ppl_Uint8_Box_CC76_widening_assign (ppl_Uint8_Box_t x,
ppl_const_Uint8_Box_t y)` [`related`]
- 10.161.2.106 `int ppl_Uint8_Box_CC76_widening_assign_with_tokens (ppl_Uint8_Box_t x,
ppl_const_Uint8_Box_t y, unsigned * tp)` [`related`]

- 10.161.2.107 `int ppl_Uint8_Box_concatenate_assign (ppl_Uint8_Box_t x, ppl_const_Uint8_Box_t y)` [**related**]
- 10.161.2.108 `int ppl_Uint8_Box_constrains (ppl_Uint8_Box_t ph, ppl_dimension_type var)` [**related**]
- 10.161.2.109 `int ppl_Uint8_Box_contains_integer_point (ppl_const_Uint8_Box_t ph)` [**related**]
- 10.161.2.110 `int ppl_Uint8_Box_contains_Uint8_Box (ppl_const_Uint8_Box_t x, ppl_const_Uint8_Box_t y)` [**related**]
- 10.161.2.111 `int ppl_Uint8_Box_difference_assign (ppl_Uint8_Box_t x, ppl_const_Uint8_Box_t y)` [**related**]
- 10.161.2.112 `int ppl_Uint8_Box_drop_some_non_integer_points (ppl_Uint8_Box_t ph, int complexity)` [**related**]
- 10.161.2.113 `int ppl_Uint8_Box_drop_some_non_integer_points_2 (ppl_Uint8_Box_t ph, ppl_dimension_type ds[], size_t n, int complexity)` [**related**]
- 10.161.2.114 `int ppl_Uint8_Box_equals_Uint8_Box (ppl_const_Uint8_Box_t x, ppl_const_Uint8_Box_t y)` [**related**]
- 10.161.2.115 `int ppl_Uint8_Box_expand_space_dimension (ppl_Uint8_Box_t ph, ppl_dimension_type d, ppl_dimension_type m)` [**related**]

- 10.161.2.116 `int ppl_Uint8_Box_external_memory_in_bytes (ppl_const_Uint8_Box_t ps, size_t * sz)` [**related**]
- 10.161.2.117 `int ppl_Uint8_Box_fold_space_dimensions (ppl_Uint8_Box_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` [**related**]
- 10.161.2.118 `int ppl_Uint8_Box_frequency (ppl_const_Uint8_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)` [**related**]
- 10.161.2.119 `int ppl_Uint8_Box_generalized_affine_image (ppl_Uint8_Box_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.161.2.120 `int ppl_Uint8_Box_generalized_affine_image_lhs_rhs (ppl_Uint8_Box_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` [**related**]
- 10.161.2.121 `int ppl_Uint8_Box_generalized_affine_preimage (ppl_Uint8_Box_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [**related**]
- 10.161.2.122 `int ppl_Uint8_Box_generalized_affine_preimage_lhs_rhs (ppl_Uint8_Box_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relsym, ppl_const_Linear_Expression_t rhs)` [**related**]
- 10.161.2.123 `int ppl_Uint8_Box_get_congruences (ppl_const_Uint8_Box_t ph, ppl_const_Congruence_System_t * pcs)` [**related**]

- 10.161.2.124 `int ppl_Uint8_Box_get_constraints (ppl_const_Uint8_Box_t ph,
ppl_const_Constraint_System_t * pcs)` [`related`]
- 10.161.2.125 `int ppl_Uint8_Box_get_minimized_congruences (ppl_const_Uint8_Box_t ph,
ppl_const_Congruence_System_t * pcs)` [`related`]
- 10.161.2.126 `int ppl_Uint8_Box_get_minimized_constraints (ppl_const_Uint8_Box_t ph,
ppl_const_Constraint_System_t * pcs)` [`related`]
- 10.161.2.127 `int ppl_Uint8_Box_intersection_assign (ppl_Uint8_Box_t x, ppl_const_Uint8_Box_t
y)` [`related`]
- 10.161.2.128 `int ppl_Uint8_Box_is_bounded (ppl_const_Uint8_Box_t ph)` [`related`]
- 10.161.2.129 `int ppl_Uint8_Box_is_discrete (ppl_const_Uint8_Box_t ph)` [`related`]
- 10.161.2.130 `int ppl_Uint8_Box_is_disjoint_from_Uint8_Box (ppl_const_Uint8_Box_t x,
ppl_const_Uint8_Box_t y)` [`related`]
- 10.161.2.131 `int ppl_Uint8_Box_is_empty (ppl_const_Uint8_Box_t ph)` [`related`]
- 10.161.2.132 `int ppl_Uint8_Box_is_topologically_closed (ppl_const_Uint8_Box_t ph)`
[`related`]
- 10.161.2.133 `int ppl_Uint8_Box_is_universe (ppl_const_Uint8_Box_t ph)` [`related`]

- 10.161.2.134 `int ppl_Uint8_Box_limited_CC76_extrapolation_assign (ppl_Uint8_Box_t x, ppl_const_Uint8_Box_t y, ppl_const_Constraint_System_t cs)` [related]
- 10.161.2.135 `int ppl_Uint8_Box_limited_CC76_extrapolation_assign_with_tokens (ppl_Uint8_Box_t x, ppl_const_Uint8_Box_t y, ppl_const_Constraint_System_t cs, unsigned * tp)` [related]
- 10.161.2.136 `int ppl_Uint8_Box_linear_partition (ppl_const_Uint8_Box_t x, ppl_const_Uint8_Box_t y, ppl_Uint8_Box_t * p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t * p_rest)` [related]
- 10.161.2.137 `int ppl_Uint8_Box_map_space_dimensions (ppl_Uint8_Box_t ph, ppl_dimension_type maps[], size_t n)` [related]
- 10.161.2.138 `int ppl_Uint8_Box_maximize (ppl_const_Uint8_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * optimum)` [related]
- 10.161.2.139 `int ppl_Uint8_Box_maximize_with_point (ppl_const_Uint8_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * optimum, ppl_Generator_t point)` [related]
- 10.161.2.140 `int ppl_Uint8_Box_minimize (ppl_const_Uint8_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * optimum)` [related]
- 10.161.2.141 `int ppl_Uint8_Box_minimize_with_point (ppl_const_Uint8_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * optimum, ppl_Generator_t point)` [related]

- 10.161.2.142 `int ppl_Uint8_Box_OK (ppl_const_Uint8_Box_t ph)` [**related**]
- 10.161.2.143 `int ppl_Uint8_Box_refine_with_congruence (ppl_Uint8_Box_t ph,
ppl_const_Congruence_t c)` [**related**]
- 10.161.2.144 `int ppl_Uint8_Box_refine_with_congruences (ppl_Uint8_Box_t ph,
ppl_const_Congruence_System_t cs)` [**related**]
- 10.161.2.145 `int ppl_Uint8_Box_refine_with_constraint (ppl_Uint8_Box_t ph,
ppl_const_Constraint_t c)` [**related**]
- 10.161.2.146 `int ppl_Uint8_Box_refine_with_constraints (ppl_Uint8_Box_t ph,
ppl_const_Constraint_System_t cs)` [**related**]
- 10.161.2.147 `int ppl_Uint8_Box_relation_with_Congruence (ppl_const_Uint8_Box_t ph,
ppl_const_Congruence_t c)` [**related**]
- 10.161.2.148 `int ppl_Uint8_Box_relation_with_Constraint (ppl_const_Uint8_Box_t ph,
ppl_const_Constraint_t c)` [**related**]
- 10.161.2.149 `int ppl_Uint8_Box_relation_with_Generator (ppl_const_Uint8_Box_t ph,
ppl_const_Generator_t c)` [**related**]
- 10.161.2.150 `int ppl_Uint8_Box_remove_higher_space_dimensions (ppl_Uint8_Box_t ph,
ppl_dimension_type d)` [**related**]
- 10.161.2.151 `int ppl_Uint8_Box_remove_space_dimensions (ppl_Uint8_Box_t ph,
ppl_dimension_type ds[], size_t n)` [**related**]

- 10.161.2.152 `int ppl_Uint8_Box_simplify_using_context_assign (ppl_Uint8_Box_t x, ppl_const_Uint8_Box_t y) [related]`
- 10.161.2.153 `int ppl_Uint8_Box_space_dimension (ppl_const_Uint8_Box_t ph, ppl_dimension_type * m) [related]`
- 10.161.2.154 `int ppl_Uint8_Box_strictly_contains_Uint8_Box (ppl_const_Uint8_Box_t x, ppl_const_Uint8_Box_t y) [related]`
- 10.161.2.155 `int ppl_Uint8_Box_time_elapse_assign (ppl_Uint8_Box_t x, ppl_const_Uint8_Box_t y) [related]`
- 10.161.2.156 `int ppl_Uint8_Box_topological_closure_assign (ppl_Uint8_Box_t ph) [related]`
- 10.161.2.157 `int ppl_Uint8_Box_total_memory_in_bytes (ppl_const_Uint8_Box_t ps, size_t * sz) [related]`
- 10.161.2.158 `int ppl_Uint8_Box_unconstrain_space_dimension (ppl_Uint8_Box_t ph, ppl_dimension_type var) [related]`
- 10.161.2.159 `int ppl_Uint8_Box_unconstrain_space_dimensions (ppl_Uint8_Box_t ph, ppl_dimension_type ds[], size_t n) [related]`
- 10.161.2.160 `int ppl_Uint8_Box_upper_bound_assign (ppl_Uint8_Box_t x, ppl_const_Uint8_Box_t y) [related]`
- 10.161.2.161 `int ppl_Uint8_Box_upper_bound_assign_if_exact (ppl_Uint8_Box_t x, ppl_const_Uint8_Box_t y) [related]`

10.161.2.162 `int ppl_Uint8_Box_widening_assign (ppl_Uint8_Box_t x, ppl_const_Uint8_Box_t y)` **[related]**

10.161.2.163 `int ppl_Uint8_Box_widening_assign_with_tokens (ppl_Uint8_Box_t x, ppl_const_Uint8_Box_t y, unsigned *tp)` **[related]**

10.161.2.164 `int ppl_Uint8_Box_wrap_assign (ppl_Uint8_Box_t ph, ppl_dimension_type ds[], size_t n, enum ppl_enum_Bounded_Integer_Type_Width w, enum ppl_enum_Bounded_Integer_Type_Representation r, enum ppl_enum_Bounded_Integer_Type_Overflow o, const ppl_const_Constraint_System_t *pcs, unsigned complexity_threshold, int wrap_individually)` **[related]**

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.162 ppl_Z_Box_tag Interface Reference

Types and functions for [ppl_Z_Box_tag](#).

```
#include <ppl_c.h>
```

Related Functions

(Note that these are not member functions.)

- `int ppl_delete_Z_Box (ppl_const_Z_Box_t ph)`
- `int ppl_new_Z_Box_from_space_dimension (ppl_Z_Box_t *pph, ppl_dimension_type d, int empty)`
- `int ppl_new_Z_Box_from_Int8_Box (ppl_Z_Box_t *pph, ppl_const_Int8_Box_t ph)`
- `int ppl_new_Z_Box_from_Int16_Box (ppl_Z_Box_t *pph, ppl_const_Int16_Box_t ph)`
- `int ppl_new_Z_Box_from_Int32_Box (ppl_Z_Box_t *pph, ppl_const_Int32_Box_t ph)`
- `int ppl_new_Z_Box_from_Int64_Box (ppl_Z_Box_t *pph, ppl_const_Int64_Box_t ph)`
- `int ppl_new_Z_Box_from_Uint8_Box (ppl_Z_Box_t *pph, ppl_const_Uint8_Box_t ph)`
- `int ppl_new_Z_Box_from_Uint16_Box (ppl_Z_Box_t *pph, ppl_const_Uint16_Box_t ph)`
- `int ppl_new_Z_Box_from_Uint32_Box (ppl_Z_Box_t *pph, ppl_const_Uint32_Box_t ph)`
- `int ppl_new_Z_Box_from_Uint64_Box (ppl_Z_Box_t *pph, ppl_const_Uint64_Box_t ph)`
- `int ppl_new_Z_Box_from_Z_Box (ppl_Z_Box_t *pph, ppl_const_Z_Box_t ph)`
- `int ppl_new_Z_Box_from_Rational_Box (ppl_Z_Box_t *pph, ppl_const_Rational_Box_t ph)`
- `int ppl_new_Z_Box_from_BD_Shape_int8_t (ppl_Z_Box_t *pph, ppl_const_BD_Shape_int8_t_t ph)`
- `int ppl_new_Z_Box_from_BD_Shape_int16_t (ppl_Z_Box_t *pph, ppl_const_BD_Shape_int16_t_t ph)`
- `int ppl_new_Z_Box_from_BD_Shape_int32_t (ppl_Z_Box_t *pph, ppl_const_BD_Shape_int32_t_t ph)`

- `int ppl_new_Z_Box_from_BD_Shape_int64_t` (`ppl_Z_Box_t *pph`, `ppl_const_BD_Shape_int64_t_t ph`)
- `int ppl_new_Z_Box_from_BD_Shape_mpz_class` (`ppl_Z_Box_t *pph`, `ppl_const_BD_Shape_mpz_class_t ph`)
- `int ppl_new_Z_Box_from_BD_Shape_mpq_class` (`ppl_Z_Box_t *pph`, `ppl_const_BD_Shape_mpq_class_t ph`)
- `int ppl_new_Z_Box_from_Octagonal_Shape_int8_t` (`ppl_Z_Box_t *pph`, `ppl_const_Octagonal_Shape_int8_t_t ph`)
- `int ppl_new_Z_Box_from_Octagonal_Shape_int16_t` (`ppl_Z_Box_t *pph`, `ppl_const_Octagonal_Shape_int16_t_t ph`)
- `int ppl_new_Z_Box_from_Octagonal_Shape_int32_t` (`ppl_Z_Box_t *pph`, `ppl_const_Octagonal_Shape_int32_t_t ph`)
- `int ppl_new_Z_Box_from_Octagonal_Shape_int64_t` (`ppl_Z_Box_t *pph`, `ppl_const_Octagonal_Shape_int64_t_t ph`)
- `int ppl_new_Z_Box_from_Octagonal_Shape_mpz_class` (`ppl_Z_Box_t *pph`, `ppl_const_Octagonal_Shape_mpz_class_t ph`)
- `int ppl_new_Z_Box_from_Octagonal_Shape_mpq_class` (`ppl_Z_Box_t *pph`, `ppl_const_Octagonal_Shape_mpq_class_t ph`)
- `int ppl_new_Z_Box_from_C_Polyhedron` (`ppl_Z_Box_t *pph`, `ppl_const_Polyhedron_t ph`)
- `int ppl_new_Z_Box_from_NNC_Polyhedron` (`ppl_Z_Box_t *pph`, `ppl_const_Polyhedron_t ph`)
- `int ppl_new_Z_Box_from_Grid` (`ppl_Z_Box_t *pph`, `ppl_const_Grid_t ph`)
- `int ppl_new_Z_Box_from_Float_Box` (`ppl_Z_Box_t *pph`, `ppl_const_Float_Box_t ph`)
- `int ppl_new_Z_Box_from_BD_Shape_float` (`ppl_Z_Box_t *pph`, `ppl_const_BD_Shape_float_t ph`)
- `int ppl_new_Z_Box_from_Octagonal_Shape_float` (`ppl_Z_Box_t *pph`, `ppl_const_Octagonal_Shape_float_t ph`)
- `int ppl_new_Z_Box_from_Double_Box` (`ppl_Z_Box_t *pph`, `ppl_const_Double_Box_t ph`)
- `int ppl_new_Z_Box_from_BD_Shape_double` (`ppl_Z_Box_t *pph`, `ppl_const_BD_Shape_double_t ph`)
- `int ppl_new_Z_Box_from_Octagonal_Shape_double` (`ppl_Z_Box_t *pph`, `ppl_const_Octagonal_Shape_double_t ph`)
- `int ppl_new_Z_Box_from_Long_Double_Box` (`ppl_Z_Box_t *pph`, `ppl_const_Long_Double_Box_t ph`)
- `int ppl_new_Z_Box_from_BD_Shape_long_double` (`ppl_Z_Box_t *pph`, `ppl_const_BD_Shape_long_double_t ph`)
- `int ppl_new_Z_Box_from_Octagonal_Shape_long_double` (`ppl_Z_Box_t *pph`, `ppl_const_Octagonal_Shape_long_double_t ph`)
- `int ppl_new_Z_Box_from_Int8_Box_with_complexity` (`ppl_Z_Box_t *pph`, `ppl_const_Int8_Box_t ph`, `int complexity`)
- `int ppl_new_Z_Box_from_Int16_Box_with_complexity` (`ppl_Z_Box_t *pph`, `ppl_const_Int16_Box_t ph`, `int complexity`)
- `int ppl_new_Z_Box_from_Int32_Box_with_complexity` (`ppl_Z_Box_t *pph`, `ppl_const_Int32_Box_t ph`, `int complexity`)
- `int ppl_new_Z_Box_from_Int64_Box_with_complexity` (`ppl_Z_Box_t *pph`, `ppl_const_Int64_Box_t ph`, `int complexity`)
- `int ppl_new_Z_Box_from_Uint8_Box_with_complexity` (`ppl_Z_Box_t *pph`, `ppl_const_Uint8_Box_t ph`, `int complexity`)
- `int ppl_new_Z_Box_from_Uint16_Box_with_complexity` (`ppl_Z_Box_t *pph`, `ppl_const_Uint16_Box_t ph`, `int complexity`)
- `int ppl_new_Z_Box_from_Uint32_Box_with_complexity` (`ppl_Z_Box_t *pph`, `ppl_const_Uint32_Box_t ph`, `int complexity`)
- `int ppl_new_Z_Box_from_Uint64_Box_with_complexity` (`ppl_Z_Box_t *pph`, `ppl_const_Uint64_Box_t ph`, `int complexity`)

- int [ppl_new_Z_Box_from_Z_Box_with_complexity](#) (ppl_Z_Box_t *pph, ppl_const_Z_Box_t ph, int complexity)
- int [ppl_new_Z_Box_from_Rational_Box_with_complexity](#) (ppl_Z_Box_t *pph, ppl_const_Rational_Box_t ph, int complexity)
- int [ppl_new_Z_Box_from_BD_Shape_int8_t_with_complexity](#) (ppl_Z_Box_t *pph, ppl_const_BD_Shape_int8_t_t ph, int complexity)
- int [ppl_new_Z_Box_from_BD_Shape_int16_t_with_complexity](#) (ppl_Z_Box_t *pph, ppl_const_BD_Shape_int16_t_t ph, int complexity)
- int [ppl_new_Z_Box_from_BD_Shape_int32_t_with_complexity](#) (ppl_Z_Box_t *pph, ppl_const_BD_Shape_int32_t_t ph, int complexity)
- int [ppl_new_Z_Box_from_BD_Shape_int64_t_with_complexity](#) (ppl_Z_Box_t *pph, ppl_const_BD_Shape_int64_t_t ph, int complexity)
- int [ppl_new_Z_Box_from_BD_Shape_mpz_class_with_complexity](#) (ppl_Z_Box_t *pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_Z_Box_from_BD_Shape_mpq_class_with_complexity](#) (ppl_Z_Box_t *pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_Z_Box_from_Octagonal_Shape_int8_t_with_complexity](#) (ppl_Z_Box_t *pph, ppl_const_Octagonal_Shape_int8_t_t ph, int complexity)
- int [ppl_new_Z_Box_from_Octagonal_Shape_int16_t_with_complexity](#) (ppl_Z_Box_t *pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)
- int [ppl_new_Z_Box_from_Octagonal_Shape_int32_t_with_complexity](#) (ppl_Z_Box_t *pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)
- int [ppl_new_Z_Box_from_Octagonal_Shape_int64_t_with_complexity](#) (ppl_Z_Box_t *pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)
- int [ppl_new_Z_Box_from_Octagonal_Shape_mpz_class_with_complexity](#) (ppl_Z_Box_t *pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)
- int [ppl_new_Z_Box_from_Octagonal_Shape_mpq_class_with_complexity](#) (ppl_Z_Box_t *pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)
- int [ppl_new_Z_Box_from_C_Polyhedron_with_complexity](#) (ppl_Z_Box_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_Z_Box_from_NNC_Polyhedron_with_complexity](#) (ppl_Z_Box_t *pph, ppl_const_Polyhedron_t ph, int complexity)
- int [ppl_new_Z_Box_from_Grid_with_complexity](#) (ppl_Z_Box_t *pph, ppl_const_Grid_t ph, int complexity)
- int [ppl_new_Z_Box_from_Float_Box_with_complexity](#) (ppl_Z_Box_t *pph, ppl_const_Float_Box_t ph, int complexity)
- int [ppl_new_Z_Box_from_BD_Shape_float_with_complexity](#) (ppl_Z_Box_t *pph, ppl_const_BD_Shape_float_t ph, int complexity)
- int [ppl_new_Z_Box_from_Octagonal_Shape_float_with_complexity](#) (ppl_Z_Box_t *pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)
- int [ppl_new_Z_Box_from_Double_Box_with_complexity](#) (ppl_Z_Box_t *pph, ppl_const_Double_Box_t ph, int complexity)
- int [ppl_new_Z_Box_from_BD_Shape_double_with_complexity](#) (ppl_Z_Box_t *pph, ppl_const_BD_Shape_double_t ph, int complexity)
- int [ppl_new_Z_Box_from_Octagonal_Shape_double_with_complexity](#) (ppl_Z_Box_t *pph, ppl_const_Octagonal_Shape_double_t ph, int complexity)
- int [ppl_new_Z_Box_from_Long_Double_Box_with_complexity](#) (ppl_Z_Box_t *pph, ppl_const_Long_Double_Box_t ph, int complexity)
- int [ppl_new_Z_Box_from_BD_Shape_long_double_with_complexity](#) (ppl_Z_Box_t *pph, ppl_const_BD_Shape_long_double_t ph, int complexity)
- int [ppl_new_Z_Box_from_Octagonal_Shape_long_double_with_complexity](#) (ppl_Z_Box_t *pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)

- int [ppl_new_Z_Box_from_Constraint_System](#) (ppl_Z_Box_t *pph, ppl_const_Constraint_System_t cs)
- int [ppl_new_Z_Box_from_Congruence_System](#) (ppl_Z_Box_t *pph, ppl_const_Congruence_System_t cs)
- int [ppl_new_Z_Box_from_Generator_System](#) (ppl_Z_Box_t *pph, ppl_const_Generator_System_t cs)
- int [ppl_Z_Box_space_dimension](#) (ppl_const_Z_Box_t ph, [ppl_dimension_type](#) *m)
- int [ppl_Z_Box_affine_dimension](#) (ppl_const_Z_Box_t ph, [ppl_dimension_type](#) *m)
- int [ppl_Z_Box_relation_with_Constraint](#) (ppl_const_Z_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Z_Box_relation_with_Generator](#) (ppl_const_Z_Box_t ph, ppl_const_Generator_t c)
- int [ppl_Z_Box_relation_with_Congruence](#) (ppl_const_Z_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Z_Box_get_constraints](#) (ppl_const_Z_Box_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_Z_Box_get_congruences](#) (ppl_const_Z_Box_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_Z_Box_get_minimized_constraints](#) (ppl_const_Z_Box_t ph, ppl_const_Constraint_System_t *pcs)
- int [ppl_Z_Box_get_minimized_congruences](#) (ppl_const_Z_Box_t ph, ppl_const_Congruence_System_t *pcs)
- int [ppl_Z_Box_is_empty](#) (ppl_const_Z_Box_t ph)
- int [ppl_Z_Box_is_universe](#) (ppl_const_Z_Box_t ph)
- int [ppl_Z_Box_is_bounded](#) (ppl_const_Z_Box_t ph)
- int [ppl_Z_Box_contains_integer_point](#) (ppl_const_Z_Box_t ph)
- int [ppl_Z_Box_is_topologically_closed](#) (ppl_const_Z_Box_t ph)
- int [ppl_Z_Box_is_discrete](#) (ppl_const_Z_Box_t ph)
- int [ppl_Z_Box_topological_closure_assign](#) (ppl_Z_Box_t ph)
- int [ppl_Z_Box_bounds_from_above](#) (ppl_const_Z_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Z_Box_bounds_from_below](#) (ppl_const_Z_Box_t ph, ppl_const_Linear_Expression_t le)
- int [ppl_Z_Box_maximize](#) (ppl_const_Z_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Z_Box_minimize](#) (ppl_const_Z_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum)
- int [ppl_Z_Box_maximize_with_point](#) (ppl_const_Z_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Z_Box_minimize_with_point](#) (ppl_const_Z_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int *poptimum, ppl_Generator_t point)
- int [ppl_Z_Box_frequency](#) (ppl_const_Z_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)
- int [ppl_Z_Box_contains_Z_Box](#) (ppl_const_Z_Box_t x, ppl_const_Z_Box_t y)
- int [ppl_Z_Box_strictly_contains_Z_Box](#) (ppl_const_Z_Box_t x, ppl_const_Z_Box_t y)
- int [ppl_Z_Box_is_disjoint_from_Z_Box](#) (ppl_const_Z_Box_t x, ppl_const_Z_Box_t y)
- int [ppl_Z_Box_equals_Z_Box](#) (ppl_const_Z_Box_t x, ppl_const_Z_Box_t y)
- int [ppl_Z_Box_OK](#) (ppl_const_Z_Box_t ph)
- int [ppl_Z_Box_add_constraint](#) (ppl_Z_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Z_Box_add_congruence](#) (ppl_Z_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Z_Box_add_constraints](#) (ppl_Z_Box_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Z_Box_add_congruences](#) (ppl_Z_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Z_Box_refine_with_constraint](#) (ppl_Z_Box_t ph, ppl_const_Constraint_t c)
- int [ppl_Z_Box_refine_with_congruence](#) (ppl_Z_Box_t ph, ppl_const_Congruence_t c)
- int [ppl_Z_Box_refine_with_constraints](#) (ppl_Z_Box_t ph, ppl_const_Constraint_System_t cs)
- int [ppl_Z_Box_refine_with_congruences](#) (ppl_Z_Box_t ph, ppl_const_Congruence_System_t cs)
- int [ppl_Z_Box_intersection_assign](#) (ppl_Z_Box_t x, ppl_const_Z_Box_t y)
- int [ppl_Z_Box_upper_bound_assign](#) (ppl_Z_Box_t x, ppl_const_Z_Box_t y)

- int [ppl_Z_Box_difference_assign](#) (ppl_Z_Box_t x, ppl_const_Z_Box_t y)
- int [ppl_Z_Box_concatenate_assign](#) (ppl_Z_Box_t x, ppl_const_Z_Box_t y)
- int [ppl_Z_Box_time_elapse_assign](#) (ppl_Z_Box_t x, ppl_const_Z_Box_t y)
- int [ppl_Z_Box_upper_bound_assign_if_exact](#) (ppl_Z_Box_t x, ppl_const_Z_Box_t y)
- int [ppl_Z_Box_simplify_using_context_assign](#) (ppl_Z_Box_t x, ppl_const_Z_Box_t y)
- int [ppl_Z_Box_constrains](#) (ppl_Z_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Z_Box_unconstrain_space_dimension](#) (ppl_Z_Box_t ph, [ppl_dimension_type](#) var)
- int [ppl_Z_Box_unconstrain_space_dimensions](#) (ppl_Z_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Z_Box_affine_image](#) (ppl_Z_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Z_Box_affine_preimage](#) (ppl_Z_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Z_Box_bounded_affine_image](#) (ppl_Z_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Z_Box_bounded_affine_preimage](#) (ppl_Z_Box_t ph, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub, ppl_const_Coefficient_t d)
- int [ppl_Z_Box_generalized_affine_image](#) (ppl_Z_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Z_Box_generalized_affine_preimage](#) (ppl_Z_Box_t ph, [ppl_dimension_type](#) var, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)
- int [ppl_Z_Box_generalized_affine_image_lhs_rhs](#) (ppl_Z_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Z_Box_generalized_affine_preimage_lhs_rhs](#) (ppl_Z_Box_t ph, ppl_const_Linear_Expression_t lhs, enum [ppl_enum_Constraint_Type](#) relsym, ppl_const_Linear_Expression_t rhs)
- int [ppl_Z_Box_add_space_dimensions_and_embed](#) (ppl_Z_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Z_Box_add_space_dimensions_and_project](#) (ppl_Z_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Z_Box_remove_space_dimensions](#) (ppl_Z_Box_t ph, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_Z_Box_remove_higher_space_dimensions](#) (ppl_Z_Box_t ph, [ppl_dimension_type](#) d)
- int [ppl_Z_Box_expand_space_dimension](#) (ppl_Z_Box_t ph, [ppl_dimension_type](#) d, [ppl_dimension_type](#) m)
- int [ppl_Z_Box_fold_space_dimensions](#) (ppl_Z_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, [ppl_dimension_type](#) d)
- int [ppl_Z_Box_map_space_dimensions](#) (ppl_Z_Box_t ph, [ppl_dimension_type](#) maps[], size_t n)
- int [ppl_Z_Box_drop_some_non_integer_points](#) (ppl_Z_Box_t ph, int complexity)
- int [ppl_Z_Box_drop_some_non_integer_points_2](#) (ppl_Z_Box_t ph, [ppl_dimension_type](#) ds[], size_t n, int complexity)
- int [ppl_Z_Box_external_memory_in_bytes](#) (ppl_const_Z_Box_t ps, size_t *sz)
- int [ppl_Z_Box_total_memory_in_bytes](#) (ppl_const_Z_Box_t ps, size_t *sz)
- int [ppl_Z_Box_CC76_widening_assign_with_tokens](#) (ppl_Z_Box_t x, ppl_const_Z_Box_t y, unsigned *tp)
- int [ppl_Z_Box_CC76_widening_assign](#) (ppl_Z_Box_t x, ppl_const_Z_Box_t y)
- int [ppl_Z_Box_widening_assign_with_tokens](#) (ppl_Z_Box_t x, ppl_const_Z_Box_t y, unsigned *tp)
- int [ppl_Z_Box_widening_assign](#) (ppl_Z_Box_t x, ppl_const_Z_Box_t y)
- int [ppl_Z_Box_limited_CC76_extrapolation_assign_with_tokens](#) (ppl_Z_Box_t x, ppl_const_Z_Box_t y, ppl_const_Constraint_System_t cs, unsigned *tp)
- int [ppl_Z_Box_limited_CC76_extrapolation_assign](#) (ppl_Z_Box_t x, ppl_const_Z_Box_t y, ppl_const_Constraint_System_t cs)
- int [ppl_Z_Box_linear_partition](#) (ppl_const_Z_Box_t x, ppl_const_Z_Box_t y, ppl_Z_Box_t *p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t *p_rest)

- `int ppl_Z_Box_wrap_assign` (`ppl_Z_Box_t` *ph*, `ppl_dimension_type` *ds*[], `size_t` *n*, `enum ppl_enum_Bounded_Integer_Type_Width` *w*, `enum ppl_enum_Bounded_Integer_Type_Representation` *r*, `enum ppl_enum_Bounded_Integer_Type_Overflow` *o*, `const ppl_const_Constraint_System_t` **pcs*, `unsigned complexity_threshold`, `int wrap_individually`)
- `int ppl_new_Z_Box_recycle_Constraint_System` (`ppl_Z_Box_t` **pph*, `ppl_Constraint_System_t` *cs*)
- `int ppl_new_Z_Box_recycle_Congruence_System` (`ppl_Z_Box_t` **pph*, `ppl_Congruence_System_t` *cs*)
- `int ppl_new_Z_Box_recycle_Generator_System` (`ppl_Z_Box_t` **pph*, `ppl_Generator_System_t` *cs*)
- `int ppl_assign_Z_Box_from_Z_Box` (`ppl_Z_Box_t` *dst*, `ppl_const_Z_Box_t` *src*)
- `int ppl_Z_Box_add_recycled_constraints` (`ppl_Z_Box_t` *ph*, `ppl_Constraint_System_t` *cs*)
- `int ppl_Z_Box_add_recycled_congruences` (`ppl_Z_Box_t` *ph*, `ppl_Congruence_System_t` *cs*)
- `int ppl_termination_test_MS_Z_Box` (`ppl_const_Z_Box_t` *pset*)
- `int ppl_termination_test_PR_Z_Box` (`ppl_const_Z_Box_t` *pset*)
- `int ppl_one_affine_ranking_function_MS_Z_Box` (`ppl_const_Z_Box_t` *pset*, `ppl_Generator_t` *point*)
- `int ppl_one_affine_ranking_function_PR_Z_Box` (`ppl_const_Z_Box_t` *pset*, `ppl_Generator_t` *point*)
- `int ppl_all_affine_ranking_functions_MS_Z_Box` (`ppl_const_Z_Box_t` *pset*, `ppl_Polyhedron_t` *ph*)
- `int ppl_all_affine_ranking_functions_PR_Z_Box` (`ppl_const_Z_Box_t` *pset*, `ppl_Polyhedron_t` *ph*)
- `int ppl_termination_test_MS_Z_Box_2` (`ppl_const_Z_Box_t` *pset_before*, `ppl_const_Z_Box_t` *pset_after*)
- `int ppl_termination_test_PR_Z_Box_2` (`ppl_const_Z_Box_t` *pset_before*, `ppl_const_Z_Box_t` *pset_after*)
- `int ppl_one_affine_ranking_function_MS_Z_Box_2` (`ppl_const_Z_Box_t` *pset_before*, `ppl_const_Z_Box_t` *pset_after*, `ppl_Generator_t` *point*)
- `int ppl_one_affine_ranking_function_PR_Z_Box_2` (`ppl_const_Z_Box_t` *pset_before*, `ppl_const_Z_Box_t` *pset_after*, `ppl_Generator_t` *point*)
- `int ppl_all_affine_ranking_functions_MS_Z_Box_2` (`ppl_const_Z_Box_t` *pset_before*, `ppl_const_Z_Box_t` *pset_after*, `ppl_Polyhedron_t` *ph*)
- `int ppl_all_affine_ranking_functions_PR_Z_Box_2` (`ppl_const_Z_Box_t` *pset_before*, `ppl_const_Z_Box_t` *pset_after*, `ppl_Polyhedron_t` *ph*)

10.162.1 Detailed Description

Types and functions for `ppl_Z_Box_tag`.

10.162.2 Friends And Related Function Documentation

10.162.2.1 `int ppl_all_affine_ranking_functions_MS_Z_Box` (`ppl_const_Z_Box_t` *pset*, `ppl_Polyhedron_t` *ph*) [**related**]

10.162.2.2 `int ppl_all_affine_ranking_functions_MS_Z_Box_2` (`ppl_const_Z_Box_t` *pset_before*, `ppl_const_Z_Box_t` *pset_after*, `ppl_Polyhedron_t` *ph*) [**related**]

10.162.2.3 `int ppl_all_affine_ranking_functions_PR_Z_Box` (`ppl_const_Z_Box_t` *pset*, `ppl_Polyhedron_t` *ph*) [**related**]

- 10.162.2.4 `int ppl_all_affine_ranking_functions_PR_Z_Box_2 (ppl_const_Z_Box_t pset_before,
ppl_const_Z_Box_t pset_after, ppl_Polyhedron_t ph)` [`related`]
- 10.162.2.5 `int ppl_assign_Z_Box_from_Z_Box (ppl_Z_Box_t dst, ppl_const_Z_Box_t src)`
[`related`]
- 10.162.2.6 `int ppl_delete_Z_Box (ppl_const_Z_Box_t ph)` [`related`]
- 10.162.2.7 `int ppl_new_Z_Box_from_BD_Shape_double (ppl_Z_Box_t * pph,
ppl_const_BD_Shape_double_t ph)` [`related`]
- 10.162.2.8 `int ppl_new_Z_Box_from_BD_Shape_double_with_complexity (ppl_Z_Box_t * pph,
ppl_const_BD_Shape_double_t ph, int complexity)` [`related`]
- 10.162.2.9 `int ppl_new_Z_Box_from_BD_Shape_float (ppl_Z_Box_t * pph,
ppl_const_BD_Shape_float_t ph)` [`related`]
- 10.162.2.10 `int ppl_new_Z_Box_from_BD_Shape_float_with_complexity (ppl_Z_Box_t * pph,
ppl_const_BD_Shape_float_t ph, int complexity)` [`related`]
- 10.162.2.11 `int ppl_new_Z_Box_from_BD_Shape_int16_t (ppl_Z_Box_t * pph,
ppl_const_BD_Shape_int16_t_t ph)` [`related`]
- 10.162.2.12 `int ppl_new_Z_Box_from_BD_Shape_int16_t_with_complexity (ppl_Z_Box_t * pph,
ppl_const_BD_Shape_int16_t_t ph, int complexity)` [`related`]
- 10.162.2.13 `int ppl_new_Z_Box_from_BD_Shape_int32_t (ppl_Z_Box_t * pph,
ppl_const_BD_Shape_int32_t_t ph)` [`related`]

- 10.162.2.14** `int ppl_new_Z_Box_from_BD_Shape_int32_t_with_complexity (ppl_Z_Box_t * pph,
ppl_const_BD_Shape_int32_t_t ph, int complexity)` [**related**]
- 10.162.2.15** `int ppl_new_Z_Box_from_BD_Shape_int64_t (ppl_Z_Box_t * pph,
ppl_const_BD_Shape_int64_t_t ph)` [**related**]
- 10.162.2.16** `int ppl_new_Z_Box_from_BD_Shape_int64_t_with_complexity (ppl_Z_Box_t * pph,
ppl_const_BD_Shape_int64_t_t ph, int complexity)` [**related**]
- 10.162.2.17** `int ppl_new_Z_Box_from_BD_Shape_int8_t (ppl_Z_Box_t * pph,
ppl_const_BD_Shape_int8_t_t ph)` [**related**]
- 10.162.2.18** `int ppl_new_Z_Box_from_BD_Shape_int8_t_with_complexity (ppl_Z_Box_t * pph,
ppl_const_BD_Shape_int8_t_t ph, int complexity)` [**related**]
- 10.162.2.19** `int ppl_new_Z_Box_from_BD_Shape_long_double (ppl_Z_Box_t * pph,
ppl_const_BD_Shape_long_double_t ph)` [**related**]
- 10.162.2.20** `int ppl_new_Z_Box_from_BD_Shape_long_double_with_complexity (ppl_Z_Box_t *
pph, ppl_const_BD_Shape_long_double_t ph, int complexity)` [**related**]
- 10.162.2.21** `int ppl_new_Z_Box_from_BD_Shape_mpq_class (ppl_Z_Box_t * pph,
ppl_const_BD_Shape_mpq_class_t ph)` [**related**]
- 10.162.2.22** `int ppl_new_Z_Box_from_BD_Shape_mpq_class_with_complexity (ppl_Z_Box_t *
pph, ppl_const_BD_Shape_mpq_class_t ph, int complexity)` [**related**]

- 10.162.2.23** `int ppl_new_Z_Box_from_BD_Shape_mpz_class (ppl_Z_Box_t * pph,
ppl_const_BD_Shape_mpz_class_t ph)` [**related**]
- 10.162.2.24** `int ppl_new_Z_Box_from_BD_Shape_mpz_class_with_complexity (ppl_Z_Box_t *
pph, ppl_const_BD_Shape_mpz_class_t ph, int complexity)` [**related**]
- 10.162.2.25** `int ppl_new_Z_Box_from_C_Polyhedron (ppl_Z_Box_t * pph,
ppl_const_Polyhedron_t ph)` [**related**]
- 10.162.2.26** `int ppl_new_Z_Box_from_C_Polyhedron_with_complexity (ppl_Z_Box_t * pph,
ppl_const_Polyhedron_t ph, int complexity)` [**related**]
- 10.162.2.27** `int ppl_new_Z_Box_from_Congruence_System (ppl_Z_Box_t * pph,
ppl_const_Congruence_System_t cs)` [**related**]
- 10.162.2.28** `int ppl_new_Z_Box_from_Constraint_System (ppl_Z_Box_t * pph,
ppl_const_Constraint_System_t cs)` [**related**]
- 10.162.2.29** `int ppl_new_Z_Box_from_Double_Box (ppl_Z_Box_t * pph, ppl_const_Double_Box_t
ph)` [**related**]
- 10.162.2.30** `int ppl_new_Z_Box_from_Double_Box_with_complexity (ppl_Z_Box_t * pph,
ppl_const_Double_Box_t ph, int complexity)` [**related**]
- 10.162.2.31** `int ppl_new_Z_Box_from_Float_Box (ppl_Z_Box_t * pph, ppl_const_Float_Box_t ph)`
[**related**]

- 10.162.2.32 `int ppl_new_Z_Box_from_Float_Box_with_complexity (ppl_Z_Box_t * pph,
ppl_const_Float_Box_t ph, int complexity)` [`related`]
- 10.162.2.33 `int ppl_new_Z_Box_from_Generator_System (ppl_Z_Box_t * pph,
ppl_const_Generator_System_t cs)` [`related`]
- 10.162.2.34 `int ppl_new_Z_Box_from_Grid (ppl_Z_Box_t * pph, ppl_const_Grid_t ph)`
[`related`]
- 10.162.2.35 `int ppl_new_Z_Box_from_Grid_with_complexity (ppl_Z_Box_t * pph,
ppl_const_Grid_t ph, int complexity)` [`related`]
- 10.162.2.36 `int ppl_new_Z_Box_from_Int16_Box (ppl_Z_Box_t * pph, ppl_const_Int16_Box_t
ph)` [`related`]
- 10.162.2.37 `int ppl_new_Z_Box_from_Int16_Box_with_complexity (ppl_Z_Box_t * pph,
ppl_const_Int16_Box_t ph, int complexity)` [`related`]
- 10.162.2.38 `int ppl_new_Z_Box_from_Int32_Box (ppl_Z_Box_t * pph, ppl_const_Int32_Box_t
ph)` [`related`]
- 10.162.2.39 `int ppl_new_Z_Box_from_Int32_Box_with_complexity (ppl_Z_Box_t * pph,
ppl_const_Int32_Box_t ph, int complexity)` [`related`]
- 10.162.2.40 `int ppl_new_Z_Box_from_Int64_Box (ppl_Z_Box_t * pph, ppl_const_Int64_Box_t
ph)` [`related`]

- 10.162.2.41** `int ppl_new_Z_Box_from_Int64_Box_with_complexity (ppl_Z_Box_t * pph,
ppl_const_Int64_Box_t ph, int complexity)` [**related**]
- 10.162.2.42** `int ppl_new_Z_Box_from_Int8_Box (ppl_Z_Box_t * pph, ppl_const_Int8_Box_t ph)`
[**related**]
- 10.162.2.43** `int ppl_new_Z_Box_from_Int8_Box_with_complexity (ppl_Z_Box_t * pph,
ppl_const_Int8_Box_t ph, int complexity)` [**related**]
- 10.162.2.44** `int ppl_new_Z_Box_from_Long_Double_Box (ppl_Z_Box_t * pph,
ppl_const_Long_Double_Box_t ph)` [**related**]
- 10.162.2.45** `int ppl_new_Z_Box_from_Long_Double_Box_with_complexity (ppl_Z_Box_t * pph,
ppl_const_Long_Double_Box_t ph, int complexity)` [**related**]
- 10.162.2.46** `int ppl_new_Z_Box_from_NNC_Polyhedron (ppl_Z_Box_t * pph,
ppl_const_Polyhedron_t ph)` [**related**]
- 10.162.2.47** `int ppl_new_Z_Box_from_NNC_Polyhedron_with_complexity (ppl_Z_Box_t * pph,
ppl_const_Polyhedron_t ph, int complexity)` [**related**]
- 10.162.2.48** `int ppl_new_Z_Box_from-Octagonal_Shape_double (ppl_Z_Box_t * pph,
ppl_const-Octagonal_Shape_double_t ph)` [**related**]
- 10.162.2.49** `int ppl_new_Z_Box_from-Octagonal_Shape_double_with_complexity (ppl_Z_Box_t
* pph, ppl_const-Octagonal_Shape_double_t ph, int complexity)` [**related**]

- 10.162.2.50** `int ppl_new_Z_Box_from_Octagonal_Shape_float (ppl_Z_Box_t * pph,
ppl_const_Octagonal_Shape_float_t ph)` [*related*]
- 10.162.2.51** `int ppl_new_Z_Box_from_Octagonal_Shape_float_with_complexity (ppl_Z_Box_t *
pph, ppl_const_Octagonal_Shape_float_t ph, int complexity)` [*related*]
- 10.162.2.52** `int ppl_new_Z_Box_from_Octagonal_Shape_int16_t (ppl_Z_Box_t * pph,
ppl_const_Octagonal_Shape_int16_t_t ph)` [*related*]
- 10.162.2.53** `int ppl_new_Z_Box_from_Octagonal_Shape_int16_t_with_complexity (ppl_Z_Box_t
* pph, ppl_const_Octagonal_Shape_int16_t_t ph, int complexity)` [*related*]
- 10.162.2.54** `int ppl_new_Z_Box_from_Octagonal_Shape_int32_t (ppl_Z_Box_t * pph,
ppl_const_Octagonal_Shape_int32_t_t ph)` [*related*]
- 10.162.2.55** `int ppl_new_Z_Box_from_Octagonal_Shape_int32_t_with_complexity (ppl_Z_Box_t
* pph, ppl_const_Octagonal_Shape_int32_t_t ph, int complexity)` [*related*]
- 10.162.2.56** `int ppl_new_Z_Box_from_Octagonal_Shape_int64_t (ppl_Z_Box_t * pph,
ppl_const_Octagonal_Shape_int64_t_t ph)` [*related*]
- 10.162.2.57** `int ppl_new_Z_Box_from_Octagonal_Shape_int64_t_with_complexity (ppl_Z_Box_t
* pph, ppl_const_Octagonal_Shape_int64_t_t ph, int complexity)` [*related*]
- 10.162.2.58** `int ppl_new_Z_Box_from_Octagonal_Shape_int8_t (ppl_Z_Box_t * pph,
ppl_const_Octagonal_Shape_int8_t_t ph)` [*related*]

- 10.162.2.59** `int ppl_new_Z_Box_from_Octagonal_Shape_int8_t_with_complexity (ppl_Z_Box_t * pph, ppl_const_Octagonal_Shape_int8_t ph, int complexity)` [**related**]
- 10.162.2.60** `int ppl_new_Z_Box_from_Octagonal_Shape_long_double (ppl_Z_Box_t * pph, ppl_const_Octagonal_Shape_long_double_t ph)` [**related**]
- 10.162.2.61** `int ppl_new_Z_Box_from_Octagonal_Shape_long_double_with_complexity (ppl_Z_Box_t * pph, ppl_const_Octagonal_Shape_long_double_t ph, int complexity)` [**related**]
- 10.162.2.62** `int ppl_new_Z_Box_from_Octagonal_Shape_mpq_class (ppl_Z_Box_t * pph, ppl_const_Octagonal_Shape_mpq_class_t ph)` [**related**]
- 10.162.2.63** `int ppl_new_Z_Box_from_Octagonal_Shape_mpq_class_with_complexity (ppl_Z_Box_t * pph, ppl_const_Octagonal_Shape_mpq_class_t ph, int complexity)` [**related**]
- 10.162.2.64** `int ppl_new_Z_Box_from_Octagonal_Shape_mpz_class (ppl_Z_Box_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph)` [**related**]
- 10.162.2.65** `int ppl_new_Z_Box_from_Octagonal_Shape_mpz_class_with_complexity (ppl_Z_Box_t * pph, ppl_const_Octagonal_Shape_mpz_class_t ph, int complexity)` [**related**]
- 10.162.2.66** `int ppl_new_Z_Box_from_Rational_Box (ppl_Z_Box_t * pph, ppl_const_Rational_Box_t ph)` [**related**]
- 10.162.2.67** `int ppl_new_Z_Box_from_Rational_Box_with_complexity (ppl_Z_Box_t * pph, ppl_const_Rational_Box_t ph, int complexity)` [**related**]

- 10.162.2.68 `int ppl_new_Z_Box_from_space_dimension (ppl_Z_Box_t * pph, ppl_dimension_type d, int empty)` [**related**]
- 10.162.2.69 `int ppl_new_Z_Box_from_Uint16_Box (ppl_Z_Box_t * pph, ppl_const_Uint16_Box_t ph)` [**related**]
- 10.162.2.70 `int ppl_new_Z_Box_from_Uint16_Box_with_complexity (ppl_Z_Box_t * pph, ppl_const_Uint16_Box_t ph, int complexity)` [**related**]
- 10.162.2.71 `int ppl_new_Z_Box_from_Uint32_Box (ppl_Z_Box_t * pph, ppl_const_Uint32_Box_t ph)` [**related**]
- 10.162.2.72 `int ppl_new_Z_Box_from_Uint32_Box_with_complexity (ppl_Z_Box_t * pph, ppl_const_Uint32_Box_t ph, int complexity)` [**related**]
- 10.162.2.73 `int ppl_new_Z_Box_from_Uint64_Box (ppl_Z_Box_t * pph, ppl_const_Uint64_Box_t ph)` [**related**]
- 10.162.2.74 `int ppl_new_Z_Box_from_Uint64_Box_with_complexity (ppl_Z_Box_t * pph, ppl_const_Uint64_Box_t ph, int complexity)` [**related**]
- 10.162.2.75 `int ppl_new_Z_Box_from_Uint8_Box (ppl_Z_Box_t * pph, ppl_const_Uint8_Box_t ph)` [**related**]
- 10.162.2.76 `int ppl_new_Z_Box_from_Uint8_Box_with_complexity (ppl_Z_Box_t * pph, ppl_const_Uint8_Box_t ph, int complexity)` [**related**]

- 10.162.2.77 `int ppl_new_Z_Box_from_Z_Box (ppl_Z_Box_t * pph, ppl_const_Z_Box_t ph)`
[related]
- 10.162.2.78 `int ppl_new_Z_Box_from_Z_Box_with_complexity (ppl_Z_Box_t * pph,
ppl_const_Z_Box_t ph, int complexity)` [related]
- 10.162.2.79 `int ppl_new_Z_Box_recycle_Congruence_System (ppl_Z_Box_t * pph,
ppl_Congruence_System_t cs)` [related]
- 10.162.2.80 `int ppl_new_Z_Box_recycle_Constraint_System (ppl_Z_Box_t * pph,
ppl_Constraint_System_t cs)` [related]
- 10.162.2.81 `int ppl_new_Z_Box_recycle_Generator_System (ppl_Z_Box_t * pph,
ppl_Generator_System_t cs)` [related]
- 10.162.2.82 `int ppl_one_affine_ranking_function_MS_Z_Box (ppl_const_Z_Box_t pset,
ppl_Generator_t point)` [related]
- 10.162.2.83 `int ppl_one_affine_ranking_function_MS_Z_Box_2 (ppl_const_Z_Box_t pset_before,
ppl_const_Z_Box_t pset_after, ppl_Generator_t point)` [related]
- 10.162.2.84 `int ppl_one_affine_ranking_function_PR_Z_Box (ppl_const_Z_Box_t pset,
ppl_Generator_t point)` [related]
- 10.162.2.85 `int ppl_one_affine_ranking_function_PR_Z_Box_2 (ppl_const_Z_Box_t pset_before,
ppl_const_Z_Box_t pset_after, ppl_Generator_t point)` [related]
- 10.162.2.86 `int ppl_termination_test_MS_Z_Box (ppl_const_Z_Box_t pset)` [related]

- 10.162.2.87 `int ppl_termination_test_MS_Z_Box_2 (ppl_const_Z_Box_t pset_before,
ppl_const_Z_Box_t pset_after)` [`related`]
- 10.162.2.88 `int ppl_termination_test_PR_Z_Box (ppl_const_Z_Box_t pset)` [`related`]
- 10.162.2.89 `int ppl_termination_test_PR_Z_Box_2 (ppl_const_Z_Box_t pset_before,
ppl_const_Z_Box_t pset_after)` [`related`]
- 10.162.2.90 `int ppl_Z_Box_add_congruence (ppl_Z_Box_t ph, ppl_const_Congruence_t c)`
[`related`]
- 10.162.2.91 `int ppl_Z_Box_add_congruences (ppl_Z_Box_t ph, ppl_const_Congruence_System_t
cs)` [`related`]
- 10.162.2.92 `int ppl_Z_Box_add_constraint (ppl_Z_Box_t ph, ppl_const_Constraint_t c)`
[`related`]
- 10.162.2.93 `int ppl_Z_Box_add_constraints (ppl_Z_Box_t ph, ppl_const_Constraint_System_t cs)`
[`related`]
- 10.162.2.94 `int ppl_Z_Box_add_recycled_congruences (ppl_Z_Box_t ph,
ppl_Congruence_System_t cs)` [`related`]
- 10.162.2.95 `int ppl_Z_Box_add_recycled_constraints (ppl_Z_Box_t ph, ppl_Constraint_System_t
cs)` [`related`]
- 10.162.2.96 `int ppl_Z_Box_add_space_dimensions_and_embed (ppl_Z_Box_t ph,
ppl_dimension_type d)` [`related`]

- 10.162.2.97 `int ppl_Z_Box_add_space_dimensions_and_project (ppl_Z_Box_t ph,
ppl_dimension_type d)` [`related`]
- 10.162.2.98 `int ppl_Z_Box_affine_dimension (ppl_const_Z_Box_t ph, ppl_dimension_type * m)`
[`related`]
- 10.162.2.99 `int ppl_Z_Box_affine_image (ppl_Z_Box_t ph, ppl_dimension_type var,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.162.2.100 `int ppl_Z_Box_affine_preimage (ppl_Z_Box_t ph, ppl_dimension_type var,
ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` [`related`]
- 10.162.2.101 `int ppl_Z_Box_bounded_affine_image (ppl_Z_Box_t ph, ppl_dimension_type
var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub,
ppl_const_Coefficient_t d)` [`related`]
- 10.162.2.102 `int ppl_Z_Box_bounded_affine_preimage (ppl_Z_Box_t ph, ppl_dimension_type
var, ppl_const_Linear_Expression_t lb, ppl_const_Linear_Expression_t ub,
ppl_const_Coefficient_t d)` [`related`]
- 10.162.2.103 `int ppl_Z_Box_bounds_from_above (ppl_const_Z_Box_t ph,
ppl_const_Linear_Expression_t le)` [`related`]
- 10.162.2.104 `int ppl_Z_Box_bounds_from_below (ppl_const_Z_Box_t ph,
ppl_const_Linear_Expression_t le)` [`related`]
- 10.162.2.105 `int ppl_Z_Box_CC76_widening_assign (ppl_Z_Box_t x, ppl_const_Z_Box_t y)`
[`related`]

- 10.162.2.106 `int ppl_Z_Box_CC76_widening_assign_with_tokens (ppl_Z_Box_t x, ppl_const_Z_Box_t y, unsigned * tp)` [**related**]
- 10.162.2.107 `int ppl_Z_Box_concatenate_assign (ppl_Z_Box_t x, ppl_const_Z_Box_t y)` [**related**]
- 10.162.2.108 `int ppl_Z_Box_constrains (ppl_Z_Box_t ph, ppl_dimension_type var)` [**related**]
- 10.162.2.109 `int ppl_Z_Box_contains_integer_point (ppl_const_Z_Box_t ph)` [**related**]
- 10.162.2.110 `int ppl_Z_Box_contains_Z_Box (ppl_const_Z_Box_t x, ppl_const_Z_Box_t y)` [**related**]
- 10.162.2.111 `int ppl_Z_Box_difference_assign (ppl_Z_Box_t x, ppl_const_Z_Box_t y)` [**related**]
- 10.162.2.112 `int ppl_Z_Box_drop_some_non_integer_points (ppl_Z_Box_t ph, int complexity)` [**related**]
- 10.162.2.113 `int ppl_Z_Box_drop_some_non_integer_points_2 (ppl_Z_Box_t ph, ppl_dimension_type ds[], size_t n, int complexity)` [**related**]
- 10.162.2.114 `int ppl_Z_Box_equals_Z_Box (ppl_const_Z_Box_t x, ppl_const_Z_Box_t y)` [**related**]
- 10.162.2.115 `int ppl_Z_Box_expand_space_dimension (ppl_Z_Box_t ph, ppl_dimension_type d, ppl_dimension_type m)` [**related**]

- 10.162.2.116 `int ppl_Z_Box_external_memory_in_bytes (ppl_const_Z_Box_t ps, size_t * sz)` `[related]`
- 10.162.2.117 `int ppl_Z_Box_fold_space_dimensions (ppl_Z_Box_t ph, ppl_dimension_type ds[], size_t n, ppl_dimension_type d)` `[related]`
- 10.162.2.118 `int ppl_Z_Box_frequency (ppl_const_Z_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_fn, ppl_Coefficient_t ext_fd, ppl_Coefficient_t ext_vn, ppl_Coefficient_t ext_vd)` `[related]`
- 10.162.2.119 `int ppl_Z_Box_generalized_affine_image (ppl_Z_Box_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` `[related]`
- 10.162.2.120 `int ppl_Z_Box_generalized_affine_image_lhs_rhs (ppl_Z_Box_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t rhs)` `[related]`
- 10.162.2.121 `int ppl_Z_Box_generalized_affine_preimage (ppl_Z_Box_t ph, ppl_dimension_type var, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t d)` `[related]`
- 10.162.2.122 `int ppl_Z_Box_generalized_affine_preimage_lhs_rhs (ppl_Z_Box_t ph, ppl_const_Linear_Expression_t lhs, enum ppl_enum_Constraint_Type relysym, ppl_const_Linear_Expression_t rhs)` `[related]`
- 10.162.2.123 `int ppl_Z_Box_get_congruences (ppl_const_Z_Box_t ph, ppl_const_Congruence_System_t * pcs)` `[related]`

- 10.162.2.124 `int ppl_Z_Box_get_constraints (ppl_const_Z_Box_t ph,
ppl_const_Constraint_System_t * pcs)` [related]
- 10.162.2.125 `int ppl_Z_Box_get_minimized_congruences (ppl_const_Z_Box_t ph,
ppl_const_Congruence_System_t * pcs)` [related]
- 10.162.2.126 `int ppl_Z_Box_get_minimized_constraints (ppl_const_Z_Box_t ph,
ppl_const_Constraint_System_t * pcs)` [related]
- 10.162.2.127 `int ppl_Z_Box_intersection_assign (ppl_Z_Box_t x, ppl_const_Z_Box_t y)`
[related]
- 10.162.2.128 `int ppl_Z_Box_is_bounded (ppl_const_Z_Box_t ph)` [related]
- 10.162.2.129 `int ppl_Z_Box_is_discrete (ppl_const_Z_Box_t ph)` [related]
- 10.162.2.130 `int ppl_Z_Box_is_disjoint_from_Z_Box (ppl_const_Z_Box_t x, ppl_const_Z_Box_t
y)` [related]
- 10.162.2.131 `int ppl_Z_Box_is_empty (ppl_const_Z_Box_t ph)` [related]
- 10.162.2.132 `int ppl_Z_Box_is_topologically_closed (ppl_const_Z_Box_t ph)` [related]
- 10.162.2.133 `int ppl_Z_Box_is_universe (ppl_const_Z_Box_t ph)` [related]

- 10.162.2.134 `int ppl_Z_Box_limited_CC76_extrapolation_assign (ppl_Z_Box_t x, ppl_const_Z_Box_t y, ppl_const_Constraint_System_t cs)` [related]
- 10.162.2.135 `int ppl_Z_Box_limited_CC76_extrapolation_assign_with_tokens (ppl_Z_Box_t x, ppl_const_Z_Box_t y, ppl_const_Constraint_System_t cs, unsigned * tp)` [related]
- 10.162.2.136 `int ppl_Z_Box_linear_partition (ppl_const_Z_Box_t x, ppl_const_Z_Box_t y, ppl_Z_Box_t * p_inters, ppl_Pointset_Powerset_NNC_Polyhedron_t * p_rest)` [related]
- 10.162.2.137 `int ppl_Z_Box_map_space_dimensions (ppl_Z_Box_t ph, ppl_dimension_type maps[], size_t n)` [related]
- 10.162.2.138 `int ppl_Z_Box_maximize (ppl_const_Z_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [related]
- 10.162.2.139 `int ppl_Z_Box_maximize_with_point (ppl_const_Z_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` [related]
- 10.162.2.140 `int ppl_Z_Box_minimize (ppl_const_Z_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum)` [related]
- 10.162.2.141 `int ppl_Z_Box_minimize_with_point (ppl_const_Z_Box_t ph, ppl_const_Linear_Expression_t le, ppl_Coefficient_t ext_n, ppl_Coefficient_t ext_d, int * poptimum, ppl_Generator_t point)` [related]
- 10.162.2.142 `int ppl_Z_Box_OK (ppl_const_Z_Box_t ph)` [related]

- 10.162.2.143 `int ppl_Z_Box_refine_with_congruence (ppl_Z_Box_t ph, ppl_const_Congruence_t c)` [**related**]
- 10.162.2.144 `int ppl_Z_Box_refine_with_congruences (ppl_Z_Box_t ph, ppl_const_Congruence_System_t cs)` [**related**]
- 10.162.2.145 `int ppl_Z_Box_refine_with_constraint (ppl_Z_Box_t ph, ppl_const_Constraint_t c)` [**related**]
- 10.162.2.146 `int ppl_Z_Box_refine_with_constraints (ppl_Z_Box_t ph, ppl_const_Constraint_System_t cs)` [**related**]
- 10.162.2.147 `int ppl_Z_Box_relation_with_Congruence (ppl_const_Z_Box_t ph, ppl_const_Congruence_t c)` [**related**]
- 10.162.2.148 `int ppl_Z_Box_relation_with_Constraint (ppl_const_Z_Box_t ph, ppl_const_Constraint_t c)` [**related**]
- 10.162.2.149 `int ppl_Z_Box_relation_with_Generator (ppl_const_Z_Box_t ph, ppl_const_Generator_t c)` [**related**]
- 10.162.2.150 `int ppl_Z_Box_remove_higher_space_dimensions (ppl_Z_Box_t ph, ppl_dimension_type d)` [**related**]
- 10.162.2.151 `int ppl_Z_Box_remove_space_dimensions (ppl_Z_Box_t ph, ppl_dimension_type ds[], size_t n)` [**related**]

10.162.2.152 `int ppl_Z_Box_simplify_using_context_assign (ppl_Z_Box_t x, ppl_const_Z_Box_t y)` [**related**]

10.162.2.153 `int ppl_Z_Box_space_dimension (ppl_const_Z_Box_t ph, ppl_dimension_type * m)` [**related**]

10.162.2.154 `int ppl_Z_Box_strictly_contains_Z_Box (ppl_const_Z_Box_t x, ppl_const_Z_Box_t y)` [**related**]

10.162.2.155 `int ppl_Z_Box_time_elapse_assign (ppl_Z_Box_t x, ppl_const_Z_Box_t y)` [**related**]

10.162.2.156 `int ppl_Z_Box_topological_closure_assign (ppl_Z_Box_t ph)` [**related**]

10.162.2.157 `int ppl_Z_Box_total_memory_in_bytes (ppl_const_Z_Box_t ps, size_t * sz)` [**related**]

10.162.2.158 `int ppl_Z_Box_unconstrain_space_dimension (ppl_Z_Box_t ph, ppl_dimension_type var)` [**related**]

10.162.2.159 `int ppl_Z_Box_unconstrain_space_dimensions (ppl_Z_Box_t ph, ppl_dimension_type ds[], size_t n)` [**related**]

10.162.2.160 `int ppl_Z_Box_upper_bound_assign (ppl_Z_Box_t x, ppl_const_Z_Box_t y)` [**related**]

10.162.2.161 `int ppl_Z_Box_upper_bound_assign_if_exact (ppl_Z_Box_t x, ppl_const_Z_Box_t y)` [**related**]

- 10.162.2.162** `int ppl_Z_Box_widening_assign (ppl_Z_Box_t x, ppl_const_Z_Box_t y)`
[related]
- 10.162.2.163** `int ppl_Z_Box_widening_assign_with_tokens (ppl_Z_Box_t x, ppl_const_Z_Box_t y, unsigned * tp)` [related]
- 10.162.2.164** `int ppl_Z_Box_wrap_assign (ppl_Z_Box_t ph, ppl_dimension_type ds[], size_t n, enum ppl_enum_Bounded_Integer_Type_Width w, enum ppl_enum_Bounded_Integer_Type_Representation r, enum ppl_enum_Bounded_Integer_Type_Overflow o, const ppl_const_Constraint_System_t * pcs, unsigned complexity_threshold, int wrap_individually)` [related]

The documentation for this interface was generated from the following file:

- [ppl_c.h](#)

10.163 Parma_Polyhedra_Library::Interfaces::C::timeout_exception Class Reference

```
#include <ppl_c_implementation_common.defs.hh>
```

Public Member Functions

- void [throw_me](#) () const
- int [priority](#) () const

10.163.1 Detailed Description

Definition at line 106 of file `ppl_c_implementation_common.defs.hh`.

10.163.2 Member Function Documentation

- 10.163.2.1** `int Parma_Polyhedra_Library::Interfaces::C::timeout_exception::priority () const`
[inline]

Definition at line 111 of file `ppl_c_implementation_common.defs.hh`.

- 10.163.2.2** `void Parma_Polyhedra_Library::Interfaces::C::timeout_exception::throw_me () const`
[inline]

Definition at line 108 of file `ppl_c_implementation_common.defs.hh`.

The documentation for this class was generated from the following file:

- [ppl_c_implementation_common.defs.hh](#)

11 File Documentation

11.1 C_interface.dox File Reference

11.1.1 Function Documentation

- 11.1.1.1 `int ppl_Polyhedron_relation_with_Congruence (ppl_const_Polyhedron_t ph,
ppl_const_Congruence_t c)` [**related**]

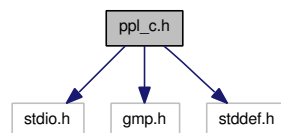
11.2 fdl.dox File Reference

11.3 gpl.dox File Reference

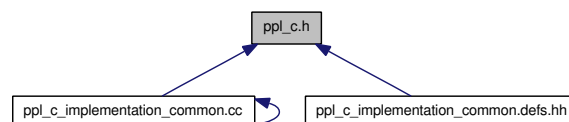
11.4 ppl_c.h File Reference

```
#include <stdio.h>
#include <gmp.h>
#include <stddef.h>
```

Include dependency graph for `ppl_c.h`:



This graph shows which files directly or indirectly include this file:



Defines

- `#define PPL_PROTO(protos) ()`
- `#define PPL_VERSION "0.11.2"`
A string containing the PPL version.

- #define `PPL_VERSION_MAJOR` 0
The major number of the PPL version.
- #define `PPL_VERSION_MINOR` 11
The minor number of the PPL version.
- #define `PPL_VERSION_REVISION` 2
The revision number of the PPL version.
- #define `PPL_VERSION_BETA` 0
The beta number of the PPL version. This is zero for official releases and nonzero for development snapshots.
- #define `PPL_TYPE_DECLARATION`(Type)
- #define `PPL_DECLARE_PRINT_FUNCTIONS`(Type)
- #define `PPL_DECLARE_ASCII_DUMP_LOAD_FUNCTIONS`(Type)
- #define `PPL_DECLARE_IO_FUNCTIONS`(Type)
- #define `PPL_DECLARE_AND_DOCUMENT_PRINT_FUNCTIONS`(Type)
- #define `PPL_DECLARE_AND_DOCUMENT_ASCII_DUMP_LOAD_FUNCTIONS`(Type)
- #define `PPL_DECLARE_AND_DOCUMENT_IO_FUNCTIONS`(Type)

Typedefs

- typedef size_t `ppl_dimension_type`
An unsigned integral type for representing space dimensions.
- typedef const char * `ppl_io_variable_output_function_type` (`ppl_dimension_type` var)
The type of output functions used for printing variables.

Enumerations

- enum `ppl_enum_error_code` {
`PPL_ERROR_OUT_OF_MEMORY`, `PPL_ERROR_INVALID_ARGUMENT`, `PPL_ERROR_DOMAIN_ERROR`, `PPL_ERROR_LENGTH_ERROR`,
`PPL_ARITHMETIC_OVERFLOW`, `PPL_STDIO_ERROR`, `PPL_ERROR_INTERNAL_ERROR`,
`PPL_ERROR_UNKNOWN_STANDARD_EXCEPTION`,
`PPL_ERROR_UNEXPECTED_ERROR`, `PPL_TIMEOUT_EXCEPTION`, `PPL_ERROR_LOGIC_ERROR` }
Defines the error codes that any function may return.
- enum `ppl_enum_Constraint_Type` {
`PPL_CONSTRAINT_TYPE_LESS_THAN`, `PPL_CONSTRAINT_TYPE_LESS_OR_EQUAL`,
`PPL_CONSTRAINT_TYPE_EQUAL`, `PPL_CONSTRAINT_TYPE_GREATER_OR_EQUAL`,
`PPL_CONSTRAINT_TYPE_GREATER_THAN` }
Describes the relations represented by a constraint.

- enum `ppl_enum_Generator_Type` { `PPL_GENERATOR_TYPE_LINE`, `PPL_GENERATOR_TYPE_RAY`, `PPL_GENERATOR_TYPE_POINT`, `PPL_GENERATOR_TYPE_CLOSURE_POINT` }
Describes the different kinds of generators.
- enum `ppl_enum_Grid_Generator_Type` { `PPL_GRID_GENERATOR_TYPE_LINE`, `PPL_GRID_GENERATOR_TYPE_PARAMETER`, `PPL_GRID_GENERATOR_TYPE_POINT` }
Describes the different kinds of grid generators.
- enum `ppl_enum_Bounded_Integer_Type_Width` { `PPL_BITS_8`, `PPL_BITS_16`, `PPL_BITS_32`, `PPL_BITS_64`, `PPL_BITS_128` }
Widths of bounded integer types.
- enum `ppl_enum_Bounded_Integer_Type_Representation` { `PPL_UNSIGNED`, `PPL_SIGNED_2_COMPLEMENT` }
Representation of bounded integer types.
- enum `ppl_enum_Bounded_Integer_Type_Overflow` { `PPL_OVERFLOW_WRAPS`, `PPL_OVERFLOW_UNDEFINED`, `PPL_OVERFLOW_IMPOSSIBLE` }
Overflow behavior of bounded integer types.

Functions

- int `ppl_initialize` (void)
Initializes the Parma Polyhedra Library. This function must be called before any other function.
- int `ppl_finalize` (void)
Finalizes the Parma Polyhedra Library. This function must be called after any other function.
- int `ppl_set_rounding_for_PPL` (void)
Sets the FPU rounding mode so that the PPL abstractions based on floating point numbers work correctly.
- int `ppl_restore_pre_PPL_rounding` (void)
Sets the FPU rounding mode as it was before initialization of the PPL.
- int `ppl_irrational_precision` (unsigned *p)
*Writes to *p* the precision parameter used for irrational calculations.*
- int `ppl_set_irrational_precision` (unsigned p)
Sets the precision parameter used for irrational calculations.
- int `ppl_version_major` (void)
Returns the major number of the PPL version.
- int `ppl_version_minor` (void)
Returns the minor number of the PPL version.

- `int ppl_version_revision` (void)
Returns the revision number of the PPL version.
- `int ppl_version_beta` (void)
Returns the beta number of the PPL version.
- `int ppl_version` (const char **p)
*Writes to *p a pointer to a character string containing the PPL version.*
- `int ppl_banner` (const char **p)
*Writes to *p a pointer to a character string containing the PPL banner.*
- `int ppl_set_error_handler` (void(*h)(enum `ppl_enum_error_code` code, const char *description))
Installs the user-defined error handler pointed at by h.
- `int ppl_set_timeout` (unsigned time)
Sets the timeout for computations whose completion could require an exponential amount of time.
- `int ppl_reset_timeout` (void)
Resets the timeout time so that the computation is not interrupted.
- `int ppl_set_deterministic_timeout` (unsigned weight)
Sets a threshold for computations whose completion could require an exponential amount of time.
- `int ppl_reset_deterministic_timeout` (void)
Resets the deterministic timeout so that the computation is not interrupted.
- `int ppl_max_space_dimension` (`ppl_dimension_type` *m)
Writes to m the maximum space dimension this library can handle.
- `int ppl_not_a_dimension` (`ppl_dimension_type` *m)
Writes to m a value that does not designate a valid dimension.
- `int ppl_io_print_variable` (`ppl_dimension_type` var)
Pretty-prints var to stdout.
- `int ppl_io_fprint_variable` (FILE *stream, `ppl_dimension_type` var)
Pretty-prints var to the given output stream.
- `int ppl_io_asprint_variable` (char **strp, `ppl_dimension_type` var)
Pretty-prints var to a malloc-allocated string, a pointer to which is returned via strp.
- `int ppl_io_set_variable_output_function` (`ppl_io_variable_output_function_type` *p)
Sets the output function to be used for printing variables to p.
- `int ppl_io_get_variable_output_function` (`ppl_io_variable_output_function_type` **pp)
Writes a pointer to the current variable output function to pp.
- `char * ppl_io_wrap_string` (const char *src, unsigned indent_depth, unsigned preferred_first_line_length, unsigned preferred_line_length)

Utility function for the wrapping of lines of text.

Constructors, Assignment and Destructor

- int `ppl_new_Generator_System_zero_dim_univ` (`ppl_Generator_System_t *pgs`)
- int `ppl_new_Grid_Generator_System_zero_dim_univ` (`ppl_Grid_Generator_System_t *pgs`)

Variables

- unsigned int `PPL_COMPLEXITY_CLASS_POLYNOMIAL`
Code of the worst-case polynomial complexity class.
- unsigned int `PPL_COMPLEXITY_CLASS_SIMPLEX`
Code of the worst-case exponential but typically polynomial complexity class.
- unsigned int `PPL_COMPLEXITY_CLASS_ANY`
Code of the universal complexity class.
- unsigned int `PPL_POLY_CON_RELATION_IS_DISJOINT`
Individual bit saying that the polyhedron and the set of points satisfying the constraint are disjoint.
- unsigned int `PPL_POLY_CON_RELATION_STRICTLY_INTERSECTS`
Individual bit saying that the polyhedron intersects the set of points satisfying the constraint, but it is not included in it.
- unsigned int `PPL_POLY_CON_RELATION_IS_INCLUDED`
Individual bit saying that the polyhedron is included in the set of points satisfying the constraint.
- unsigned int `PPL_POLY_CON_RELATION_SATURATES`
Individual bit saying that the polyhedron is included in the set of points saturating the constraint.
- unsigned int `PPL_POLY_GEN_RELATION_SUBSUMES`
Individual bit saying that adding the generator would not change the polyhedron.

11.4.1 Define Documentation

11.4.1.1 `#define PPL_DECLARE_AND_DOCUMENT_ASCII_DUMP_LOAD_FUNCTIONS(Type)`

Definition at line 837 of file `ppl_c.h`.

11.4.1.2 `#define PPL_DECLARE_AND_DOCUMENT_IO_FUNCTIONS(Type)`

Value:

```

PPL_DECLARE_AND_DOCUMENT_PRINT_FUNCTIONS (Type)          \
PPL_DECLARE_AND_DOCUMENT_ASCII_DUMP_LOAD_FUNCTIONS (Type) \

```

Definition at line 847 of file `ppl_c.h`.

11.4.1.3 #define PPL_DECLARE_AND_DOCUMENT_PRINT_FUNCTIONS(Type)

Definition at line 825 of file ppl_c.h.

11.4.1.4 #define PPL_DECLARE_ASCII_DUMP_LOAD_FUNCTIONS(Type)

Definition at line 811 of file ppl_c.h.

11.4.1.5 #define PPL_DECLARE_IO_FUNCTIONS(Type)

Value:

```
PPL_DECLARE_PRINT_FUNCTIONS (Type)          \
PPL_DECLARE_ASCII_DUMP_LOAD_FUNCTIONS (Type)
```

Definition at line 821 of file ppl_c.h.

11.4.1.6 #define PPL_DECLARE_PRINT_FUNCTIONS(Type)

Definition at line 800 of file ppl_c.h.

11.4.1.7 #define PPL_PROTO(protos) ()

Definition at line 162 of file ppl_c.h.

11.4.1.8 #define PPL_TYPE_DECLARATION(Type)

Value:

```
typedef struct ppl_##Type##_tag* ppl_##Type##_t;          \
typedef struct ppl_##Type##_tag const* ppl_const_##Type##_t;
```

Definition at line 582 of file ppl_c.h.

11.4.2 Function Documentation**11.4.2.1 int ppl_new_Generator_System_zero_dim_univ (ppl_Generator_System_t * pgs)**

Definition at line 1097 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.4.2.2 int ppl_new_Grid_Generator_System_zero_dim_univ (ppl_Grid_Generator_System_t * pgs)

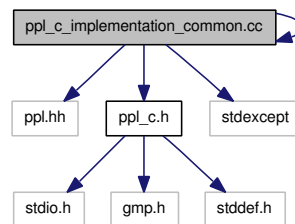
Definition at line 1690 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5 ppl_c_implementation_common.cc File Reference

```
#include "ppl_c_implementation_common.defs.hh"
#include "ppl.hh"
#include "ppl_c.h"
#include <stdexcept>
```

Include dependency graph for ppl_c_implementation_common.cc:



This graph shows which files directly or indirectly include this file:



Namespaces

- namespace [Parma_Polyhedra_Library](#)
- namespace [Parma_Polyhedra_Library::Interfaces](#)
- namespace [Parma_Polyhedra_Library::Interfaces::C](#)

Defines

- #define [FORMAT](#) "%u"
- #define [CONVERSION](#) (unsigned)

Typedefs

- typedef const char * [Parma_Polyhedra_Library::Interfaces::C::c_variable_output_function_type](#) ([ppl_dimension_type](#) var)

Functions

- `const char * Parma_Polyhedra_Library::Interfaces::C::c_variable_default_output_function (ppl_dimension_type var)`
- `void Parma_Polyhedra_Library::Interfaces::C::cxx_Variable_output_function (std::ostream &s, const Variable &v)`
- `void Parma_Polyhedra_Library::Interfaces::C::notify_error (enum ppl_enum_error_code code, const char *description)`
- `void Parma_Polyhedra_Library::Interfaces::C::reset_timeout ()`
- `void Parma_Polyhedra_Library::Interfaces::C::reset_deterministic_timeout ()`
- `int ppl_set_error_handler (error_handler_type h)`
- `int ppl_initialize (void)`

Initializes the Parma Polyhedra Library. This function must be called before any other function.

- `catch (const std::invalid_argument &e)`
- `catch (const std::domain_error &e)`
- `catch (const std::length_error &e)`
- `catch (const std::logic_error &e)`
- `catch (const std::overflow_error &e)`
- `catch (const std::runtime_error &e)`
- `catch (const std::exception &e)`
- `catch (timeout_exception &)`
- `catch (deterministic_timeout_exception &)`
- `catch (...)`
- `int ppl_finalize (void)`

Finalizes the Parma Polyhedra Library. This function must be called after any other function.

- `int ppl_set_timeout (unsigned time)`

Sets the timeout for computations whose completion could require an exponential amount of time.

- `int ppl_reset_timeout (void)`

Resets the timeout time so that the computation is not interrupted.

- `int ppl_set_deterministic_timeout (unsigned weight)`

Sets a threshold for computations whose completion could require an exponential amount of time.

- `int ppl_reset_deterministic_timeout (void)`

Resets the deterministic timeout so that the computation is not interrupted.

- `int ppl_set_rounding_for_PPL (void)`

Sets the FPU rounding mode so that the PPL abstractions based on floating point numbers work correctly.

- `int ppl_restore_pre_PPL_rounding (void)`

Sets the FPU rounding mode as it was before initialization of the PPL.

- `int ppl_irrational_precision (unsigned *p)`

*Writes to *p* the precision parameter used for irrational calculations.*

- `int ppl_set_irrational_precision (unsigned p)`

Sets the precision parameter used for irrational calculations.

- `int ppl_version_major (void)`
Returns the major number of the PPL version.
- `int ppl_version_minor (void)`
Returns the minor number of the PPL version.
- `int ppl_version_revision (void)`
Returns the revision number of the PPL version.
- `int ppl_version_beta (void)`
Returns the beta number of the PPL version.
- `int ppl_version (const char **p)`
*Writes to *p a pointer to a character string containing the PPL version.*
- `int ppl_banner (const char **p)`
*Writes to *p a pointer to a character string containing the PPL banner.*
- `int ppl_max_space_dimension (ppl_dimension_type *m)`
Writes to m the maximum space dimension this library can handle.
- `int ppl_not_a_dimension (ppl_dimension_type *m)`
Writes to m a value that does not designate a valid dimension.
- `int ppl_new_Coefficient (ppl_Coefficient_t *pc)`
- `int ppl_new_Coefficient_from_mpz_t (ppl_Coefficient_t *pc, mpz_t z)`
- `int ppl_new_Coefficient_from_Coefficient (ppl_Coefficient_t *pc, ppl_const_Coefficient_t c)`
- `int ppl_Coefficient_to_mpz_t (ppl_const_Coefficient_t c, mpz_t z)`
- `int ppl_delete_Coefficient (ppl_const_Coefficient_t c)`
- `int ppl_assign_Coefficient_from_mpz_t (ppl_Coefficient_t dst, mpz_t z)`
- `int ppl_assign_Coefficient_from_Coefficient (ppl_Coefficient_t dst, ppl_const_Coefficient_t src)`
- `int ppl_Coefficient_OK (ppl_const_Coefficient_t)`
- `int ppl_Coefficient_is_bounded (void)`
- `int ppl_Coefficient_min (mpz_t min)`
- `int ppl_Coefficient_max (mpz_t max)`
- `int ppl_new_Linear_Expression (ppl_Linear_Expression_t *ple)`
- `int ppl_new_Linear_Expression_with_dimension (ppl_Linear_Expression_t *ple, ppl_dimension_type d)`
- `int ppl_new_Linear_Expression_from_Linear_Expression (ppl_Linear_Expression_t *ple, ppl_const_Linear_Expression_t le)`
- `int ppl_delete_Linear_Expression (ppl_const_Linear_Expression_t le)`
- `int ppl_assign_Linear_Expression_from_Linear_Expression (ppl_Linear_Expression_t dst, ppl_const_Linear_Expression_t src)`
- `int ppl_Linear_Expression_add_to_coefficient (ppl_Linear_Expression_t le, ppl_dimension_type var, ppl_const_Coefficient_t n)`
- `int ppl_Linear_Expression_add_to_inhomogeneous (ppl_Linear_Expression_t le, ppl_const_Coefficient_t n)`
- `int ppl_add_Linear_Expression_to_Linear_Expression (ppl_Linear_Expression_t dst, ppl_const_Linear_Expression_t src)`

- int [ppl_subtract_Linear_Expression_from_Linear_Expression](#) (ppl_Linear_Expression_t dst, ppl_const_Linear_Expression_t src)
- int [ppl_multiply_Linear_Expression_by_Coefficient](#) (ppl_Linear_Expression_t le, ppl_const_Coefficient_t n)
- int [ppl_Linear_Expression_space_dimension](#) (ppl_const_Linear_Expression_t le, [ppl_dimension_type](#) *m)
- int [ppl_Linear_Expression_coefficient](#) (ppl_const_Linear_Expression_t le, [ppl_dimension_type](#) var, ppl_Coefficient_t n)
- int [ppl_Linear_Expression_inhomogeneous_term](#) (ppl_const_Linear_Expression_t le, ppl_Coefficient_t n)
- int [ppl_Linear_Expression_OK](#) (ppl_const_Linear_Expression_t le)
- int [ppl_Linear_Expression_is_zero](#) (ppl_const_Linear_Expression_t le)
- int [ppl_Linear_Expression_all_homogeneous_terms_are_zero](#) (ppl_const_Linear_Expression_t le)
- int [ppl_new_Constraint](#) (ppl_Constraint_t *pc, ppl_const_Linear_Expression_t le, enum [ppl_enum_Constraint_Type](#) t)
- int [ppl_new_Constraint_zero_dim_false](#) (ppl_Constraint_t *pc)
- int [ppl_new_Constraint_zero_dim_positivity](#) (ppl_Constraint_t *pc)
- int [ppl_new_Constraint_from_Constraint](#) (ppl_Constraint_t *pc, ppl_const_Constraint_t c)
- int [ppl_delete_Constraint](#) (ppl_const_Constraint_t le)
- int [ppl_assign_Constraint_from_Constraint](#) (ppl_Constraint_t dst, ppl_const_Constraint_t src)
- int [ppl_Constraint_space_dimension](#) (ppl_const_Constraint_t c, [ppl_dimension_type](#) *m)
- int [ppl_Constraint_type](#) (ppl_const_Constraint_t c)
- int [ppl_Constraint_coefficient](#) (ppl_const_Constraint_t c, [ppl_dimension_type](#) var, ppl_Coefficient_t n)
- int [ppl_Constraint_inhomogeneous_term](#) (ppl_const_Constraint_t c, ppl_Coefficient_t n)
- int [ppl_Constraint_OK](#) (ppl_const_Constraint_t c)
- int [ppl_new_Linear_Expression_from_Constraint](#) (ppl_Linear_Expression_t *ple, ppl_const_Constraint_t c)
- int [ppl_new_Constraint_System](#) (ppl_Constraint_System_t *pcs)
- int [ppl_new_Constraint_System_zero_dim_empty](#) (ppl_Constraint_System_t *pcs)
- int [ppl_new_Constraint_System_from_Constraint](#) (ppl_Constraint_System_t *pcs, ppl_const_Constraint_t c)
- int [ppl_new_Constraint_System_from_Constraint_System](#) (ppl_Constraint_System_t *pcs, ppl_const_Constraint_System_t cs)
- int [ppl_delete_Constraint_System](#) (ppl_const_Constraint_System_t cs)
- int [ppl_assign_Constraint_System_from_Constraint_System](#) (ppl_Constraint_System_t dst, ppl_const_Constraint_System_t src)
- int [ppl_Constraint_System_space_dimension](#) (ppl_const_Constraint_System_t cs, [ppl_dimension_type](#) *m)
- int [ppl_Constraint_System_empty](#) (ppl_const_Constraint_System_t cs)
- int [ppl_Constraint_System_has_strict_inequalities](#) (ppl_const_Constraint_System_t cs)
- int [ppl_Constraint_System_clear](#) (ppl_Constraint_System_t cs)
- int [ppl_Constraint_System_insert_Constraint](#) (ppl_Constraint_System_t cs, ppl_const_Constraint_t c)
- int [ppl_Constraint_System_OK](#) (ppl_const_Constraint_System_t cs)
- int [ppl_new_Constraint_System_const_iterator](#) (ppl_Constraint_System_const_iterator_t *pcit)
- int [ppl_new_Constraint_System_const_iterator_from_Constraint_System_const_iterator](#) (ppl_Constraint_System_const_iterator_t *pcit, ppl_const_Constraint_System_const_iterator_t cit)
- int [ppl_delete_Constraint_System_const_iterator](#) (ppl_const_Constraint_System_const_iterator_t cit)

- int [ppl_assign_Constraint_System_const_iterator_from_Constraint_System_const_iterator](#) (ppl_Constraint_System_const_iterator_t dst, ppl_const_Constraint_System_const_iterator_t src)
- int [ppl_Constraint_System_begin](#) (ppl_const_Constraint_System_t cs, ppl_Constraint_System_const_iterator_t cit)
- int [ppl_Constraint_System_end](#) (ppl_const_Constraint_System_t cs, ppl_Constraint_System_const_iterator_t cit)
- int [ppl_Constraint_System_const_iterator_dereference](#) (ppl_const_Constraint_System_const_iterator_t cit, ppl_const_Constraint_t *pc)
- int [ppl_Constraint_System_const_iterator_increment](#) (ppl_Constraint_System_const_iterator_t cit)
- int [ppl_Constraint_System_const_iterator_equal_test](#) (ppl_const_Constraint_System_const_iterator_t x, ppl_const_Constraint_System_const_iterator_t y)
- int [ppl_new_Generator](#) (ppl_Generator_t *pg, ppl_const_Linear_Expression_t le, enum [ppl_enum_Generator_Type](#) t, ppl_const_Coefficient_t d)
- int [ppl_new_Generator_zero_dim_point](#) (ppl_Generator_t *pg)
- int [ppl_new_Generator_zero_dim_closure_point](#) (ppl_Generator_t *pg)
- int [ppl_new_Generator_from_Generator](#) (ppl_Generator_t *pg, ppl_const_Generator_t g)
- int [ppl_delete_Generator](#) (ppl_const_Generator_t le)
- int [ppl_assign_Generator_from_Generator](#) (ppl_Generator_t dst, ppl_const_Generator_t src)
- int [ppl_Generator_space_dimension](#) (ppl_const_Generator_t g, [ppl_dimension_type](#) *m)
- int [ppl_Generator_type](#) (ppl_const_Generator_t g)
- int [ppl_Generator_coefficient](#) (ppl_const_Generator_t g, [ppl_dimension_type](#) var, ppl_Coefficient_t n)
- int [ppl_Generator_divisor](#) (ppl_const_Generator_t g, ppl_Coefficient_t n)
- int [ppl_Generator_OK](#) (ppl_const_Generator_t g)
- int [ppl_new_Linear_Expression_from_Generator](#) (ppl_Linear_Expression_t *ple, ppl_const_Generator_t g)
- int [ppl_new_Generator_System](#) (ppl_Generator_System_t *pgs)
- int [ppl_new_Generator_System_zero_dim_univ](#) (ppl_Generator_System_t *pgs)
- int [ppl_new_Generator_System_from_Generator](#) (ppl_Generator_System_t *pgs, ppl_const_Generator_t g)
- int [ppl_new_Generator_System_from_Generator_System](#) (ppl_Generator_System_t *pgs, ppl_const_Generator_System_t gs)
- int [ppl_delete_Generator_System](#) (ppl_const_Generator_System_t gs)
- int [ppl_assign_Generator_System_from_Generator_System](#) (ppl_Generator_System_t dst, ppl_const_Generator_System_t src)
- int [ppl_Generator_System_space_dimension](#) (ppl_const_Generator_System_t gs, [ppl_dimension_type](#) *m)
- int [ppl_Generator_System_empty](#) (ppl_const_Generator_System_t gs)
- int [ppl_Generator_System_clear](#) (ppl_Generator_System_t gs)
- int [ppl_Generator_System_insert_Generator](#) (ppl_Generator_System_t gs, ppl_const_Generator_t g)
- int [ppl_Generator_System_OK](#) (ppl_const_Generator_System_t gs)
- int [ppl_new_Generator_System_const_iterator](#) (ppl_Generator_System_const_iterator_t *pgit)
- int [ppl_new_Generator_System_const_iterator_from_Generator_System_const_iterator](#) (ppl_Generator_System_const_iterator_t *pgit, ppl_const_Generator_System_const_iterator_t git)
- int [ppl_delete_Generator_System_const_iterator](#) (ppl_const_Generator_System_const_iterator_t git)
- int [ppl_assign_Generator_System_const_iterator_from_Generator_System_const_iterator](#) (ppl_Generator_System_const_iterator_t dst, ppl_const_Generator_System_const_iterator_t src)
- int [ppl_Generator_System_begin](#) (ppl_const_Generator_System_t gs, ppl_Generator_System_const_iterator_t git)

- int [ppl_Generator_System_end](#) (ppl_const_Generator_System_t gs, ppl_Generator_System_const_iterator_t git)
- int [ppl_Generator_System_const_iterator_dereference](#) (ppl_const_Generator_System_const_iterator_t git, ppl_const_Generator_t *pg)
- int [ppl_Generator_System_const_iterator_increment](#) (ppl_Generator_System_const_iterator_t git)
- int [ppl_Generator_System_const_iterator_equal_test](#) (ppl_const_Generator_System_const_iterator_t x, ppl_const_Generator_System_const_iterator_t y)
- int [ppl_new_Congruence](#) (ppl_Congruence_t *pc, ppl_const_Linear_Expression_t le, ppl_const_Coefficient_t m)
- int [ppl_new_Congruence_zero_dim_false](#) (ppl_Congruence_t *pc)
- int [ppl_new_Congruence_zero_dim_integrality](#) (ppl_Congruence_t *pc)
- int [ppl_new_Congruence_from_Congruence](#) (ppl_Congruence_t *pc, ppl_const_Congruence_t c)
- int [ppl_delete_Congruence](#) (ppl_const_Congruence_t le)
- int [ppl_assign_Congruence_from_Congruence](#) (ppl_Congruence_t dst, ppl_const_Congruence_t src)
- int [ppl_Congruence_space_dimension](#) (ppl_const_Congruence_t c, [ppl_dimension_type](#) *m)
- int [ppl_Congruence_coefficient](#) (ppl_const_Congruence_t c, [ppl_dimension_type](#) var, ppl_Coefficient_t n)
- int [ppl_Congruence_inhomogeneous_term](#) (ppl_const_Congruence_t c, ppl_Coefficient_t n)
- int [ppl_Congruence_modulus](#) (ppl_const_Congruence_t c, ppl_Coefficient_t m)
- int [ppl_Congruence_OK](#) (ppl_const_Congruence_t c)
- int [ppl_new_Linear_Expression_from_Congruence](#) (ppl_Linear_Expression_t *ple, ppl_const_Congruence_t c)
- int [ppl_new_Congruence_System](#) (ppl_Congruence_System_t *pcs)
- int [ppl_new_Congruence_System_zero_dim_empty](#) (ppl_Congruence_System_t *pcs)
- int [ppl_new_Congruence_System_from_Congruence](#) (ppl_Congruence_System_t *pcs, ppl_const_Congruence_t c)
- int [ppl_new_Congruence_System_from_Congruence_System](#) (ppl_Congruence_System_t *pcs, ppl_const_Congruence_System_t cs)
- int [ppl_delete_Congruence_System](#) (ppl_const_Congruence_System_t cs)
- int [ppl_assign_Congruence_System_from_Congruence_System](#) (ppl_Congruence_System_t dst, ppl_const_Congruence_System_t src)
- int [ppl_Congruence_System_space_dimension](#) (ppl_const_Congruence_System_t cs, [ppl_dimension_type](#) *m)
- int [ppl_Congruence_System_empty](#) (ppl_const_Congruence_System_t cs)
- int [ppl_Congruence_System_clear](#) (ppl_Congruence_System_t cs)
- int [ppl_Congruence_System_insert_Congruence](#) (ppl_Congruence_System_t cs, ppl_const_Congruence_t c)
- int [ppl_Congruence_System_OK](#) (ppl_const_Congruence_System_t cs)
- int [ppl_new_Congruence_System_const_iterator](#) (ppl_Congruence_System_const_iterator_t *pcit)
- int [ppl_new_Congruence_System_const_iterator_from_Congruence_System_const_iterator](#) (ppl_Congruence_System_const_iterator_t *pcit, ppl_const_Congruence_System_const_iterator_t cit)
- int [ppl_delete_Congruence_System_const_iterator](#) (ppl_const_Congruence_System_const_iterator_t cit)
- int [ppl_assign_Congruence_System_const_iterator_from_Congruence_System_const_iterator](#) (ppl_Congruence_System_const_iterator_t dst, ppl_const_Congruence_System_const_iterator_t src)
- int [ppl_Congruence_System_begin](#) (ppl_const_Congruence_System_t cs, ppl_Congruence_System_const_iterator_t cit)
- int [ppl_Congruence_System_end](#) (ppl_const_Congruence_System_t cs, ppl_Congruence_System_const_iterator_t cit)

- int [ppl_Congruence_System_const_iterator_dereference](#) (ppl_const_Congruence_System_const_iterator_t cit, ppl_const_Congruence_t *pc)
- int [ppl_Congruence_System_const_iterator_increment](#) (ppl_Congruence_System_const_iterator_t cit)
- int [ppl_Congruence_System_const_iterator_equal_test](#) (ppl_const_Congruence_System_const_iterator_t x, ppl_const_Congruence_System_const_iterator_t y)
- int [ppl_new_Grid_Generator](#) (ppl_Grid_Generator_t *pg, ppl_const_Linear_Expression_t le, enum [ppl_enum_Grid_Generator_Type](#) t, ppl_const_Coefficient_t d)
- int [ppl_new_Grid_Generator_zero_dim_point](#) (ppl_Grid_Generator_t *pg)
- int [ppl_new_Grid_Generator_from_Grid_Generator](#) (ppl_Grid_Generator_t *pg, ppl_const_Grid_Generator_t g)
- int [ppl_delete_Grid_Generator](#) (ppl_const_Grid_Generator_t le)
- int [ppl_assign_Grid_Generator_from_Grid_Generator](#) (ppl_Grid_Generator_t dst, ppl_const_Grid_Generator_t src)
- int [ppl_Grid_Generator_space_dimension](#) (ppl_const_Grid_Generator_t g, [ppl_dimension_type](#) *m)
- int [ppl_Grid_Generator_type](#) (ppl_const_Grid_Generator_t g)
- int [ppl_Grid_Generator_coefficient](#) (ppl_const_Grid_Generator_t g, [ppl_dimension_type](#) var, ppl_Coefficient_t n)
- int [ppl_Grid_Generator_divisor](#) (ppl_const_Grid_Generator_t g, ppl_Coefficient_t n)
- int [ppl_Grid_Generator_OK](#) (ppl_const_Grid_Generator_t g)
- int [ppl_new_Grid_Generator_System](#) (ppl_Grid_Generator_System_t *pgs)
- int [ppl_new_Grid_Generator_System_zero_dim_univ](#) (ppl_Grid_Generator_System_t *pgs)
- int [ppl_new_Grid_Generator_System_from_Grid_Generator](#) (ppl_Grid_Generator_System_t *pgs, ppl_const_Grid_Generator_t g)
- int [ppl_new_Grid_Generator_System_from_Grid_Generator_System](#) (ppl_Grid_Generator_System_t *pgs, ppl_const_Grid_Generator_System_t gs)
- int [ppl_delete_Grid_Generator_System](#) (ppl_const_Grid_Generator_System_t gs)
- int [ppl_assign_Grid_Generator_System_from_Grid_Generator_System](#) (ppl_Grid_Generator_System_t dst, ppl_const_Grid_Generator_System_t src)
- int [ppl_Grid_Generator_System_space_dimension](#) (ppl_const_Grid_Generator_System_t gs, [ppl_dimension_type](#) *m)
- int [ppl_Grid_Generator_System_empty](#) (ppl_const_Grid_Generator_System_t gs)
- int [ppl_Grid_Generator_System_clear](#) (ppl_Grid_Generator_System_t gs)
- int [ppl_Grid_Generator_System_insert_Grid_Generator](#) (ppl_Grid_Generator_System_t gs, ppl_const_Grid_Generator_t g)
- int [ppl_Grid_Generator_System_OK](#) (ppl_const_Grid_Generator_System_t gs)
- int [ppl_new_Grid_Generator_System_const_iterator](#) (ppl_Grid_Generator_System_const_iterator_t *pgit)
- int [ppl_new_Grid_Generator_System_const_iterator_from_Grid_Generator_System_const_iterator](#) (ppl_Grid_Generator_System_const_iterator_t *pgit, ppl_const_Grid_Generator_System_const_iterator_t git)
- int [ppl_delete_Grid_Generator_System_const_iterator](#) (ppl_const_Grid_Generator_System_const_iterator_t git)
- int [ppl_assign_Grid_Generator_System_const_iterator_from_Grid_Generator_System_const_iterator](#) (ppl_Grid_Generator_System_const_iterator_t dst, ppl_const_Grid_Generator_System_const_iterator_t src)
- int [ppl_Grid_Generator_System_begin](#) (ppl_const_Grid_Generator_System_t gs, ppl_Grid_Generator_System_const_iterator_t git)
- int [ppl_Grid_Generator_System_end](#) (ppl_const_Grid_Generator_System_t gs, ppl_Grid_Generator_System_const_iterator_t git)
- int [ppl_Grid_Generator_System_const_iterator_dereference](#) (ppl_const_Grid_Generator_System_const_iterator_t git, ppl_const_Grid_Generator_t *pg)

- int [ppl_Grid_Generator_System_const_iterator_increment](#) (ppl_Grid_Generator_System_const_iterator_t git)
- int [ppl_Grid_Generator_System_const_iterator_equal_test](#) (ppl_const_Grid_Generator_System_const_iterator_t x, ppl_const_Grid_Generator_System_const_iterator_t y)
- int [ppl_new_MIP_Problem_from_space_dimension](#) (ppl_MIP_Problem_t *pmip, [ppl_dimension_type](#) d)
- int [ppl_new_MIP_Problem](#) (ppl_MIP_Problem_t *pmip, [ppl_dimension_type](#) d, ppl_const_Constraint_System_t cs, ppl_const_Linear_Expression_t le, int m)
- int [ppl_new_MIP_Problem_from_MIP_Problem](#) (ppl_MIP_Problem_t *pmip, ppl_const_MIP_Problem_t mip)
- int [ppl_delete_MIP_Problem](#) (ppl_const_MIP_Problem_t mip)
- int [ppl_assign_MIP_Problem_from_MIP_Problem](#) (ppl_MIP_Problem_t dst, ppl_const_MIP_Problem_t src)
- int [ppl_MIP_Problem_space_dimension](#) (ppl_const_MIP_Problem_t mip, [ppl_dimension_type](#) *m)
- int [ppl_MIP_Problem_number_of_integer_space_dimensions](#) (ppl_const_MIP_Problem_t mip, [ppl_dimension_type](#) *m)
- int [ppl_MIP_Problem_integer_space_dimensions](#) (ppl_const_MIP_Problem_t mip, [ppl_dimension_type](#) ds[])
- int [ppl_MIP_Problem_number_of_constraints](#) (ppl_const_MIP_Problem_t mip, [ppl_dimension_type](#) *m)
- int [ppl_MIP_Problem_constraint_at_index](#) (ppl_const_MIP_Problem_t mip, [ppl_dimension_type](#) i, ppl_const_Constraint_t *pc)
- int [ppl_MIP_Problem_objective_function](#) (ppl_const_MIP_Problem_t mip, ppl_const_Linear_Expression_t *ple)
- int [ppl_MIP_Problem_optimization_mode](#) (ppl_const_MIP_Problem_t mip)
- int [ppl_MIP_Problem_clear](#) (ppl_MIP_Problem_t mip)
- int [ppl_MIP_Problem_add_space_dimensions_and_embed](#) (ppl_MIP_Problem_t mip, [ppl_dimension_type](#) d)
- int [ppl_MIP_Problem_add_to_integer_space_dimensions](#) (ppl_MIP_Problem_t mip, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_MIP_Problem_add_constraint](#) (ppl_MIP_Problem_t mip, ppl_const_Constraint_t c)
- int [ppl_MIP_Problem_add_constraints](#) (ppl_MIP_Problem_t mip, ppl_const_Constraint_System_t cs)
- int [ppl_MIP_Problem_set_objective_function](#) (ppl_MIP_Problem_t mip, ppl_const_Linear_Expression_t le)
- int [ppl_MIP_Problem_set_optimization_mode](#) (ppl_MIP_Problem_t mip, int mode)
- int [ppl_MIP_Problem_is_satisfiable](#) (ppl_const_MIP_Problem_t mip)
- int [ppl_MIP_Problem_solve](#) (ppl_const_MIP_Problem_t mip)
- int [ppl_MIP_Problem_evaluate_objective_function](#) (ppl_const_MIP_Problem_t mip, ppl_const_Generator_t g, ppl_Coefficient_t num, ppl_Coefficient_t den)
- int [ppl_MIP_Problem_feasible_point](#) (ppl_const_MIP_Problem_t mip, ppl_const_Generator_t *pg)
- int [ppl_MIP_Problem_optimizing_point](#) (ppl_const_MIP_Problem_t mip, ppl_const_Generator_t *pg)
- int [ppl_MIP_Problem_optimal_value](#) (ppl_const_MIP_Problem_t mip, ppl_Coefficient_t num, ppl_Coefficient_t den)
- int [ppl_MIP_Problem_get_control_parameter](#) (ppl_const_MIP_Problem_t mip, int name)
- int [ppl_MIP_Problem_set_control_parameter](#) (ppl_MIP_Problem_t mip, int value)
- int [ppl_MIP_Problem_OK](#) (ppl_const_MIP_Problem_t mip)
- int [ppl_MIP_Problem_total_memory_in_bytes](#) (ppl_const_MIP_Problem_t mip, size_t *sz)
- int [ppl_MIP_Problem_external_memory_in_bytes](#) (ppl_const_MIP_Problem_t mip, size_t *sz)
- int [ppl_new_PIP_Problem_from_space_dimension](#) (ppl_PIP_Problem_t *ppip, [ppl_dimension_type](#) d)

- int [ppl_new_PIP_Problem_from_PIP_Problem](#) (ppl_PIP_Problem_t *dpip, ppl_const_PIP_Problem_t pip)
- int [ppl_new_PIP_Problem_from_constraints](#) (ppl_PIP_Problem_t *ppip, [ppl_dimension_type](#) d, ppl_Constraint_System_const_iterator_t first, ppl_Constraint_System_const_iterator_t last, size_t n, [ppl_dimension_type](#) ds[])
- int [ppl_assign_PIP_Problem_from_PIP_Problem](#) (ppl_PIP_Problem_t dst, ppl_const_PIP_Problem_t src)
- int [ppl_delete_PIP_Problem](#) (ppl_const_PIP_Problem_t pip)
- int [ppl_PIP_Problem_space_dimension](#) (ppl_const_PIP_Problem_t pip, [ppl_dimension_type](#) *m)
- int [ppl_PIP_Problem_number_of_parameter_space_dimensions](#) (ppl_const_PIP_Problem_t pip, [ppl_dimension_type](#) *m)
- int [ppl_PIP_Problem_parameter_space_dimensions](#) (ppl_const_PIP_Problem_t pip, [ppl_dimension_type](#) ds[])
- int [ppl_PIP_Problem_number_of_constraints](#) (ppl_const_PIP_Problem_t pip, [ppl_dimension_type](#) *m)
- int [ppl_PIP_Problem_constraint_at_index](#) (ppl_const_PIP_Problem_t pip, [ppl_dimension_type](#) i, ppl_const_Constraint_t *pc)
- int [ppl_PIP_Problem_clear](#) (ppl_PIP_Problem_t pip)
- int [ppl_PIP_Problem_add_space_dimensions_and_embed](#) (ppl_PIP_Problem_t pip, [ppl_dimension_type](#) pip_vars, [ppl_dimension_type](#) pip_params)
- int [ppl_PIP_Problem_add_to_parameter_space_dimensions](#) (ppl_PIP_Problem_t pip, [ppl_dimension_type](#) ds[], size_t n)
- int [ppl_PIP_Problem_add_constraint](#) (ppl_PIP_Problem_t pip, ppl_const_Constraint_t c)
- int [ppl_PIP_Problem_add_constraints](#) (ppl_PIP_Problem_t pip, ppl_const_Constraint_System_t cs)
- int [ppl_PIP_Problem_is_satisfiable](#) (ppl_const_PIP_Problem_t pip)
- int [ppl_PIP_Problem_solve](#) (ppl_const_PIP_Problem_t pip)
- int [ppl_PIP_Problem_solution](#) (ppl_const_PIP_Problem_t pip, ppl_const_PIP_Tree_Node_t *ppip_tree)
- int [ppl_PIP_Problem_optimizing_solution](#) (ppl_const_PIP_Problem_t pip, ppl_const_PIP_Tree_Node_t *ppip_tree)
- int [ppl_PIP_Problem_OK](#) (ppl_const_PIP_Problem_t pip)
- int [ppl_PIP_Problem_get_control_parameter](#) (ppl_const_PIP_Problem_t pip, int name)
- int [ppl_PIP_Problem_set_control_parameter](#) (ppl_PIP_Problem_t pip, int value)
- int [ppl_PIP_Problem_get_big_parameter_dimension](#) (ppl_const_PIP_Problem_t pip, [ppl_dimension_type](#) *pd)
- int [ppl_PIP_Problem_set_big_parameter_dimension](#) (ppl_PIP_Problem_t pip, [ppl_dimension_type](#) d)
- int [ppl_PIP_Problem_total_memory_in_bytes](#) (ppl_const_PIP_Problem_t pip, size_t *sz)
- int [ppl_PIP_Problem_external_memory_in_bytes](#) (ppl_const_PIP_Problem_t pip, size_t *sz)
- int [ppl_PIP_Tree_Node_as_solution](#) (ppl_const_PIP_Tree_Node_t spip_tree, ppl_const_PIP_Solution_Node_t *dpip_tree)
- int [ppl_PIP_Tree_Node_as_decision](#) (ppl_const_PIP_Tree_Node_t spip_tree, ppl_const_PIP_Decision_Node_t *dpip_tree)
- int [ppl_PIP_Tree_Node_get_constraints](#) (ppl_const_PIP_Tree_Node_t pip_tree, ppl_const_Constraint_System_t *pcs)
- int [ppl_PIP_Tree_Node_OK](#) (ppl_const_PIP_Tree_Node_t pip_tree)
- int [ppl_PIP_Tree_Node_number_of_artificials](#) (ppl_const_PIP_Tree_Node_t pip_tree, [ppl_dimension_type](#) *m)
- int [ppl_PIP_Tree_Node_begin](#) (ppl_const_PIP_Tree_Node_t pip_tree, ppl_Artificial_Parameter_Sequence_const_iterator_t pit)
- int [ppl_PIP_Tree_Node_end](#) (ppl_const_PIP_Tree_Node_t pip_tree, ppl_Artificial_Parameter_Sequence_const_iterator_t pit)

- int [ppl_PIP_Solution_Node_get_parametric_values](#) (ppl_const_PIP_Solution_Node_t pip_sol, [ppl_dimension_type](#) var, ppl_const_Linear_Expression_t *le)
- int [ppl_PIP_Solution_Node_OK](#) (ppl_const_PIP_Solution_Node_t pip_sol)
- int [ppl_PIP_Decision_Node_OK](#) (ppl_const_PIP_Decision_Node_t pip_dec)
- int [ppl_PIP_Decision_Node_get_child_node](#) (ppl_const_PIP_Decision_Node_t pip_dec, int b, ppl_const_PIP_Tree_Node_t *pip_tree)
- int [ppl_Artificial_Parameter_get_Linear_Expression](#) (ppl_const_Artificial_Parameter_t ap, ppl_Linear_Expression_t le)
- int [ppl_Artificial_Parameter_coefficient](#) (ppl_const_Artificial_Parameter_t ap, [ppl_dimension_type](#) var, ppl_Coefficient_t n)
- int [ppl_Artificial_Parameter_inhomogeneous_term](#) (ppl_const_Artificial_Parameter_t ap, ppl_Coefficient_t n)
- int [ppl_Artificial_Parameter_denominator](#) (ppl_const_Artificial_Parameter_t ap, ppl_Coefficient_t n)
- int [ppl_new_Artificial_Parameter_Sequence_const_iterator](#) (ppl_Artificial_Parameter_Sequence_const_iterator_t *papit)
- int [ppl_new_Artificial_Parameter_Sequence_const_iterator_from_Artificial_Parameter_Sequence_const_iterator](#) (ppl_Artificial_Parameter_Sequence_const_iterator_t *papit, ppl_const_Artificial_Parameter_Sequence_const_iterator_t apit)
- int [ppl_delete_Artificial_Parameter_Sequence_const_iterator](#) (ppl_const_Artificial_Parameter_Sequence_const_iterator_t apit)
- int [ppl_assign_Artificial_Parameter_Sequence_const_iterator_from_Artificial_Parameter_Sequence_const_iterator](#) (ppl_Artificial_Parameter_Sequence_const_iterator_t dst, ppl_const_Artificial_Parameter_Sequence_const_iterator_t src)
- int [ppl_Artificial_Parameter_Sequence_const_iterator_dereference](#) (ppl_const_Artificial_Parameter_Sequence_const_iterator_t apit, ppl_const_Artificial_Parameter_t *pap)
- int [ppl_Artificial_Parameter_Sequence_const_iterator_increment](#) (ppl_Artificial_Parameter_Sequence_const_iterator_t apit)
- int [ppl_Artificial_Parameter_Sequence_const_iterator_equal_test](#) (ppl_const_Artificial_Parameter_Sequence_const_iterator_t x, ppl_const_Artificial_Parameter_Sequence_const_iterator_t y)
- int [ppl_io_print_variable](#) ([ppl_dimension_type](#) var)

Pretty-prints var to stdout.

- int [ppl_io_fprint_variable](#) (FILE *stream, [ppl_dimension_type](#) var)

Pretty-prints var to the given output stream.

- int [ppl_io_asprint_variable](#) (char **strp, [ppl_dimension_type](#) var)

Pretty-prints var to a malloc-allocated string, a pointer to which is returned via strp.

- char * [ppl_io_wrap_string](#) (const char *src, unsigned indent_depth, unsigned preferred_first_line_length, unsigned preferred_line_length)

Utility function for the wrapping of lines of text.

- int [ppl_io_set_variable_output_function](#) ([ppl_io_variable_output_function_type](#) *p)

Sets the output function to be used for printing variables to p.

- int [ppl_io_get_variable_output_function](#) ([ppl_io_variable_output_function_type](#) **pp)

Writes a pointer to the current variable output function to pp.

Variables

- `error_handler_type Parma_Polyhedra_Library::Interfaces::C::user_error_handler = 0`
- `ppl_io_variable_output_function_type * Parma_Polyhedra_Library::Interfaces::C::c_variable_output_function`
- `Variable::output_function_type * Parma_Polyhedra_Library::Interfaces::C::saved_cxx_Variable_output_function`
- unsigned int `PPL_POLY_CON_RELATION_IS_DISJOINT`
Individual bit saying that the polyhedron and the set of points satisfying the constraint are disjoint.
- unsigned int `PPL_POLY_CON_RELATION_STRICTLY_INTERSECTS`
Individual bit saying that the polyhedron intersects the set of points satisfying the constraint, but it is not included in it.
- unsigned int `PPL_POLY_CON_RELATION_IS_INCLUDED`
Individual bit saying that the polyhedron is included in the set of points satisfying the constraint.
- unsigned int `PPL_POLY_CON_RELATION_SATURATES`
Individual bit saying that the polyhedron is included in the set of points saturating the constraint.
- unsigned int `PPL_POLY_GEN_RELATION_SUBSUMES`
Individual bit saying that adding the generator would not change the polyhedron.
- unsigned int `PPL_COMPLEXITY_CLASS_POLYNOMIAL`
Code of the worst-case polynomial complexity class.
- unsigned int `PPL_COMPLEXITY_CLASS_SIMPLEX`
Code of the worst-case exponential but typically polynomial complexity class.
- unsigned int `PPL_COMPLEXITY_CLASS_ANY`
Code of the universal complexity class.
- int `PPL_MIP_PROBLEM_STATUS_UNFEASIBLE`
- int `PPL_MIP_PROBLEM_STATUS_UNBOUNDED`
- int `PPL_MIP_PROBLEM_STATUS_OPTIMIZED`
- int `PPL_MIP_PROBLEM_CONTROL_PARAMETER_NAME_PRICING`
- int `PPL_MIP_PROBLEM_CONTROL_PARAMETER_PRICING_STEEPEST_EDGE_FLOAT`
- int `PPL_MIP_PROBLEM_CONTROL_PARAMETER_PRICING_STEEPEST_EDGE_EXACT`
- int `PPL_MIP_PROBLEM_CONTROL_PARAMETER_PRICING_TEXTBOOK`
- int `PPL_PIP_PROBLEM_STATUS_UNFEASIBLE`
- int `PPL_PIP_PROBLEM_STATUS_OPTIMIZED`
- int `PPL_PIP_PROBLEM_CONTROL_PARAMETER_NAME_CUTTING_STRATEGY`
- int `PPL_PIP_PROBLEM_CONTROL_PARAMETER_CUTTING_STRATEGY_FIRST`
- int `PPL_PIP_PROBLEM_CONTROL_PARAMETER_CUTTING_STRATEGY_DEEPEST`
- int `PPL_PIP_PROBLEM_CONTROL_PARAMETER_CUTTING_STRATEGY_ALL`
- int `PPL_PIP_PROBLEM_CONTROL_PARAMETER_NAME_PIVOT_ROW_STRATEGY`
- int `PPL_PIP_PROBLEM_CONTROL_PARAMETER_PIVOT_ROW_STRATEGY_FIRST`
- int `PPL_PIP_PROBLEM_CONTROL_PARAMETER_PIVOT_ROW_STRATEGY_MAX_COLUMN`
- int `PPL_OPTIMIZATION_MODE_MINIMIZATION`
- int `PPL_OPTIMIZATION_MODE_MAXIMIZATION`

11.5.1 Define Documentation

11.5.1.1 `#define` `CONVERSION` (unsigned)

Referenced by `Parma_Polyhedra_Library::Interfaces::C::c_variable_default_output_function()`.

11.5.1.2 `#define` `FORMAT` `"%u"`

Referenced by `Parma_Polyhedra_Library::Interfaces::C::c_variable_default_output_function()`.

11.5.2 Function Documentation

11.5.2.1 `catch` (...)

Definition at line 2677 of file `ppl_c_implementation_common.cc`.

11.5.2.2 `catch` (deterministic_timeout_exception &)

Definition at line 2677 of file `ppl_c_implementation_common.cc`.

11.5.2.3 `catch` (timeout_exception &)

Definition at line 2677 of file `ppl_c_implementation_common.cc`.

11.5.2.4 `catch` (const std::exception & e)

Definition at line 2677 of file `ppl_c_implementation_common.cc`.

11.5.2.5 `catch` (const std::runtime_error & e)

Definition at line 2677 of file `ppl_c_implementation_common.cc`.

11.5.2.6 `catch` (const std::overflow_error & e)

Definition at line 2677 of file `ppl_c_implementation_common.cc`.

11.5.2.7 catch (const std::logic_error & e)

Definition at line 2677 of file ppl_c_implementation_common.cc.

11.5.2.8 catch (const std::length_error & e)

Definition at line 2677 of file ppl_c_implementation_common.cc.

11.5.2.9 catch (const std::domain_error & e)

Definition at line 2677 of file ppl_c_implementation_common.cc.

11.5.2.10 catch (const std::invalid_argument & e)

Definition at line 2677 of file ppl_c_implementation_common.cc.

11.5.2.11 int ppl_add_Linear_Expression_to_Linear_Expression (ppl_Linear_Expression_t dst, ppl_const_Linear_Expression_t src) [related]

Definition at line 557 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.12 int ppl_Artificial_Parameter_coefficient (ppl_const_Artificial_Parameter_t ap, ppl_dimension_type var, ppl_Coefficient_t n) [related]

Definition at line 2488 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.13 int ppl_Artificial_Parameter_denominator (ppl_const_Artificial_Parameter_t ap, ppl_Coefficient_t n) [related]

Definition at line 2510 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.14 `int ppl_Artificial_Parameter_get_Linear_Expression (ppl_const_Artificial_Parameter_t ap, ppl_Linear_Expression_t le)` [**related**]

Definition at line 2478 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.15 `int ppl_Artificial_Parameter_inhomogeneous_term (ppl_const_Artificial_Parameter_t ap, ppl_Coefficient_t n)`

Definition at line 2500 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.16 `int ppl_Artificial_Parameter_Sequence_const_iterator_dereference (ppl_const_Artificial_Parameter_Sequence_const_iterator_t apit, ppl_const_Artificial_Parameter_t * pap)` [**related**]

Definition at line 2561 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.17 `int ppl_Artificial_Parameter_Sequence_const_iterator_equal_test (ppl_const_Artificial_Parameter_Sequence_const_iterator_t x, ppl_const_Artificial_Parameter_Sequence_const_iterator_t y)` [**related**]

Definition at line 2581 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.18 `int ppl_Artificial_Parameter_Sequence_const_iterator_increment (ppl_Artificial_Parameter_Sequence_const_iterator_t apit)` [**related**]

Definition at line 2572 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.19 `int ppl_assign_Artificial_Parameter_Sequence_const_iterator_from_Artificial_Parameter_Sequence_const_iterator (ppl_Artificial_Parameter_Sequence_const_iterator_t dst, ppl_const_Artificial_Parameter_Sequence_const_iterator_t src)` [**related**]

Definition at line 2550 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.20 int ppl_assign_Coefficient_from_Coefficient (ppl_Coefficient_t *dst*, ppl_const_Coefficient_t *src*) [**related**]

Definition at line 442 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.21 int ppl_assign_Coefficient_from_mpz_t (ppl_Coefficient_t *dst*, mpz_t *z*) [**related**]

Definition at line 434 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::reinterpret_mpz_class(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.22 int ppl_assign_Congruence_from_Congruence (ppl_Congruence_t *dst*, ppl_const_Congruence_t *src*) [**related**]

Definition at line 1311 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.23 int ppl_assign_Congruence_System_const_iterator_from_Congruence_System_const_iterator (ppl_Congruence_System_const_iterator_t *dst*, ppl_const_Congruence_System_const_iterator_t *src*) [**related**]

Definition at line 1496 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.24 int ppl_assign_Congruence_System_from_Congruence_System (ppl_Congruence_System_t *dst*, ppl_const_Congruence_System_t *src*) [**related**]

Definition at line 1419 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.25 `int ppl_assign_Constraint_from_Constraint (ppl_Constraint_t dst,
ppl_const_Constraint_t src) [related]`

Definition at line 697 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.26 `int ppl_assign_Constraint_System_const_iterator_from_Constraint_System_const_iterator (ppl_Constraint_System_const_iterator_t dst,
ppl_const_Constraint_System_const_iterator_t src) [related]`

Definition at line 895 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.27 `int ppl_assign_Constraint_System_from_Constraint_System (ppl_Constraint_System_t dst,
ppl_const_Constraint_System_t src) [related]`

Definition at line 810 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.28 `int ppl_assign_Generator_from_Generator (ppl_Generator_t dst,
ppl_const_Generator_t src) [related]`

Definition at line 1017 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.29 `int ppl_assign_Generator_System_const_iterator_from_Generator_System_const_iterator (ppl_Generator_System_const_iterator_t dst,
ppl_const_Generator_System_const_iterator_t src) [related]`

Definition at line 1206 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.30 `int ppl_assign_Generator_System_from_Generator_System (ppl_Generator_System_t dst, ppl_const_Generator_System_t src) [related]`

Definition at line 1130 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.31 `int ppl_assign_Grid_Generator_from_Grid_Generator (ppl_Grid_Generator_t dst, ppl_const_Grid_Generator_t src) [related]`

Definition at line 1609 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.32 `int ppl_assign_Grid_Generator_System_const_iterator_from_Grid_Generator_System_const_iterator (ppl_Grid_Generator_System_const_iterator_t dst, ppl_const_Grid_Generator_System_const_iterator_t src) [related]`

Definition at line 1802 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.33 `int ppl_assign_Grid_Generator_System_from_Grid_Generator_System (ppl_Grid_Generator_System_t dst, ppl_const_Grid_Generator_System_t src) [related]`

Definition at line 1724 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.34 `int ppl_assign_Linear_Expression_from_Linear_Expression (ppl_Linear_Expression_t dst, ppl_const_Linear_Expression_t src) [related]`

Definition at line 526 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.35 `int ppl_assign_MIP_Problem_from_MIP_Problem (ppl_MIP_Problem_t dst, ppl_const_MIP_Problem_t src) [related]`

Definition at line 1902 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.36 `int ppl_assign_PIP_Problem_from_PIP_Problem (ppl_PIP_Problem_t dst, ppl_const_PIP_Problem_t src) [related]`

Definition at line 2180 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.37 `int ppl_Coefficient_is_bounded (void) [related]`

Definition at line 458 of file `ppl_c_implementation_common.cc`.

11.5.2.38 `int ppl_Coefficient_max (mpz_t max) [related]`

Definition at line 477 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::reinterpret_mpz_class()`.

11.5.2.39 `int ppl_Coefficient_min (mpz_t min) [related]`

Definition at line 464 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::reinterpret_mpz_class()`.

11.5.2.40 `int ppl_Coefficient_OK (ppl_const_Coefficient_t) [related]`

Definition at line 452 of file `ppl_c_implementation_common.cc`.

11.5.2.41 `int ppl_Coefficient_to_mpz_t (ppl_const_Coefficient_t c, mpz_t z) [related]`

Definition at line 420 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::reinterpret_mpz_class()`, and `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.42 `int ppl_Congruence_coefficient (ppl_const_Congruence_t c, ppl_dimension_type var, ppl_Coefficient_t n) [related]`

Definition at line 1329 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.43 `int ppl_Congruence_inhomogeneous_term (ppl_const_Congruence_t c, ppl_Coefficient_t n) [related]`

Definition at line 1340 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.44 `int ppl_Congruence_modulus (ppl_const_Congruence_t c, ppl_Coefficient_t m) [related]`

Definition at line 1350 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.45 `int ppl_Congruence_OK (ppl_const_Congruence_t c) [related]`

Definition at line 1360 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.46 `int ppl_Congruence_space_dimension (ppl_const_Congruence_t c, ppl_dimension_type * m) [related]`

Definition at line 1321 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.47 `int ppl_Congruence_System_begin (ppl_const_Congruence_System_t cs, ppl_Congruence_System_const_iterator_t cit) [related]`

Definition at line 1506 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.48 `int ppl_Congruence_System_clear (ppl_Congruence_System_t cs) [related]`

Definition at line 1444 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.49 `int ppl_Congruence_System_const_iterator_dereference (ppl_const_Congruence_System_const_iterator_t cit, ppl_const_Congruence_t * pc) [related]`

Definition at line 1527 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.50 `int ppl_Congruence_System_const_iterator_equal_test (ppl_const_Congruence_System_const_iterator_t x, ppl_const_Congruence_System_const_iterator_t y) [related]`

Definition at line 1547 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.51 `int ppl_Congruence_System_const_iterator_increment (ppl_Congruence_System_const_iterator_t cit) [related]`

Definition at line 1538 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.52 `int ppl_Congruence_System_empty (ppl_const_Congruence_System_t cs) [related]`

Definition at line 1437 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.53 `int ppl_Congruence_System_end (ppl_const_Congruence_System_t cs, ppl_Congruence_System_const_iterator_t cit) [related]`

Definition at line 1516 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.54 `int ppl_Congruence_System_insert_Congruence (ppl_Congruence_System_t cs, ppl_const_Congruence_t c) [related]`

Definition at line 1451 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.55 `int ppl_Congruence_System_OK (ppl_const_Congruence_System_t cs) [related]`

Definition at line 1461 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.56 `int ppl_Congruence_System_space_dimension (ppl_const_Congruence_System_t cs, ppl_dimension_type * m) [related]`

Definition at line 1428 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.57 `int ppl_Constraint_coefficient (ppl_const_Constraint_t c, ppl_dimension_type var, ppl_Coefficient_t n) [related]`

Definition at line 730 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.58 `int ppl_Constraint_inhomogeneous_term (ppl_const_Constraint_t c, ppl_Coefficient_t n) [related]`

Definition at line 741 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.59 `int ppl_Constraint_OK (ppl_const_Constraint_t c) [related]`

Definition at line 751 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.60 `int ppl_Constraint_space_dimension (ppl_const_Constraint_t c, ppl_dimension_type * m) [related]`

Definition at line 707 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.61 `int ppl_Constraint_System_begin (ppl_const_Constraint_System_t cs, ppl_Constraint_System_const_iterator_t cit) [related]`

Definition at line 905 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`, `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.62 `int ppl_Constraint_System_clear (ppl_Constraint_System_t cs) [related]`

Definition at line 843 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.63 `int ppl_Constraint_System_const_iterator_dereference (ppl_const_Constraint_System_const_iterator_t cit, ppl_const_Constraint_t * pc) [related]`

Definition at line 926 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.64 `int ppl_Constraint_System_const_iterator_equal_test (ppl_const_Constraint_System_const_iterator_t x, ppl_const_Constraint_System_const_iterator_t y) [related]`

Definition at line 946 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.65 `int ppl_Constraint_System_const_iterator_increment (ppl_Constraint_System_const_iterator_t cit) [related]`

Definition at line 937 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.66 int ppl_Constraint_System_empty (ppl_const_Constraint_System_t cs) [related]

Definition at line 828 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.67 int ppl_Constraint_System_end (ppl_const_Constraint_System_t cs, ppl_Constraint_System_const_iterator_t cit) [related]

Definition at line 915 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.68 int ppl_Constraint_System_has_strict_inequalities (ppl_const_Constraint_System_t cs) [related]

Definition at line 836 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.69 int ppl_Constraint_System_insert_Constraint (ppl_Constraint_System_t cs, ppl_const_Constraint_t c) [related]

Definition at line 850 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.70 int ppl_Constraint_System_OK (ppl_const_Constraint_System_t cs) [related]

Definition at line 860 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.71 int ppl_Constraint_System_space_dimension (ppl_const_Constraint_System_t cs, ppl_dimension_type * m) [related]

Definition at line 819 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.72 `int ppl_Constraint_type (ppl_const_Constraint_t c)` [**related**]

Definition at line 715 of file `ppl_c_implementation_common.cc`.

References `PPL_CONSTRAINT_TYPE_EQUAL`, `PPL_CONSTRAINT_TYPE_GREATER_OR_EQUAL`, `PPL_CONSTRAINT_TYPE_GREATER_THAN`, and `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.73 `int ppl_delete_Artificial_Parameter_Sequence_const_iterator (ppl_const_Artificial_Parameter_Sequence_const_iterator_t apit)` [**related**]

Definition at line 2541 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.74 `int ppl_delete_Coefficient (ppl_const_Coefficient_t c)` [**related**]

Definition at line 427 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.75 `int ppl_delete_Congruence (ppl_const_Congruence_t le)` [**related**]

Definition at line 1304 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.76 `int ppl_delete_Congruence_System (ppl_const_Congruence_System_t cs)` [**related**]

Definition at line 1411 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.77 `int ppl_delete_Congruence_System_const_iterator (ppl_const_Congruence_System_const_iterator_t cit)` [**related**]

Definition at line 1487 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.78 `int ppl_delete_Constraint (ppl_const_Constraint_t le)` [**related**]

Definition at line 690 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.79 int ppl_delete_Constraint_System (ppl_const_Constraint_System_t cs) [related]

Definition at line 802 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.80 int ppl_delete_Constraint_System_const_iterator (ppl_const_Constraint_System_const_iterator_t cit) [related]

Definition at line 886 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.81 int ppl_delete_Generator (ppl_const_Generator_t le) [related]

Definition at line 1010 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.82 int ppl_delete_Generator_System (ppl_const_Generator_System_t gs) [related]

Definition at line 1122 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.83 int ppl_delete_Generator_System_const_iterator (ppl_const_Generator_System_const_iterator_t git) [related]

Definition at line 1198 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.84 int ppl_delete_Grid_Generator (ppl_const_Grid_Generator_t le) [related]

Definition at line 1601 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.85 `int ppl_delete_Grid_Generator_System (ppl_const_Grid_Generator_System_t gs)` **[related]**

Definition at line 1716 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.86 `int ppl_delete_Grid_Generator_System_const_iterator (ppl_const_Grid_Generator_System_const_iterator_t git)` **[related]**

Definition at line 1794 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.87 `int ppl_delete_Linear_Expression (ppl_const_Linear_Expression_t le)` **[related]**

Definition at line 518 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.88 `int ppl_delete_MIP_Problem (ppl_const_MIP_Problem_t mip)` **[related]**

Definition at line 1895 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.89 `int ppl_delete_PIP_Problem (ppl_const_PIP_Problem_t pip)` **[related]**

Definition at line 2190 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.90 `int ppl_Generator_coefficient (ppl_const_Generator_t g, ppl_dimension_type var, ppl_Coefficient_t n)` **[related]**

Definition at line 1052 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`, `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.91 `int ppl_Generator_divisor (ppl_const_Generator_t g, ppl_Coefficient_t n)` **[related]**

Definition at line 1063 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.92 int ppl_Generator_OK (ppl_const_Generator_t g) [related]

Definition at line 1073 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.93 int ppl_Generator_space_dimension (ppl_const_Generator_t g, ppl_dimension_type * m) [related]

Definition at line 1027 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.94 int ppl_Generator_System_begin (ppl_const_Generator_System_t gs, ppl_Generator_System_const_iterator_t git) [related]

Definition at line 1216 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.95 int ppl_Generator_System_clear (ppl_Generator_System_t gs) [related]

Definition at line 1155 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.96 int ppl_Generator_System_const_iterator_dereference (ppl_const_Generator_System_const_iterator_t git, ppl_const_Generator_t * pg) [related]

Definition at line 1237 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.97 int ppl_Generator_System_const_iterator_equal_test (ppl_const_Generator_System_const_iterator_t x, ppl_const_Generator_System_const_iterator_t y) [related]

Definition at line 1257 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.98 `int ppl_Generator_System_const_iterator_increment (ppl_Generator_System_const_iterator_t git)` [related]

Definition at line 1248 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.99 `int ppl_Generator_System_empty (ppl_const_Generator_System_t gs)` [related]

Definition at line 1148 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.100 `int ppl_Generator_System_end (ppl_const_Generator_System_t gs, ppl_Generator_System_const_iterator_t git)` [related]

Definition at line 1226 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.101 `int ppl_Generator_System_insert_Generator (ppl_Generator_System_t gs, ppl_const_Generator_t g)` [related]

Definition at line 1162 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.102 `int ppl_Generator_System_OK (ppl_const_Generator_System_t gs)` [related]

Definition at line 1172 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.103 `int ppl_Generator_System_space_dimension (ppl_const_Generator_System_t gs, ppl_dimension_type * m)` [related]

Definition at line 1139 of file `ppl_c_implementation_common.cc`.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.104 int ppl_Generator_type (ppl_const_Generator_t g) [related]

Definition at line 1035 of file ppl_c_implementation_common.cc.

References PPL_GENERATOR_TYPE_CLOSURE_POINT, PPL_GENERATOR_TYPE_LINE, PPL_GENERATOR_TYPE_POINT, PPL_GENERATOR_TYPE_RAY, and Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.105 int ppl_Grid_Generator_coefficient (ppl_const_Grid_Generator_t g, ppl_dimension_type var, ppl_Coefficient_t n) [related]

Definition at line 1642 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.106 int ppl_Grid_Generator_divisor (ppl_const_Grid_Generator_t g, ppl_Coefficient_t n) [related]

Definition at line 1653 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.107 int ppl_Grid_Generator_OK (ppl_const_Grid_Generator_t g) [related]

Definition at line 1663 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.108 int ppl_Grid_Generator_space_dimension (ppl_const_Grid_Generator_t g, ppl_dimension_type * m) [related]

Definition at line 1619 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.109 int ppl_Grid_Generator_System_begin (ppl_const_Grid_Generator_System_t gs, ppl_Grid_Generator_System_const_iterator_t git) [related]

Definition at line 1813 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.110 int ppl_Grid_Generator_System_clear (ppl_Grid_Generator_System_t gs)
[related]

Definition at line 1749 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.111 int ppl_Grid_Generator_System_const_iterator_dereference (ppl_const_Grid_Generator_System_const_iterator_t git, ppl_const_Grid_Generator_t * pg)
[related]

Definition at line 1835 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.112 int ppl_Grid_Generator_System_const_iterator_equal_test (ppl_const_Grid_Generator_System_const_iterator_t x, ppl_const_Grid_Generator_System_const_iterator_t y) [related]

Definition at line 1855 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.113 int ppl_Grid_Generator_System_const_iterator_increment (ppl_Grid_Generator_System_const_iterator_t git) [related]

Definition at line 1846 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.114 int ppl_Grid_Generator_System_empty (ppl_const_Grid_Generator_System_t gs)
[related]

Definition at line 1742 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.115 int ppl_Grid_Generator_System_end (ppl_const_Grid_Generator_System_t gs, ppl_Grid_Generator_System_const_iterator_t git) [related]

Definition at line 1824 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.116 int ppl_Grid_Generator_System_insert_Grid_Generator (ppl_Grid_Generator_System_t gs, ppl_const_Grid_Generator_t g) [related]

Definition at line 1757 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.117 int ppl_Grid_Generator_System_OK (ppl_const_Grid_Generator_System_t gs) [related]

Definition at line 1767 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.118 int ppl_Grid_Generator_System_space_dimension (ppl_const_Grid_Generator_System_t gs, ppl_dimension_type * m) [related]

Definition at line 1733 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.119 int ppl_Grid_Generator_type (ppl_const_Grid_Generator_t g) [related]

Definition at line 1627 of file ppl_c_implementation_common.cc.

References PPL_GRID_GENERATOR_TYPE_LINE, PPL_GRID_GENERATOR_TYPE_PARAMETER, PPL_GRID_GENERATOR_TYPE_POINT, and Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.120 int ppl_Linear_Expression_add_to_coefficient (ppl_Linear_Expression_t le, ppl_dimension_type var, ppl_const_Coefficient_t n) [related]

Definition at line 535 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.121 `int ppl_Linear_Expression_add_to_inhomogeneous (ppl_Linear_Expression_t le, ppl_const_Coefficient_t n)` **[related]**

Definition at line 546 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.122 `int ppl_Linear_Expression_all_homogeneous_terms_are_zero (ppl_const_Linear_Expression_t le)` **[related]**

Definition at line 628 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.123 `int ppl_Linear_Expression_coefficient (ppl_const_Linear_Expression_t le, ppl_dimension_type var, ppl_Coefficient_t n)` **[related]**

Definition at line 594 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.124 `int ppl_Linear_Expression_inhomogeneous_term (ppl_const_Linear_Expression_t le, ppl_Coefficient_t n)` **[related]**

Definition at line 605 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.125 `int ppl_Linear_Expression_is_zero (ppl_const_Linear_Expression_t le)` **[related]**

Definition at line 621 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.126 `int ppl_Linear_Expression_OK (ppl_const_Linear_Expression_t le)` **[related]**

Definition at line 615 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.127 `int ppl_Linear_Expression_space_dimension (ppl_const_Linear_Expression_t le,
ppl_dimension_type * m)` [**related**]

Definition at line 586 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.128 `int ppl_MIP_Problem_add_constraint (ppl_MIP_Problem_t mip,
ppl_const_Constraint_t c)` [**related**]

Definition at line 2010 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.129 `int ppl_MIP_Problem_add_constraints (ppl_MIP_Problem_t mip,
ppl_const_Constraint_System_t cs)` [**related**]

Definition at line 2020 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.130 `int ppl_MIP_Problem_add_space_dimensions_and_embed (ppl_MIP_Problem_t mip,
ppl_dimension_type d)` [**related**]

Definition at line 1988 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.131 `int ppl_MIP_Problem_add_to_integer_space_dimensions (ppl_MIP_Problem_t mip,
ppl_dimension_type ds[], size_t n)` [**related**]

Definition at line 1997 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.132 `int ppl_MIP_Problem_clear (ppl_MIP_Problem_t mip)` [**related**]

Definition at line 1981 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.133 `int ppl_MIP_Problem_constraint_at_index (ppl_const_MIP_Problem_t mip,
ppl_dimension_type i, ppl_const_Constraint_t *pc) [related]`

Definition at line 1950 of file `ppl_c_implementation_common.cc`.

References `ppl_MIP_Problem_tag::ppl_MIP_Problem_number_of_constraints()`, and `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.134 `int ppl_MIP_Problem_evaluate_objective_function (ppl_const_MIP_Problem_t mip,
ppl_const_Generator_t g, ppl_Coefficient_t num, ppl_Coefficient_t den) [related]`

Definition at line 2062 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.135 `int ppl_MIP_Problem_external_memory_in_bytes (ppl_const_MIP_Problem_t mip,
size_t *sz) [related]`

Definition at line 2138 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.136 `int ppl_MIP_Problem_feasible_point (ppl_const_MIP_Problem_t mip,
ppl_const_Generator_t *pg) [related]`

Definition at line 2076 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.137 `int ppl_MIP_Problem_get_control_parameter (ppl_const_MIP_Problem_t mip, int
name) [related]`

Definition at line 2105 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.138 `int ppl_MIP_Problem_integer_space_dimensions (ppl_const_MIP_Problem_t mip,
ppl_dimension_type ds[]) [related]`

Definition at line 1929 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.139 int ppl_MIP_Problem_is_satisfiable (ppl_const_MIP_Problem_t *mip*) [related]

Definition at line 2050 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.140 int ppl_MIP_Problem_number_of_constraints (ppl_const_MIP_Problem_t *mip*, ppl_dimension_type * *m*) [related]

Definition at line 1941 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.141 int ppl_MIP_Problem_number_of_integer_space_dimensions (ppl_const_MIP_Problem_t *mip*, ppl_dimension_type * *m*) [related]

Definition at line 1920 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.142 int ppl_MIP_Problem_objective_function (ppl_const_MIP_Problem_t *mip*, ppl_const_Linear_Expression_t * *ple*) [related]

Definition at line 1966 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.143 int ppl_MIP_Problem_OK (ppl_const_MIP_Problem_t *mip*) [related]

Definition at line 2124 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.144 int ppl_MIP_Problem_optimal_value (ppl_const_MIP_Problem_t *mip*, ppl_Coefficient_t *num*, ppl_Coefficient_t *den*) [related]

Definition at line 2094 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.145 `int ppl_MIP_Problem_optimization_mode (ppl_const_MIP_Problem_t mip)`
[related]

Definition at line 1975 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.146 `int ppl_MIP_Problem_optimizing_point (ppl_const_MIP_Problem_t mip,`
`ppl_const_Generator_t * pg)` [related]

Definition at line 2085 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.147 `int ppl_MIP_Problem_set_control_parameter (ppl_MIP_Problem_t mip, int value)`
[related]

Definition at line 2114 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.148 `int ppl_MIP_Problem_set_objective_function (ppl_MIP_Problem_t mip,`
`ppl_const_Linear_Expression_t le)` [related]

Definition at line 2030 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.149 `int ppl_MIP_Problem_set_optimization_mode (ppl_MIP_Problem_t mip, int mode)`
[related]

Definition at line 2040 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.150 `int ppl_MIP_Problem_solve (ppl_const_MIP_Problem_t mip)` [related]

Definition at line 2056 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.151 `int ppl_MIP_Problem_space_dimension (ppl_const_MIP_Problem_t mip,
ppl_dimension_type * m) [related]`

Definition at line 1912 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.152 `int ppl_MIP_Problem_total_memory_in_bytes (ppl_const_MIP_Problem_t mip, size_t
* sz) [related]`

Definition at line 2130 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.153 `int ppl_multiply_Linear_Expression_by_Coefficient (ppl_Linear_Expression_t le,
ppl_const_Coefficient_t n) [related]`

Definition at line 576 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.154 `int ppl_new_Artificial_Parameter_Sequence_const_iterator
(ppl_Artificial_Parameter_Sequence_const_iterator_t * papit) [related]`

Definition at line 2524 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.155 `int ppl_new_Artificial_Parameter_Sequence_const_iterator_from_Artificial_
Parameter_Sequence_const_iterator (ppl_Artificial_Parameter_Sequence_const_
iterator_t * papit, ppl_const_Artificial_Parameter_Sequence_const_iterator_t apit)
[related]`

Definition at line 2532 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.156 `int ppl_new_Coefficient (ppl_Coefficient_t * pc) [related]`

Definition at line 397 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.157 `int ppl_new_Coefficient_from_Coefficient (ppl_Coefficient_t * pc,
ppl_const_Coefficient_t c)` [**related**]

Definition at line 411 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.158 `int ppl_new_Coefficient_from_mpz_t (ppl_Coefficient_t * pc, mpz_t z)` [**related**]

Definition at line 404 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::reinterpret_mpz_class()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.159 `int ppl_new_Congruence (ppl_Congruence_t * pc, ppl_const_Linear_Expression_t le,
ppl_const_Coefficient_t m)` [**related**]

Definition at line 1268 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.160 `int ppl_new_Congruence_from_Congruence (ppl_Congruence_t * pc,
ppl_const_Congruence_t c)` [**related**]

Definition at line 1295 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.161 `int ppl_new_Congruence_System (ppl_Congruence_System_t * pcs)` [**related**]

Definition at line 1377 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.162 `int ppl_new_Congruence_System_const_iterator (ppl_Congruence_System_const_iterator_t * pcit)` [**related**]

Definition at line 1470 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.163 `int ppl_new_Congruence_System_const_iterator_from_Congruence_System_const_iterator (ppl_Congruence_System_const_iterator_t * pcit, ppl_const_Congruence_System_const_iterator_t cit)` [**related**]

Definition at line 1478 of file `ppl_c_implementation_common.cc`.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.164 `int ppl_new_Congruence_System_from_Congruence (ppl_Congruence_System_t * pcs, ppl_const_Congruence_t c)` [**related**]

Definition at line 1393 of file `ppl_c_implementation_common.cc`.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.165 `int ppl_new_Congruence_System_from_Congruence_System (ppl_Congruence_System_t * pcs, ppl_const_Congruence_System_t cs)` [**related**]

Definition at line 1403 of file `ppl_c_implementation_common.cc`.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.166 `int ppl_new_Congruence_System_zero_dim_empty (ppl_Congruence_System_t * pcs)` [**related**]

Definition at line 1384 of file `ppl_c_implementation_common.cc`.

References Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.167 `int ppl_new_Congruence_zero_dim_false (ppl_Congruence_t * pc)` [**related**]

Definition at line 1281 of file `ppl_c_implementation_common.cc`.

References Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.168 `int ppl_new_Congruence_zero_dim_integrality (ppl_Congruence_t * pc)` [**related**]

Definition at line 1288 of file `ppl_c_implementation_common.cc`.

References Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.169 `int ppl_new_Constraint (ppl_Constraint_t * pc, ppl_const_Linear_Expression_t le, enum ppl_enum_Constraint_Type t)` [**related**]

Definition at line 636 of file `ppl_c_implementation_common.cc`.

References `PPL_CONSTRAINT_TYPE_EQUAL`, `PPL_CONSTRAINT_TYPE_GREATER_OR_EQUAL`, `PPL_CONSTRAINT_TYPE_GREATER_THAN`, `PPL_CONSTRAINT_TYPE_LESS_OR_EQUAL`, `PPL_CONSTRAINT_TYPE_LESS_THAN`, `Parma_Polyhedra_Library::Interfaces::C::to_const()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.170 `int ppl_new_Constraint_from_Constraint (ppl_Constraint_t * pc, ppl_const_Constraint_t c)` [**related**]

Definition at line 681 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.171 `int ppl_new_Constraint_System (ppl_Constraint_System_t * pcs)` [**related**]

Definition at line 768 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.172 `int ppl_new_Constraint_System_const_iterator (ppl_Constraint_System_const_iterator_t * pcit)` [**related**]

Definition at line 869 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.173 `int ppl_new_Constraint_System_const_iterator_from_Constraint_System_const_iterator (ppl_Constraint_System_const_iterator_t * pcit, ppl_const_Constraint_System_const_iterator_t cit)` [**related**]

Definition at line 877 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.174 `int ppl_new_Constraint_System_from_Constraint (ppl_Constraint_System_t * pcs, ppl_const_Constraint_t c)` [**related**]

Definition at line 784 of file `ppl_c_implementation_common.cc`.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.175 `int ppl_new_Constraint_System_from_Constraint_System (ppl_Constraint_System_t * pcs, ppl_const_Constraint_System_t cs)` [**related**]

Definition at line 794 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.176 `int ppl_new_Constraint_System_zero_dim_empty (ppl_Constraint_System_t * pcs)` [**related**]

Definition at line 775 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.177 `int ppl_new_Constraint_zero_dim_false (ppl_Constraint_t * pc)` [**related**]

Definition at line 667 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.178 `int ppl_new_Constraint_zero_dim_positivity (ppl_Constraint_t * pc)` [**related**]

Definition at line 674 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.179 `int ppl_new_Generator (ppl_Generator_t * pg, ppl_const_Linear_Expression_t le, enum ppl_enum_Generator_Type t, ppl_const_Coefficient_t d)` [**related**]

Definition at line 957 of file ppl_c_implementation_common.cc.

References PPL_GENERATOR_TYPE_CLOSURE_POINT, PPL_GENERATOR_TYPE_LINE, PPL_GENERATOR_TYPE_POINT, PPL_GENERATOR_TYPE_RAY, Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.180 `int ppl_new_Generator_from_Generator (ppl_Generator_t * pg, ppl_const_Generator_t g)` [**related**]

Definition at line 1001 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.181 `int ppl_new_Generator_System (ppl_Generator_System_t * pgs) [related]`

Definition at line 1090 of file `ppl_c_implementation_common.cc`.

References Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.182 `int ppl_new_Generator_System_const_iterator (ppl_Generator_System_const_iterator_t * pgit) [related]`

Definition at line 1181 of file `ppl_c_implementation_common.cc`.

References Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.183 `int ppl_new_Generator_System_const_iterator_from_Generator_System_const_iterator (ppl_Generator_System_const_iterator_t * pgit, ppl_const_Generator_System_const_iterator_t git) [related]`

Definition at line 1189 of file `ppl_c_implementation_common.cc`.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.184 `int ppl_new_Generator_System_from_Generator (ppl_Generator_System_t * pgs, ppl_const_Generator_t g) [related]`

Definition at line 1104 of file `ppl_c_implementation_common.cc`.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.185 `int ppl_new_Generator_System_from_Generator_System (ppl_Generator_System_t * pgs, ppl_const_Generator_System_t gs) [related]`

Definition at line 1114 of file `ppl_c_implementation_common.cc`.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.186 `int ppl_new_Generator_System_zero_dim_univ (ppl_Generator_System_t * pgs)`

Definition at line 1097 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.187 int ppl_new_Generator_zero_dim_closure_point (ppl_Generator_t * pg) [related]

Definition at line 994 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.188 int ppl_new_Generator_zero_dim_point (ppl_Generator_t * pg) [related]

Definition at line 987 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.189 int ppl_new_Grid_Generator (ppl_Grid_Generator_t * pg, ppl_const_Linear_Expression_t le, enum ppl_enum_Grid_Generator_Type t, ppl_const_Coefficient_t d) [related]

Definition at line 1558 of file ppl_c_implementation_common.cc.

References PPL_GRID_GENERATOR_TYPE_LINE, PPL_GRID_GENERATOR_TYPE_PARAMETER, PPL_GRID_GENERATOR_TYPE_POINT, Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.190 int ppl_new_Grid_Generator_from_Grid_Generator (ppl_Grid_Generator_t * pg, ppl_const_Grid_Generator_t g) [related]

Definition at line 1592 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.191 int ppl_new_Grid_Generator_System (ppl_Grid_Generator_System_t * pgs) [related]

Definition at line 1682 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.192 int ppl_new_Grid_Generator_System_const_iterator (ppl_Grid_Generator_System_const_iterator_t * pgit) [related]

Definition at line 1776 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.193 `int ppl_new_Grid_Generator_System_const_iterator_from_Grid_Generator_System_const_iterator (ppl_Grid_Generator_System_const_iterator_t * pgit, ppl_const_Grid_Generator_System_const_iterator_t git)` [**related**]

Definition at line 1784 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`, `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.194 `int ppl_new_Grid_Generator_System_from_Grid_Generator (ppl_Grid_Generator_System_t * pgs, ppl_const_Grid_Generator_t g)` [**related**]

Definition at line 1699 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`, `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.195 `int ppl_new_Grid_Generator_System_from_Grid_Generator_System (ppl_Grid_Generator_System_t * pgs, ppl_const_Grid_Generator_System_t gs)` [**related**]

Definition at line 1708 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`, `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.196 `int ppl_new_Grid_Generator_System_zero_dim_univ (ppl_Grid_Generator_System_t * pgs)`

Definition at line 1690 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.197 `int ppl_new_Grid_Generator_zero_dim_point (ppl_Grid_Generator_t * pg)` [**related**]

Definition at line 1585 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.198 int ppl_new_Linear_Expression (ppl_Linear_Expression_t * *ple*) [related]

Definition at line 492 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.199 int ppl_new_Linear_Expression_from_Congruence (ppl_Linear_Expression_t * *ple*, ppl_const_Congruence_t *c*) [related]

Definition at line 1366 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.200 int ppl_new_Linear_Expression_from_Constraint (ppl_Linear_Expression_t * *ple*, ppl_const_Constraint_t *c*) [related]

Definition at line 757 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.201 int ppl_new_Linear_Expression_from_Generator (ppl_Linear_Expression_t * *ple*, ppl_const_Generator_t *g*) [related]

Definition at line 1079 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.202 int ppl_new_Linear_Expression_from_Linear_Expression (ppl_Linear_Expression_t * *ple*, ppl_const_Linear_Expression_t *le*) [related]

Definition at line 510 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.203 int ppl_new_Linear_Expression_with_dimension (ppl_Linear_Expression_t * *ple*, ppl_dimension_type *d*) [related]

Definition at line 499 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.204 `int ppl_new_MIP_Problem (ppl_MIP_Problem_t * pmip, ppl_dimension_type d, ppl_const_Constraint_System_t cs, ppl_const_Linear_Expression_t le, int m)` **[related]**

Definition at line 1872 of file `ppl_c_implementation_common.cc`.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.205 `int ppl_new_MIP_Problem_from_MIP_Problem (ppl_MIP_Problem_t * pmip, ppl_const_MIP_Problem_t mip)` **[related]**

Definition at line 1886 of file `ppl_c_implementation_common.cc`.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.206 `int ppl_new_MIP_Problem_from_space_dimension (ppl_MIP_Problem_t * pmip, ppl_dimension_type d)` **[related]**

Definition at line 1864 of file `ppl_c_implementation_common.cc`.

References Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.207 `int ppl_new_PIP_Problem_from_constraints (ppl_PIP_Problem_t * ppip, ppl_dimension_type d, ppl_Constraint_System_const_iterator_t first, ppl_Constraint_System_const_iterator_t last, size_t n, ppl_dimension_type ds[])` **[related]**

Definition at line 2164 of file `ppl_c_implementation_common.cc`.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.208 `int ppl_new_PIP_Problem_from_PIP_Problem (ppl_PIP_Problem_t * dpip, ppl_const_PIP_Problem_t pip)` **[related]**

Definition at line 2154 of file `ppl_c_implementation_common.cc`.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.209 `int ppl_new_PIP_Problem_from_space_dimension (ppl_PIP_Problem_t * pip,
ppl_dimension_type d)` [**related**]

Definition at line 2146 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.210 `int ppl_PIP_Decision_Node_get_child_node (ppl_const_PIP_Decision_Node_t pip_dec,
int b, ppl_const_PIP_Tree_Node_t * pip_tree)` [**related**]

Definition at line 2468 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.211 `int ppl_PIP_Decision_Node_OK (ppl_const_PIP_Decision_Node_t pip_dec)`

Definition at line 2462 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.212 `int ppl_PIP_Problem_add_constraint (ppl_PIP_Problem_t pip,
ppl_const_Constraint_t c)` [**related**]

Definition at line 2278 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.213 `int ppl_PIP_Problem_add_constraints (ppl_PIP_Problem_t pip,
ppl_const_Constraint_System_t cs)` [**related**]

Definition at line 2288 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.214 `int ppl_PIP_Problem_add_space_dimensions_and_embed (ppl_PIP_Problem_t pip,
ppl_dimension_type pip_vars, ppl_dimension_type pip_params)` [**related**]

Definition at line 2256 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.215 `int ppl_PIP_Problem_add_to_parameter_space_dimensions (ppl_PIP_Problem_t pip,
ppl_dimension_type ds[], size_t n)` [**related**]

Definition at line 2266 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.216 `int ppl_PIP_Problem_clear (ppl_PIP_Problem_t pip)` [**related**]

Definition at line 2250 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.2.217 `int ppl_PIP_Problem_constraint_at_index (ppl_const_PIP_Problem_t pip,
ppl_dimension_type i, ppl_const_Constraint_t *pc)` [**related**]

Definition at line 2235 of file `ppl_c_implementation_common.cc`.

References `ppl_PIP_Problem_tag::ppl_PIP_Problem_number_of_constraints()`, and `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.218 `int ppl_PIP_Problem_external_memory_in_bytes (ppl_const_PIP_Problem_t pip,
size_t *sz)` [**related**]

Definition at line 2373 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.219 `int ppl_PIP_Problem_get_big_parameter_dimension (ppl_const_PIP_Problem_t pip,
ppl_dimension_type *pd)` [**related**]

Definition at line 2349 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.220 `int ppl_PIP_Problem_get_control_parameter (ppl_const_PIP_Problem_t pip, int
name)` [**related**]

Definition at line 2330 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.221 int ppl_PIP_Problem_is_satisfiable (ppl_const_PIP_Problem_t *pip*) [related]

Definition at line 2297 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.222 int ppl_PIP_Problem_number_of_constraints (ppl_const_PIP_Problem_t *pip*, ppl_dimension_type * *m*) [related]

Definition at line 2226 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.223 int ppl_PIP_Problem_number_of_parameter_space_dimensions (ppl_const_PIP_Problem_t *pip*, ppl_dimension_type * *m*) [related]

Definition at line 2206 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.224 int ppl_PIP_Problem_OK (ppl_const_PIP_Problem_t *pip*) [related]

Definition at line 2324 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.225 int ppl_PIP_Problem_optimizing_solution (ppl_const_PIP_Problem_t *pip*, ppl_const_PIP_Tree_Node_t * *ppip_tree*) [related]

Definition at line 2316 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.226 int ppl_PIP_Problem_parameter_space_dimensions (ppl_const_PIP_Problem_t *pip*, ppl_dimension_type *ds*[]) [related]

Definition at line 2214 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.227 int ppl_PIP_Problem_set_big_parameter_dimension (ppl_PIP_Problem_t *pip*, ppl_dimension_type *d*) [related]

Definition at line 2357 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.228 `int ppl_PIP_Problem_set_control_parameter (ppl_PIP_Problem_t pip, int value)` **[related]**

Definition at line 2339 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

11.5.2.229 `int ppl_PIP_Problem_solution (ppl_const_PIP_Problem_t pip, ppl_const_PIP_Tree_Node_t * ppip_tree)` **[related]**

Definition at line 2308 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.230 `int ppl_PIP_Problem_solve (ppl_const_PIP_Problem_t pip)` **[related]**

Definition at line 2302 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.231 `int ppl_PIP_Problem_space_dimension (ppl_const_PIP_Problem_t pip, ppl_dimension_type * m)` **[related]**

Definition at line 2197 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.232 `int ppl_PIP_Problem_total_memory_in_bytes (ppl_const_PIP_Problem_t pip, size_t * sz)` **[related]**

Definition at line 2365 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.233 `int ppl_PIP_Solution_Node_get_parametric_values (ppl_const_PIP_Solution_Node_t pip_sol, ppl_dimension_type var, ppl_const_Linear_Expression_t * le)` **[related]**

Definition at line 2445 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.234 int ppl_PIP_Solution_Node_OK (ppl_const_PIP_Solution_Node_t *pip_sol*)

Definition at line 2456 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

**11.5.2.235 int ppl_PIP_Tree_Node_as_decision (ppl_const_PIP_Tree_Node_t *spip_tree*,
ppl_const_PIP_Decision_Node_t * *dpip_tree*) [related]**

Definition at line 2389 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

**11.5.2.236 int ppl_PIP_Tree_Node_as_solution (ppl_const_PIP_Tree_Node_t *spip_tree*,
ppl_const_PIP_Solution_Node_t * *dpip_tree*) [related]**

Definition at line 2381 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

**11.5.2.237 int ppl_PIP_Tree_Node_begin (ppl_const_PIP_Tree_Node_t *pip_tree*,
ppl_Artificial_Parameter_Sequence_const_iterator_t *pit*) [related]**

Definition at line 2423 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

**11.5.2.238 int ppl_PIP_Tree_Node_end (ppl_const_PIP_Tree_Node_t *pip_tree*,
ppl_Artificial_Parameter_Sequence_const_iterator_t *pit*) [related]**

Definition at line 2434 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const(), and Parma_Polyhedra_Library::Interfaces::C::to_nonconst().

**11.5.2.239 int ppl_PIP_Tree_Node_get_constraints (ppl_const_PIP_Tree_Node_t *pip_tree*,
ppl_const_Constraint_System_t * *pcs*) [related]**

Definition at line 2397 of file ppl_c_implementation_common.cc.

References Parma_Polyhedra_Library::Interfaces::C::to_const().

11.5.2.240 `int ppl_PIP_Tree_Node_number_of_artificials (ppl_const_PIP_Tree_Node_t pip_tree,
ppl_dimension_type * m)` **[related]**

Definition at line 2413 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.241 `int ppl_PIP_Tree_Node_OK (ppl_const_PIP_Tree_Node_t pip_tree)` **[related]**

Definition at line 2407 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`.

11.5.2.242 `int ppl_set_error_handler (error_handler_type h)`

Definition at line 175 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::user_error_handler`.

11.5.2.243 `int ppl_subtract_Linear_Expression_from_Linear_Expression
(ppl_Linear_Expression_t dst, ppl_const_Linear_Expression_t src)` **[related]**

Definition at line 567 of file `ppl_c_implementation_common.cc`.

References `Parma_Polyhedra_Library::Interfaces::C::to_const()`, `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`, and `Parma_Polyhedra_Library::Interfaces::C::to_nonconst()`.

11.5.3 Variable Documentation

11.5.3.1 `int PPL_MIP_PROBLEM_CONTROL_PARAMETER_NAME_PRICING`
[related]

Definition at line 155 of file `ppl_c_implementation_common.cc`.

11.5.3.2 `int PPL_MIP_PROBLEM_CONTROL_PARAMETER_PRICING_STEEPEST_-
EDGE_EXACT` **[related]**

Definition at line 157 of file `ppl_c_implementation_common.cc`.

11.5.3.3 `int PPL_MIP_PROBLEM_CONTROL_PARAMETER_PRICING_STEEPEST_-
EDGE_FLOAT` **[related]**

Definition at line 156 of file ppl_c_implementation_common.cc.

11.5.3.4 int PPL_MIP_PROBLEM_CONTROL_PARAMETER_PRICING_TEXTBOOK [related]

Definition at line 158 of file ppl_c_implementation_common.cc.

11.5.3.5 int PPL_MIP_PROBLEM_STATUS_OPTIMIZED [related]

Definition at line 153 of file ppl_c_implementation_common.cc.

11.5.3.6 int PPL_MIP_PROBLEM_STATUS_UNBOUNDED [related]

Definition at line 152 of file ppl_c_implementation_common.cc.

11.5.3.7 int PPL_MIP_PROBLEM_STATUS_UNFEASIBLE [related]

Definition at line 151 of file ppl_c_implementation_common.cc.

11.5.3.8 int PPL_OPTIMIZATION_MODE_MAXIMIZATION [related]

Definition at line 172 of file ppl_c_implementation_common.cc.

11.5.3.9 int PPL_OPTIMIZATION_MODE_MINIMIZATION [related]

Definition at line 171 of file ppl_c_implementation_common.cc.

11.5.3.10 int PPL_PIP_PROBLEM_CONTROL_PARAMETER_CUTTING_STRATEGY_ALL [related]

Definition at line 166 of file ppl_c_implementation_common.cc.

11.5.3.11 int PPL_PIP_PROBLEM_CONTROL_PARAMETER_CUTTING_STRATEGY_-DEEPEST [related]

Definition at line 165 of file ppl_c_implementation_common.cc.

11.5.3.12 int PPL_PIP_PROBLEM_CONTROL_PARAMETER_CUTTING_STRATEGY_-FIRST [related]

Definition at line 164 of file ppl_c_implementation_common.cc.

11.5.3.13 int PPL_PIP_PROBLEM_CONTROL_PARAMETER_NAME_CUTTING_STRATEGY [related]

Definition at line 163 of file ppl_c_implementation_common.cc.

11.5.3.14 int PPL_PIP_PROBLEM_CONTROL_PARAMETER_NAME_PIVOT_ROW_STRATEGY [related]

Definition at line 167 of file ppl_c_implementation_common.cc.

11.5.3.15 int PPL_PIP_PROBLEM_CONTROL_PARAMETER_PIVOT_ROW_STRATEGY_-FIRST [related]

Definition at line 168 of file ppl_c_implementation_common.cc.

11.5.3.16 int PPL_PIP_PROBLEM_CONTROL_PARAMETER_PIVOT_ROW_STRATEGY_-MAX_COLUMN [related]

Definition at line 169 of file ppl_c_implementation_common.cc.

11.5.3.17 int PPL_PIP_PROBLEM_STATUS_OPTIMIZED [related]

Definition at line 161 of file ppl_c_implementation_common.cc.

11.5.3.18 int PPL_PIP_PROBLEM_STATUS_UNFEASIBLE [related]

Definition at line 160 of file ppl_c_implementation_common.cc.

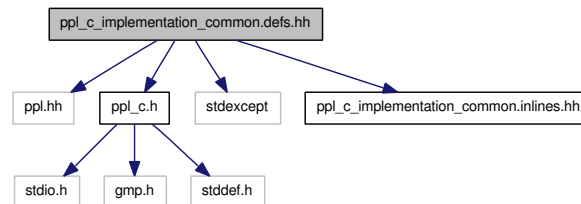
11.6 ppl_c_implementation_common.defs.hh File Reference

```
#include "ppl.hh"
#include "ppl_c.h"
```

```
#include <stdexcept>
```

```
#include "ppl_c_implementation_common.inlines.hh"
```

Include dependency graph for ppl_c_implementation_common.defs.hh:



Classes

- class [Parma_Polyhedra_Library::Interfaces::C::Array_Partial_Function_Wrapper](#)

A class to wrap an array of fixed length into a partial function interface suitable for the map_space_dimension() methods.

- class [Parma_Polyhedra_Library::Interfaces::C::timeout_exception](#)
- class [Parma_Polyhedra_Library::Interfaces::C::deterministic_timeout_exception](#)

Namespaces

- namespace [Parma_Polyhedra_Library](#)
- namespace [Parma_Polyhedra_Library::Interfaces](#)
- namespace [Parma_Polyhedra_Library::Interfaces::C](#)

Defines

- #define [PPL_NO_AUTOMATIC_INITIALIZATION](#)
- #define [CATCH_STD_EXCEPTION\(exception, code\)](#)
- #define [CATCH_ALL](#)
- #define [DECLARE_CONVERSIONS\(Type, CPP_Type\)](#)
- #define [DEFINE_PRINT_FUNCTIONS\(Type\)](#)
- #define [DEFINE_ASCII_DUMP_FUNCTIONS\(Type\)](#)
- #define [DEFINE_ASCII_LOAD_FUNCTIONS\(Type\)](#)
- #define [DEFINE_ASCII_DUMP_LOAD_FUNCTIONS\(Type\)](#)
- #define [DEFINE_OUTPUT_FUNCTIONS\(Type\)](#)

Typedefs

- typedef void(* [Parma_Polyhedra_Library::Interfaces::C::error_handler_type](#))(enum [ppl_enum_error_code](#) code, const char *description)

Functions

- void `Parma_Polyhedra_Library::Interfaces::C::notify_error` (enum `ppl_enum_error_code` code, const char *description)
- Relation_Symbol `Parma_Polyhedra_Library::Interfaces::C::relation_symbol` (enum `ppl_enum_Constraint_Type` t)
- Bounded_Integer_Type_Width `Parma_Polyhedra_Library::Interfaces::C::bounded_integer_type_width` (enum `ppl_enum_Bounded_Integer_Type_Width` w)
- Bounded_Integer_Type_Representation `Parma_Polyhedra_Library::Interfaces::C::bounded_integer_type_representation` (enum `ppl_enum_Bounded_Integer_Type_Representation` r)
- void `Parma_Polyhedra_Library::Interfaces::C::reset_timeout` ()
- void `Parma_Polyhedra_Library::Interfaces::C::reset_deterministic_timeout` ()

11.6.1 Define Documentation

11.6.1.1 #define CATCH_ALL

Definition at line 144 of file `ppl_c_implementation_common.defs.hh`.

11.6.1.2 #define CATCH_STD_EXCEPTION(exception, code)

Value:

```
catch (const std::exception& e) { \
    notify_error(code, e.what()); \
    return code; \
}
```

Definition at line 138 of file `ppl_c_implementation_common.defs.hh`.

11.6.1.3 #define DECLARE_CONVERSIONS(Type, CPP_Type)

Definition at line 169 of file `ppl_c_implementation_common.defs.hh`.

11.6.1.4 #define DEFINE_ASCII_DUMP_FUNCTIONS(Type)

Definition at line 229 of file `ppl_c_implementation_common.defs.hh`.

11.6.1.5 #define DEFINE_ASCII_DUMP_LOAD_FUNCTIONS(Type)

Value:

```
DEFINE_ASCII_DUMP_FUNCTIONS (Type) \
    DEFINE_ASCII_LOAD_FUNCTIONS (Type)
```

Definition at line 252 of file `ppl_c_implementation_common.defs.hh`.

11.6.1.6 #define DEFINE_ASCII_LOAD_FUNCTIONS(Type)

Definition at line 241 of file ppl_c_implementation_common.defs.hh.

11.6.1.7 #define DEFINE_OUTPUT_FUNCTIONS(Type)

Value:

```
DEFINE_PRINT_FUNCTIONS (Type)          \
    DEFINE_ASCII_DUMP_LOAD_FUNCTIONS (Type)
```

Definition at line 256 of file ppl_c_implementation_common.defs.hh.

11.6.1.8 #define DEFINE_PRINT_FUNCTIONS(Type)

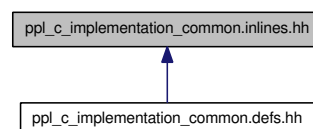
Definition at line 190 of file ppl_c_implementation_common.defs.hh.

11.6.1.9 #define PPL_NO_AUTOMATIC_INITIALIZATION

Definition at line 27 of file ppl_c_implementation_common.defs.hh.

11.7 ppl_c_implementation_common.inlines.hh File Reference

This graph shows which files directly or indirectly include this file:

**Namespaces**

- namespace [Parma_Polyhedra_Library](#)
- namespace [Parma_Polyhedra_Library::Interfaces](#)
- namespace [Parma_Polyhedra_Library::Interfaces::C](#)

Typedefs

- typedef [Constraint_System::const_iterator](#) [Parma_Polyhedra_Library::Interfaces::C::Constraint_System_const_iterator](#)
- typedef [Generator_System::const_iterator](#) [Parma_Polyhedra_Library::Interfaces::C::Generator_System_const_iterator](#)
- typedef [Congruence_System::const_iterator](#) [Parma_Polyhedra_Library::Interfaces::C::Congruence_System_const_iterator](#)

- typedef Grid_Generator_System::const_iterator Parma_Polyhedra_Library::Interfaces::C::Grid_Generator_System_const_iterator
- typedef PIP_Tree_Node::Artificial_Parameter Parma_Polyhedra_Library::Interfaces::C::Artificial_Parameter
- typedef PIP_Tree_Node::Artificial_Parameter_Sequence Parma_Polyhedra_Library::Interfaces::C::Artificial_Parameter_Sequence
- typedef PIP_Tree_Node::Artificial_Parameter_Sequence::const_iterator Parma_Polyhedra_Library::Interfaces::C::Artificial_Parameter_Sequence_const_iterator

Functions

- mpz_class & Parma_Polyhedra_Library::Interfaces::C::reinterpret_mpz_class (mpz_t n)
Reinterpret an mpz_t as mpz_class.
- const Coefficient * Parma_Polyhedra_Library::Interfaces::C::to_const (ppl_const_Coefficient_t x)
- Coefficient * Parma_Polyhedra_Library::Interfaces::C::to_nonconst (ppl_Coefficient_t x)
- ppl_const_Coefficient_t Parma_Polyhedra_Library::Interfaces::C::to_const (const Coefficient *x)
- ppl_Coefficient_t Parma_Polyhedra_Library::Interfaces::C::to_nonconst (Coefficient *x)
- const Linear_Expression * Parma_Polyhedra_Library::Interfaces::C::to_const (ppl_const_Linear_Expression_t x)
- Linear_Expression * Parma_Polyhedra_Library::Interfaces::C::to_nonconst (ppl_Linear_Expression_t x)
- ppl_const_Linear_Expression_t Parma_Polyhedra_Library::Interfaces::C::to_const (const Linear_Expression *x)
- ppl_Linear_Expression_t Parma_Polyhedra_Library::Interfaces::C::to_nonconst (Linear_Expression *x)
- const Constraint * Parma_Polyhedra_Library::Interfaces::C::to_const (ppl_const_Constraint_t x)
- Constraint * Parma_Polyhedra_Library::Interfaces::C::to_nonconst (ppl_Constraint_t x)
- ppl_const_Constraint_t Parma_Polyhedra_Library::Interfaces::C::to_const (const Constraint *x)
- ppl_Constraint_t Parma_Polyhedra_Library::Interfaces::C::to_nonconst (Constraint *x)
- const Constraint_System * Parma_Polyhedra_Library::Interfaces::C::to_const (ppl_const_Constraint_System_t x)
- Constraint_System * Parma_Polyhedra_Library::Interfaces::C::to_nonconst (ppl_Constraint_System_t x)
- ppl_const_Constraint_System_t Parma_Polyhedra_Library::Interfaces::C::to_const (const Constraint_System *x)
- ppl_Constraint_System_t Parma_Polyhedra_Library::Interfaces::C::to_nonconst (Constraint_System *x)
- const Constraint_System_const_iterator * Parma_Polyhedra_Library::Interfaces::C::to_const (ppl_const_Constraint_System_const_iterator_t x)
- Constraint_System_const_iterator * Parma_Polyhedra_Library::Interfaces::C::to_nonconst (ppl_Constraint_System_const_iterator_t x)
- ppl_const_Constraint_System_const_iterator_t Parma_Polyhedra_Library::Interfaces::C::to_const (const Constraint_System_const_iterator *x)
- ppl_Constraint_System_const_iterator_t Parma_Polyhedra_Library::Interfaces::C::to_nonconst (Constraint_System_const_iterator *x)
- const Generator * Parma_Polyhedra_Library::Interfaces::C::to_const (ppl_const_Generator_t x)
- Generator * Parma_Polyhedra_Library::Interfaces::C::to_nonconst (ppl_Generator_t x)
- ppl_const_Generator_t Parma_Polyhedra_Library::Interfaces::C::to_const (const Generator *x)
- ppl_Generator_t Parma_Polyhedra_Library::Interfaces::C::to_nonconst (Generator *x)

- `const Generator_System * Parma_Polyhedra_Library::Interfaces::C::to_const (ppl_const_Generator_System_t x)`
- `Generator_System * Parma_Polyhedra_Library::Interfaces::C::to_nonconst (ppl_Generator_System_t x)`
- `ppl_const_Generator_System_t Parma_Polyhedra_Library::Interfaces::C::to_const (const Generator_System *x)`
- `ppl_Generator_System_t Parma_Polyhedra_Library::Interfaces::C::to_nonconst (Generator_System *x)`
- `const Generator_System_const_iterator * Parma_Polyhedra_Library::Interfaces::C::to_const (ppl_const_Generator_System_const_iterator_t x)`
- `Generator_System_const_iterator * Parma_Polyhedra_Library::Interfaces::C::to_nonconst (ppl_Generator_System_const_iterator_t x)`
- `ppl_const_Generator_System_const_iterator_t Parma_Polyhedra_Library::Interfaces::C::to_const (const Generator_System_const_iterator *x)`
- `ppl_Generator_System_const_iterator_t Parma_Polyhedra_Library::Interfaces::C::to_nonconst (Generator_System_const_iterator *x)`
- `const Congruence * Parma_Polyhedra_Library::Interfaces::C::to_const (ppl_const_Congruence_t x)`
- `Congruence * Parma_Polyhedra_Library::Interfaces::C::to_nonconst (ppl_Congruence_t x)`
- `ppl_const_Congruence_t Parma_Polyhedra_Library::Interfaces::C::to_const (const Congruence *x)`
- `ppl_Congruence_t Parma_Polyhedra_Library::Interfaces::C::to_nonconst (Congruence *x)`
- `const Congruence_System * Parma_Polyhedra_Library::Interfaces::C::to_const (ppl_const_Congruence_System_t x)`
- `Congruence_System * Parma_Polyhedra_Library::Interfaces::C::to_nonconst (ppl_Congruence_System_t x)`
- `ppl_const_Congruence_System_t Parma_Polyhedra_Library::Interfaces::C::to_const (const Congruence_System *x)`
- `ppl_Congruence_System_t Parma_Polyhedra_Library::Interfaces::C::to_nonconst (Congruence_System *x)`
- `const Congruence_System_const_iterator * Parma_Polyhedra_Library::Interfaces::C::to_const (ppl_const_Congruence_System_const_iterator_t x)`
- `Congruence_System_const_iterator * Parma_Polyhedra_Library::Interfaces::C::to_nonconst (ppl_Congruence_System_const_iterator_t x)`
- `ppl_const_Congruence_System_const_iterator_t Parma_Polyhedra_Library::Interfaces::C::to_const (const Congruence_System_const_iterator *x)`
- `ppl_Congruence_System_const_iterator_t Parma_Polyhedra_Library::Interfaces::C::to_nonconst (Congruence_System_const_iterator *x)`
- `const Grid_Generator * Parma_Polyhedra_Library::Interfaces::C::to_const (ppl_const_Grid_Generator_t x)`
- `Grid_Generator * Parma_Polyhedra_Library::Interfaces::C::to_nonconst (ppl_Grid_Generator_t x)`
- `ppl_const_Grid_Generator_t Parma_Polyhedra_Library::Interfaces::C::to_const (const Grid_Generator *x)`
- `ppl_Grid_Generator_t Parma_Polyhedra_Library::Interfaces::C::to_nonconst (Grid_Generator *x)`
- `const Grid_Generator_System * Parma_Polyhedra_Library::Interfaces::C::to_const (ppl_const_Grid_Generator_System_t x)`
- `Grid_Generator_System * Parma_Polyhedra_Library::Interfaces::C::to_nonconst (ppl_Grid_Generator_System_t x)`
- `ppl_const_Grid_Generator_System_t Parma_Polyhedra_Library::Interfaces::C::to_const (const Grid_Generator_System *x)`
- `ppl_Grid_Generator_System_t Parma_Polyhedra_Library::Interfaces::C::to_nonconst (Grid_Generator_System *x)`
- `const Grid_Generator_System_const_iterator * Parma_Polyhedra_Library::Interfaces::C::to_const (ppl_const_Grid_Generator_System_const_iterator_t x)`

- `Grid_Generator_System_const_iterator` * [Parma_Polyhedra_Library::Interfaces::C::to_nonconst](#) (`ppl_Grid_Generator_System_const_iterator_t x`)
- `ppl_const_Grid_Generator_System_const_iterator_t` [Parma_Polyhedra_Library::Interfaces::C::to_const](#) (`const Grid_Generator_System_const_iterator *x`)
- `ppl_Grid_Generator_System_const_iterator_t` [Parma_Polyhedra_Library::Interfaces::C::to_nonconst](#) (`Grid_Generator_System_const_iterator *x`)
- `const Artificial_Parameter` * [Parma_Polyhedra_Library::Interfaces::C::to_const](#) (`ppl_const_Artificial_Parameter_t x`)
- `Artificial_Parameter` * [Parma_Polyhedra_Library::Interfaces::C::to_nonconst](#) (`ppl_Artificial_Parameter_t x`)
- `ppl_const_Artificial_Parameter_t` [Parma_Polyhedra_Library::Interfaces::C::to_const](#) (`const Artificial_Parameter *x`)
- `ppl_Artificial_Parameter_t` [Parma_Polyhedra_Library::Interfaces::C::to_nonconst](#) (`Artificial_Parameter *x`)
- `const Artificial_Parameter_Sequence` * [Parma_Polyhedra_Library::Interfaces::C::to_const](#) (`ppl_const_Artificial_Parameter_Sequence_t x`)
- `Artificial_Parameter_Sequence` * [Parma_Polyhedra_Library::Interfaces::C::to_nonconst](#) (`ppl_Artificial_Parameter_Sequence_t x`)
- `ppl_const_Artificial_Parameter_Sequence_t` [Parma_Polyhedra_Library::Interfaces::C::to_const](#) (`const Artificial_Parameter_Sequence *x`)
- `ppl_Artificial_Parameter_Sequence_t` [Parma_Polyhedra_Library::Interfaces::C::to_nonconst](#) (`Artificial_Parameter_Sequence *x`)
- `const Artificial_Parameter_Sequence_const_iterator` * [Parma_Polyhedra_Library::Interfaces::C::to_const](#) (`ppl_const_Artificial_Parameter_Sequence_const_iterator_t x`)
- `Artificial_Parameter_Sequence_const_iterator` * [Parma_Polyhedra_Library::Interfaces::C::to_nonconst](#) (`ppl_Artificial_Parameter_Sequence_const_iterator_t x`)
- `ppl_const_Artificial_Parameter_Sequence_const_iterator_t` [Parma_Polyhedra_Library::Interfaces::C::to_const](#) (`const Artificial_Parameter_Sequence_const_iterator *x`)
- `ppl_Artificial_Parameter_Sequence_const_iterator_t` [Parma_Polyhedra_Library::Interfaces::C::to_nonconst](#) (`Artificial_Parameter_Sequence_const_iterator *x`)
- `const MIP_Problem` * [Parma_Polyhedra_Library::Interfaces::C::to_const](#) (`ppl_const_MIP_Problem_t x`)
- `MIP_Problem` * [Parma_Polyhedra_Library::Interfaces::C::to_nonconst](#) (`ppl_MIP_Problem_t x`)
- `ppl_const_MIP_Problem_t` [Parma_Polyhedra_Library::Interfaces::C::to_const](#) (`const MIP_Problem *x`)
- `ppl_MIP_Problem_t` [Parma_Polyhedra_Library::Interfaces::C::to_nonconst](#) (`MIP_Problem *x`)
- `const PIP_Problem` * [Parma_Polyhedra_Library::Interfaces::C::to_const](#) (`ppl_const_PIP_Problem_t x`)
- `PIP_Problem` * [Parma_Polyhedra_Library::Interfaces::C::to_nonconst](#) (`ppl_PIP_Problem_t x`)
- `ppl_const_PIP_Problem_t` [Parma_Polyhedra_Library::Interfaces::C::to_const](#) (`const PIP_Problem *x`)
- `ppl_PIP_Problem_t` [Parma_Polyhedra_Library::Interfaces::C::to_nonconst](#) (`PIP_Problem *x`)
- `const PIP_Tree_Node` * [Parma_Polyhedra_Library::Interfaces::C::to_const](#) (`ppl_const_PIP_Tree_Node_t x`)
- `PIP_Tree_Node` * [Parma_Polyhedra_Library::Interfaces::C::to_nonconst](#) (`ppl_PIP_Tree_Node_t x`)
- `ppl_const_PIP_Tree_Node_t` [Parma_Polyhedra_Library::Interfaces::C::to_const](#) (`const PIP_Tree_Node *x`)
- `ppl_PIP_Tree_Node_t` [Parma_Polyhedra_Library::Interfaces::C::to_nonconst](#) (`PIP_Tree_Node *x`)
- `const PIP_Decision_Node` * [Parma_Polyhedra_Library::Interfaces::C::to_const](#) (`ppl_const_PIP_Decision_Node_t x`)

- PIP_Decision_Node * Parma_Polyhedra_Library::Interfaces::C::to_nonconst (ppl_PIP_Decision_Node_t x)
- ppl_const_PIP_Decision_Node_t Parma_Polyhedra_Library::Interfaces::C::to_const (const PIP_Decision_Node *x)
- ppl_PIP_Decision_Node_t Parma_Polyhedra_Library::Interfaces::C::to_nonconst (PIP_Decision_Node *x)
- const PIP_Solution_Node * Parma_Polyhedra_Library::Interfaces::C::to_const (ppl_const_PIP_Solution_Node_t x)
- PIP_Solution_Node * Parma_Polyhedra_Library::Interfaces::C::to_nonconst (ppl_PIP_Solution_Node_t x)
- ppl_const_PIP_Solution_Node_t Parma_Polyhedra_Library::Interfaces::C::to_const (const PIP_Solution_Node *x)
- ppl_PIP_Solution_Node_t Parma_Polyhedra_Library::Interfaces::C::to_nonconst (PIP_Solution_Node *x)
- Relation_Symbol Parma_Polyhedra_Library::Interfaces::C::relation_symbol (enum ppl_enum_Constraint_Type t)
- Bounded_Integer_Type_Width Parma_Polyhedra_Library::Interfaces::C::bounded_integer_type_width (enum ppl_enum_Bounded_Integer_Type_Width w)
- Bounded_Integer_Type_Representation Parma_Polyhedra_Library::Interfaces::C::bounded_integer_type_representation (enum ppl_enum_Bounded_Integer_Type_Representation r)
- Bounded_Integer_Type_Overflow Parma_Polyhedra_Library::Interfaces::C::bounded_integer_type_overflow (enum ppl_enum_Bounded_Integer_Type_Overflow o)

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