The Parma Polyhedra Library Prolog Language Interface Developer's Manual* (version 0.11.2)

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1 Prolog Language Interface

The Parma Polyhedra Library comes equipped with a Prolog interface. Despite the lack of standardization of Prolog's foreign language interfaces, the PPL Prolog interface supports several Prolog systems and, to the extent this is possible, provides a uniform view of the library from each such system.

The system-independent features of the library are described in Section System-Independent Features. Section Compilation and Installation explains how the Prolog interface is compiled and installed. Section System-Dependent Features illustrates the system-dependent features of the interface for all the supported systems.

The structure of this section is as follows:

- System-Independent Features
  - Overview
  - Predicate Specifications
  - Predicate Descriptions
    - Domain Independent Predicates
    - MIP Predicates
    - PIP Predicates
    - Predicates for C Polyhedra
    - Ad hoc Predicates for Other Domains
- Compilation and Installation
- System-Dependent Features
  - GNU Prolog
  - CIAO Prolog
  - SICStus Prolog
  - SWI Prolog
  - XSB
  - YAP

In the sequel, `prefix` is the prefix under which you have installed the library (typically `/usr` or `/usr/local`).

System-Independent Features

The Prolog interface provides access to the numerical abstractions (convex polyhedra, BD shapes, octagonal shapes, etc.) implemented by the PPL library. A general introduction to the numerical abstractions, their representation in the PPL and the operations provided by the PPL is given in the main *PPL user manual*. Here we just describe those aspects that are specific to the Prolog interface.

Overview

First, here is a list of notes with general information and advice on the use of the interface.

- The numerical abstract domains available to the Prolog user consist of the *simple* domains, *powersets* of a simple domain and *products* of simple domains.
  - The simple domains are:
    - convex polyhedra, which consist of C_Polyhedron and NNC_Polyhedron;
    - weakly relational, which consist of BD_Shape_N and Octagonal_Shape_N where N is one of the numeric types int8, int16, int32, int64, mpz_class, mpq_class, float, double, long_double;
    - boxes which consist of Int8_Box, Int16_Box, Int32_Box, Int64_Box, Uint8_Box, Uint16_Box, Uint32_Box, Uint64_Box, Double_Box, Long_Double_Box, Z_Box, Rational_Box, Float_Box; and
    - the Grid domain.
  - The powerset domains are Pointset_Powerset_S where S is a simple domain.
  - The product domains consist of Direct_Product_S_T, Smash_Product_S_T, Constraints_-Product_S_T and Shape_Preserving_Product_S_T where S and T are simple domains.
- In the following, any of the above numerical abstract domains is called a PPL *domain* and any element of a PPL domain is called a *PPL object*.
- The Prolog interface to the PPL is initialized and finalized by the predicates `ppl_initialize/0` and `ppl_finalize/0`. Thus the only interface predicates callable after `ppl_finalize/0` are `ppl_finalize/0` itself (this further call has no effect) and `ppl_initialize/0`, after which the interface's services are usable again. Some Prolog systems allow the specification of initialization and deinitialization functions in their foreign language interfaces. The corresponding incarnations of the Prolog interface have been written so that `ppl_initialize/0` and/or `ppl_finalize/0` are called automatically. Section System-Dependent Features will detail in which cases initialization and finalization is automatically performed or is left to the Prolog programmer's responsibility. However, for portable applications, it is best to invoke `ppl_initialize/0` and `ppl_finalize/0` explicitly: since they can be called multiple times without problems, this will result in enhanced portability at a cost that is, by all means, negligible.
- A PPL object such as a polyhedron can only be accessed by means of a Prolog term called a *handle*. Note, however, that the data structure of a handle, is implementation-dependent, system-dependent and version-dependent, and, for this reason, deliberately left unspecified. What we do guarantee is that the handle requires very little memory.
- A Prolog term can be bound to a valid handle for a PPL object by using predicates such as

```
ppl_new_C_Polyhedron_from_space_dimension/3,
ppl_new_C_Polyhedron_from_C_Polyhedron/2,
ppl_new_C_Polyhedron_from_constraints/2,
ppl_new_C_Polyhedron_from_generators/2,
```

These predicates will create or copy a PPL polyhedron and construct a valid handle for referencing it. The last argument is a Prolog term that is unified with a new valid handle for accessing this polyhedron.

- As soon as a PPL object is no longer required, the memory occupied by it should be released using the PPL predicate such as `ppl_delete_Polyhedron/1`. To understand why this is important, consider a Prolog program and a variable that is bound to a Herbrand term. When the variable dies (goes out of scope) or is uninstantiated (on backtracking), the term it is bound to is amenable to garbage collection. But this only applies for the standard domain of the language: Herbrand terms. In Prolog+PPL, when, for example, a variable bound to a handle for a Polyhedron dies or is uninstantiated, the handle can be garbage-collected, but the polyhedron to which the handle refers will not be released. Once a handle has been used as an argument in `ppl_delete_Polyhedron/1`, it becomes invalid.
- For a PPL object with space dimension `k`, the identifiers used for the PPL variables must lie between 0 and $k-1$ and correspond to the indices of the associated Cartesian axes. For example, when using the predicates that combine PPL polyhedra or add constraints or generators to a representation of a PPL polyhedron, the polyhedra referenced and any constraints or generators in the call should follow all the (space) dimension-compatibility rules stated in Section *Representations of Convex Polyhedra* of the main *PPL user manual*.
- As explained above, a polyhedron has a fixed topology C or NNC, that is determined at the time of its initialization. All subsequent operations on the polyhedron must respect all the topological compatibility rules stated in Section *Representations of Convex Polyhedra* of the main *PPL user manual*.
- Any application using the PPL should make sure that only the intended version(s) of the library are ever used. Predicates

  ```
  ppl_version_major/1,
  ppl_version_minor/1,
  ppl_version_revision/1,
  ppl_version_beta/1,
  ppl_version/1,
  ppl_banner.
  ```

  allow run-time checking of information about the version being used.

Predicate Specifications

The PPL predicates provided by the Prolog interface are specified below. The specification uses the following grammar rules:

```
Number      --> unsigned integer       ranging from 0 to an upper bound
                                       depending on the actual Prolog system.

C_int       --> Number | - Number      C integer

C_unsigned  --> Number                 C unsigned integer

Coeff       --> Number                 used in linear expressions;
                                       the upper bound will depend on how
                                       the PPL has been configured

Dimension_Type
            --> Number                 used for the number of affine and
                                       space dimensions and the names of
                                       the dimensions;
```

```
                                        the upper bound will depend on
                                        the maximum number of dimensions
                                        allowed by the PPL
                                        (see ppl_max_space_dimensions/1)

Boolean     --> true | false

Handle      --> Prolog term             used to identify a Polyhedron

Topology    --> c | nnc                 Polyhedral kind;
                                        c is closed and nnc is NNC

VarId       --> Dimension_Type          variable identifier

PPL_Var     --> '$VAR'(VarId)           PPL variable

Lin_Expr    --> PPL_Var                 PPL variable
           | Coeff
           | Lin_Expr                   unary plus
           | - Lin_Expr                 unary minus
           | Lin_Expr + Lin_Expr        addition
           | Lin_Expr - Lin_Expr        subtraction
           | Coeff * Lin_Expr           multiplication
           | Lin_Expr * Coeff           multiplication

Relation_Symbol --> =                   equals
           | =<                         less than or equal
           | >=                         greater than or equal
           | <                          strictly less than
           | >                          strictly greater than

Constraint  --> Lin_Expr Relation_Symbol Lin_Expr
                                        constraint

Constraint_System                       list of constraints
            --> []
           | [Constraint | Constraint_System]

Modulus     --> Coeff | - Coeff

Congruence  --> Lin_Expr =:= Lin_Expr   congruence with modulo 1
           | (Lin_Expr =:= Lin_Expr) / Modulus
                                        congruence with modulo Modulus

Congruence_System                       list of congruences
            --> []
           | [Congruence | Congruence_System]

Generator_Denominator --> Coeff         must be non-zero
           | - Coeff

Generator   --> point(Lin_Expr)         point
           | point(Lin_Expr, Generator_Denominator)
                                        point
           | closure_point(Lin_Expr)    closure point
           | closure_point(Lin_Expr, Generator_Denominator)
                                        closure point
           | ray(Lin_Expr)              ray
           | line(Lin_Expr)             line

Generator_System                        list of generators
            --> []
           | [Generator | Generator_System]

Grid_Generator
            --> grid_point(Lin_Expr)    grid point
           | grid_point(Lin_Expr, Generator_Denominator)
```

```
                                        grid point
            | parameter(Lin_Expr)       parameter
            | parameter(Lin_Expr, Generator_Denominator)
                                        parameter
            | grid_line(Lin_Expr)       grid line

Grid_Generator_System                   list of grid generators
             --> []
            | [Grid_Generator | Grid_Generator_System]

Artificial_Parameter  --> Lin_Expr / Coeff

Artificial_Parameter_List --> []
            | [Artificial_Parameter | Artificial_Parameter_List]

Atom         --> Prolog atom

Universe_or_Empty                       PPL object
             --> universe | empty

Poly_Relation --> is_disjoint           with a constraint or congruence
            | strictly_intersects       with a constraint or congruence
            | is_included               with a constraint or congruence
            | saturates                 with a constraint or congruence
            | subsumes                  with a (grid) generator

Relation_List --> []
            | [Poly_Relation | Relation_List]

Complexity  --> polynomial | simplex | any

Vars_Pair   --> PPLVar - PPLVar         map relation

P_Func      --> []                      list of map relations
            | [Vars_Pair | P_Func].

Width  --> bits_8 | bits_16 | bits_32 | bits_64 | bits_128

Representation  --> unsigned | signed_2_complement

Overflow  --> overflow_wraps | overflow_undefined | overflow_impossible

Optimization_Mode --> max | min

Problem_Status --> unfeasible
            | unbounded
            | optimized

Control_Parameter_Name --> pricing            for MIP problems
                       | control_strategy     for PIP problems
                       | pivot_row_strategy   for PIP problems

Control_Parameter_Value
             --> pricing_steepest_edge_float
            | pricing_steepest_edge_exact
            | pricing_textbook
            | control_strategy_first
            | control_strategy_deepest
            | control_strategy_all
            | pivot_row_strategy_first
            | pivot_row_strategy_max_column

Vars_List   --> []                      list of PPL variables
            | [PPL_Var | Vars_List].
```

Predicate Descriptions

Below is a short description of many of the interface predicates. For full definitions of terminology used here, see the main *PPL user manual*.

Domain Independent Predicates

First we describe the domain independent predicates that are included with all instantiations of the Prolog interfaces.

`ppl_version_major(?C_int)`

Unifies `C_int` *with the major number of the PPL version.*

`ppl_version_minor(?C_int)`

Unifies `C_int` *with the minor number of the PPL version.*

`ppl_version_revision(?C_int)`

Unifies `C_int` *with the revision number of the PPL version.*

`ppl_version_beta(?C_int)`

Unifies `C_int` *with the beta number of the PPL version.*

`ppl_version(?Atom)`

Unifies `Atom` *with the PPL version.*

`ppl_banner(?Atom)`

Unifies `Atom` *with 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.*

`ppl_Coefficient_bits(?Bits)`

Unifies `Bits` *with the number of bits used to encode a Coefficient in the C++ interface; 0 if unbounded.*

`ppl_Coefficient_is_bounded`

Succeeds if and only if the Coefficients in the C++ interface are bounded.

`ppl_Coefficient_max(Max)`

If the Coefficients in the C++ interface are bounded, then the maximum coefficient the C++ interface can handle is unified with `Max`*. If the Prolog system cannot handle this coefficient, then an exception is thrown. It fails if the Coefficients in the C++ interface are unbounded.*

`ppl_Coefficient_min(Min)`

If the Coefficients in the C++ interface are bounded, then the minimum coefficient the C++ interface can handle is unified with `Min`*. If the Prolog system cannot handle this coefficient, then an exception is thrown. It fails if the Coefficients in the C++ interface are unbounded.*

`ppl_max_space_dimension(?Dimension_Type)`

Unifies `Dimension_Type` *with the maximum space dimension this library can handle.*

`ppl_initialize`

Initializes the PPL interface. Multiple calls to `ppl_initialize` *does no harm.*

`ppl_finalize`

Finalizes the PPL interface. Once this is executed, the next call to an interface predicate must either be to `ppl_initialize` *or to* `ppl_finalize`*. Multiple calls to* `ppl_finalize` *does no harm.*

`ppl_set_timeout_exception_atom(+Atom)`

Sets the atom to be thrown by timeout exceptions to `Atom`*. The default value is* `time_out`*.*

`ppl_timeout_exception_atom(?Atom)`

The atom to be thrown by timeout exceptions is unified with `Atom`*.*

`ppl_set_timeout(+Hsecs)`

Computations taking exponential time will be interrupted some time after `Hsecs` *hundreths of seconds after that call. If the computation is interrupted that way, the current timeout exception atom will be thrown.* `Hsecs` *must be strictly greater than zero.*

`ppl_reset_timeout`

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

`ppl_set_deterministic_timeout(+Weight)`

Computations taking exponential time will be interrupted some time after reaching the `Weight` *complexity threshold. If the computation is interrupted that way, the current timeout exception atom will be thrown.* `Weight` *must be strictly greater than zero.*

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.). The weight mechanism is under alpha testing: client applications should be ready to reconsider the tuning of these weight thresholds when upgrading to newer version of the PPL.

`ppl_reset_deterministic_timeout`

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

`ppl_set_rounding_for_PPL`

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 previously been called.

`ppl_restore_pre_PPL_rounding`

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.

`ppl_irrational_precision(?Precision)`

Unifies `Precision` *with the precision parameter for irrational calculations.*

`ppl_set_irrational_precision(+Precision)`

Sets the precision parameter for irrational calculations to `Precision`*. In the following irrational calculations returning an unbounded rational (e.g., when computing a square root), the lesser between numerator and denominator will be limited to* `2**Precision`*.*

MIP Predicates

Here we describe the predicates available for PPL objects defining mixed integer (linear) programming problems.

`ppl_new_MIP_Problem_from_space_dimension(+Dimension_Type, -Handle)`

Creates an MIP Problem MIP *with the feasible region the vector space of dimension* `Dimension_Type`*, objective function* 0 *and optimization mode* `max`*.* `Handle` *is unified with the handle for* MIP.

`ppl_new_MIP_Problem(+Constraint_System, +Lin_Expr, +Optimization_Mode, -Handle)`

Creates an MIP Problem MIP *with the feasible region represented by* `Constraint_System`*, objective function* `Lin_Expr` *and optimization mode* `Optimization_Mode`*.* `Handle` *is unified with the handle for* MIP.

`ppl_new_MIP_Problem_from_MIP_Problem(+Handle_1, -Handle_2)`

Creates an MIP Problem MIP *from the MIP Problem referenced by* `Handle_1`*.* `Handle_2` *is unified with the handle for* MIP.

`ppl_MIP_Problem_swap(+Handle_1, +Handle_2)`

Swaps the MIP Problem referenced by `Handle_1` *with the one referenced by* `Handle_2`*.*

`ppl_delete_MIP_Problem(+Handle)`

Deletes the MIP Problem referenced by `Handle`*. After execution,* `Handle` *is no longer a valid handle for a PPL MIP Problem.*

`ppl_MIP_Problem_space_dimension(+Handle, ?Dimension_Type)`

Unifies the dimension of the vector space in which the MIP Problem referenced by `Handle` *is embedded with* `Dimension_Type`*.*

`ppl_MIP_Problem_integer_space_dimensions(+Handle, ?Vars_List)`

Unifies `Vars_List` *with a list of variables representing the integer space dimensions of the MIP Problem referenced by* `Handle`*.*

`ppl_MIP_Problem_constraints(+Handle, -Constraint_System)`

Unifies `Constraint_System` *with a list of the constraints in the constraints system representing the feasible region for the MIP Problem referenced by* `Handle`*.*

`ppl_MIP_Problem_objective_function(+Handle, ?Lin_Expr)`

Unifies `Lin_Expr` *with the objective function for the MIP Problem referenced by* `Handle`*.*

`ppl_MIP_Problem_optimization_mode(+Handle, ?Optimization_Mode)`

Unifies `Optimization_Mode` *with the optimization mode for the MIP Problem referenced by* `Handle`*.*

`ppl_MIP_Problem_clear(+Handle)`

Resets the MIP problem referenced by `Handle` *to be the trivial problem with the feasible region the* 0*-dimensional universe, objective function* 0 *and optimization mode* `max`*.*

`ppl_MIP_Problem_add_space_dimensions_and_embed( +Handle, +Dimension_Type)`

Embeds the MIP problem referenced by `Handle` *in a space that is enlarged by* `Dimension_Type` *dimensions.*

`ppl_MIP_Problem_add_to_integer_space_dimensions(+Handle, +Vars_List)`

Updates the MIP Problem referenced by `Handle` *so that the variables in* `Vars_List` *are added to the set of integer space dimensions.*

`ppl_MIP_Problem_add_constraint(+Handle, +Constraint)`

Updates the MIP Problem referenced by `Handle` *so that the feasible region is represented by the original constraint system together with the constraint* `Constraint`.

`ppl_MIP_Problem_add_constraints(+Handle, +Constraint_System)`

Updates the MIP Problem referenced by `Handle` *so that the feasible region is represented by the original constraint system together with all the constraints in* `Constraint_System`.

`ppl_MIP_Problem_set_objective_function(+Handle, +Lin_Expr)`

Updates the MIP Problem referenced by `Handle` *so that the objective function is changed to* `Lin_Expr`.

`ppl_MIP_Problem_set_control_parameter(+Handle, +Control_Parameter_Value)`

Updates the MIP Problem referenced by `Handle` *so that the value for the relevant control parameter name is changed to* `Control_Parameter_Value`.

`ppl_MIP_Problem_get_control_parameter(+Handle, +Control_Parameter_Name, ?Control_Parameter_Value)`

Unifies `Control_Parameter_Value` *with the value of the control parameter* `Control_Parameter_Name`.

`ppl_MIP_Problem_set_optimization_mode(+Handle, +Optimization_Mode)`

Updates the MIP Problem referenced by `Handle` *so that the optimization mode is changed to* `Optimization_Mode`.

`ppl_MIP_Problem_is_satisfiable(+Handle)`

Succeeds if and only if the MIP Problem referenced by `Handle` *is satisfiable.*

`ppl_MIP_Problem_solve(+Handle, ?MIP_Problem_Status)`

Solves the MIP problem referenced by `Handle` *and unifies* `MIP_Problem_Status` *with:* `unfeasible`*, if the MIP problem is not satisfiable;* `unbounded`*, if the MIP problem is satisfiable but there is no finite bound to the value of the objective function;* `optimized`*, if the MIP problem admits an optimal solution.*

`ppl_MIP_Problem_feasible_point(+Handle, ?Generator)`

Unifies `Generator` *with a feasible point for the MIP problem referenced by* `Handle`.

`ppl_MIP_Problem_optimizing_point(+Handle, ?Generator)`

Unifies `Generator` *with an optimizing point for the MIP problem referenced by* `Handle`.

`ppl_MIP_Problem_optimal_value(+Handle, ?Coeff_1, ?Coeff_2)`

Unifies `Coeff_1` *and* `Coeff_2` *with the numerator and denominator, respectively, for the optimal value for the MIP problem referenced by* `Handle`.

`ppl_MIP_Problem_evaluate_objective_function(+Handle, +Generator, ?Coeff_1, ?Coeff_2)`

Evaluates the objective function of the MIP problem referenced by `Handle` *at point* `Generator`. `Coefficient_1` *is unified with the numerator and* `Coefficient_2` *is unified with the denominator of the objective function value at* `Generator`.

`ppl_MIP_Problem_OK(+Handle)`

Succeeds only if the MIP Problem referenced by `Handle` *is well formed, i.e., if it satisfies all its implementation invariants. Useful for debugging purposes.*

PIP Predicates

Here we describe some functions available for PPL objects defining parametric integer programming problems.

`ppl_new_PIP_Problem_from_space_dimension(+Dimension_Type, -Handle)`

Creates a PIP Problem PIP *with the feasible region the vector space of dimension* `dimension`*, empty constraint_system and empty set of parametric variables.* `Handle` *is unified with the handle for* PIP.

`ppl_new_PIP_Problem(+Constraint_System, +Lin_Expr, +Vars_List, -Handle)`

Creates a PIP Problem PIP *having space dimension* `dimension`*, a feasible region represented by* `constraint_system` *and parametric variables represented by* `Vars_List`*.* `Handle` *is unified with the handle for* PIP.

`ppl_new_PIP_Problem_from_PIP_Problem(+Handle_1, -Handle_2)`

Creates a PIP Problem PIP *from the PIP Problem referenced by* `Handle_1`*.* `Handle_2` *is unified with the handle for* PIP.

`ppl_PIP_Problem_swap(+Handle_1, +Handle_2)`

Swaps the PIP Problem referenced by `Handle_1` *with the one referenced by* `Handle_2`*.*

`ppl_delete_PIP_Problem(+Handle)`

Deletes the PIP Problem referenced by `Handle`*. After execution,* `Handle` *is no longer a valid handle for a PPL PIP Problem.*

`ppl_PIP_Problem_space_dimension(+Handle, ?Dimension_Type)`

Unifies the dimension of the vector space in which the PIP Problem referenced by `Handle` *is embedded with* `Dimension_Type`*.*

`ppl_PIP_Problem_parameter_space_dimensions(+Handle, ?Vars_List)`

Unifies `Vars_List` *with a list of variables representing the parameter space dimensions of the PIP Problem referenced by* `Handle`*.*

`ppl_PIP_Problem_constraints(+Handle, ?Constraint_System)`

Unifies `Constraint_System` *with a list of the constraints in the constraints system representing the feasible region for the PIP Problem referenced by* `Handle`*.*

`ppl_PIP_Problem_clear(+Handle)`

Resets the PIP problem referenced by `Handle` *to be the trivial problem with the feasible region the* 0*-dimensional universe.*

`ppl_PIP_Problem_add_space_dimensions_and_embed( +Handle, +Dimension_Type1, +Dimension_Type2)`

Embeds the PIP problem referenced by `handle` *in a space that is enlarged by* `dimension1` *non-parameter dimensions and* `dimension2` *parameter dimensions.*

`ppl_PIP_Problem_add_to_parameter_space_dimensions(+Handle, +Vars_List)`

Updates the PIP Problem referenced by `Handle` *so that the variables in* `Vars_List` *are added to the set of parameter space dimensions.*

`ppl_PIP_Problem_add_constraint(+Handle, +Constraint)`

Updates the PIP Problem referenced by `Handle` *so that the feasible region is represented by the original constraint system together with the constraint* `Constraint`*.*

`ppl_PIP_Problem_add_constraints(+Handle, +Constraint_System)`

Updates the PIP Problem referenced by `Handle` *so that the feasible region is represented by the original constraint system together with all the constraints in* `Constraint_System`.

`ppl_PIP_Problem_set_big_parameter_dimension(+Handle, +Dimension_Type)`

Updates the PIP Problem referenced by `Handle` *so that the dimension for the big parameter is* `Dimension_Type`.

`ppl_PIP_Problem_has_big_parameter_dimension(+Handle, +Dimension_Type)`

Succeeds if and only if the PIP Problem referenced by `Handle` *has a dimension* `dim` *for the big parameter and* `Dimension_Type` *unifies with* `dim`.

`ppl_PIP_Problem_is_satisfiable(+Handle)`

Succeeds if and only if the PIP Problem referenced by `Handle` *is satisfiable.*

`ppl_PIP_Problem_solve(+Handle, ?PIP_Problem_Status)`

Solves the PIP problem referenced by `Handle` *and unifies* `PIP_Problem_Status` *with:* `unfeasible`*, if the PIP problem is not satisfiable;* `optimized`*, if the PIP problem admits an optimal solution.*

`ppl_PIP_Problem_solution(+Handle1, ?Handle2)`

Solves the PIP problem referenced by `Handle1` *and creates a PIP tree node* Node *representing this a solution if it exists and bottom otherwise* `Handle_2` *is unified with the handle for* Sol.

`ppl_PIP_Problem_optimizing_solution(+Handle, ?PIP_Tree_Node)`

Solves the PIP problem referenced by `Handle1` *and creates a PIP tree node* Node *representing this an optimizing solution if a solution exists and bottom otherwise* `Handle_2` *is unified with the handle for* Sol.

`ppl_PIP_Problem_ascii_dump(+Handle)`

Dumps an ascii representation of the PPL internal state for the PIP problem referenced by `Handle` *on the standard output.*

`ppl_PIP_Problem_OK(+Handle)`

Succeeds only if the PIP Problem referenced by `Handle` *is well formed, i.e., if it satisfies all its implementation invariants. Useful for debugging purposes.*

`ppl_PIP_Tree_Node_swap(+Handle_1, +Handle_2)`

Swaps the PIP tree node referenced by `Handle_1` *with the one referenced by* `Handle_2`.

`ppl_PIP_Tree_Node_ascii_dump(+Handle)`

Dumps an ascii representation of the PPL internal state for the PIP tree node referenced by `Handle` *on the standard output.*

`ppl_PIP_Tree_Node_OK(+Handle)`

Succeeds only if the PIP tree node referenced by `Handle` *is well formed, i.e., if it satisfies all its implementation invariants. Useful for debugging purposes.*

`ppl_PIP_Tree_Node_constraints(+Handle, ?Constraint_System)`

Unifies `Constraint_System` *with a list of the parameter constraints in the PIP tree node referenced by* `Handle`.

`ppl_PIP_Tree_Node_artificials(+Handle, ?Artificial_Parameter_List)`

Unifies `Artificial_Parameter_List` *with a list of the artificial parameters in the PIP tree node referenced by* `Handle`.

`ppl_PIP_Tree_Node_is_bottom(+Handle)`

Succeeds if and only if `handle` *represents bottom.*

`ppl_PIP_Tree_Node_is_decision(+Handle)`

Succeeds if and only if `handle` *represents a decision node.*

`ppl_PIP_Tree_Node_is_solution(+Handle)`

Succeeds if and only if `handle` *represents a solution node.*

`ppl_PIP_Tree_Node_parametric_values(+Handle, +Var, ?Lin_Expr)`

Unifies `Lin_Expr` *with a linear expression representing the values of problem variable* `Var` *in the solution node represented by* `Handle`*. The linear expression may involve problem parameters as well as artificial parameters.*

`ppl_PIP_Tree_Node_true_child(+Handle1, ?Handle2)`

If the PIP_Tree_Node represented by `Handle1` *is a decision node unifies the PIP tree node referenced by* `Handle2` *with the child on the true branch of the PIP tree node represented by* `Handle1`*. An exception is thrown if this is not a decision node.*

`ppl_PIP_Tree_Node_false_child(+Handle1, ?Handle2)`

If the PIP_Tree_Node represented by `Handle1` *is a decision node unifies the PIP tree node referenced by* `Handle2` *with the child on the false branch of the PIP tree node represented by* `Handle1`*. An exception is thrown if this is not a decision node.*

Predicates for the C Polyhedron Domain

Here we provide a short description for each of the predicates available for the domain of C polyhedra. Note that predicates for other domains will follow a similar pattern.

Constructor, copy, conversion and destructor predicates

Constructor predicates for C polyhedra

The constructor predicates build a C polyhedron from a specification and binds the given variable to a handle for future referencing. The specification can be:

- the number of space dimensions and an atom indicating if it is to be the universe or empty element.
- a representation for the particular class of semantic geometric descriptors to which the element being built belongs. For example, a C Polyhedron can be built from a list of non-strict inequality or equality constraints or a list of equality congruences or a list of generators that contains no closure points.

`ppl_new_C_Polyhedron_from_space_dimension(+Dimension_Type, +Universe_or_Empty, -Handle)`

Builds a new C polyhedron $\mathcal{P}$ with `Dimension_Type` *dimensions; it is empty or the universe depending on whether* `Atom` *is* `empty` *or* `universe`*, respectively.* `Handle` *is unified with the handle for $\mathcal{P}$. Thus the query*

```
?- ppl_new_C_Polyhedron_from_space_dimension(3, universe, X).
```

creates the C polyhedron defining the 3-dimensional vector space $\mathbb{R}^3$ with `X` *bound to a valid handle for accessing it.*

`ppl_new_C_Polyhedron_from_constraints(+Constraint_System, -Handle)`

Builds a new C polyhedron `P` *from* `Constraint_System`*.* `Handle` *is unified with the handle for* `P`*.*

`ppl_new_C_Polyhedron_from_congruences(+Congruence_System, -Handle)`

Builds a new C polyhedron `P` *from* `Congruence_System`*.* `Handle` *is unified with the handle for* `P`*.*

`ppl_new_C_Polyhedron_from_generators(+Generator_System, -Handle)`

Builds a new C polyhedron `P` *from* `Generator_System`*.* `Handle` *is unified with the handle for* `P`*.*

Predicates that build new C polyhedra by copying or converting from other semantic geometric descriptions

Besides the constructors listed above, the library also provides:

- copy constructors that will copy an element belonging to the same class of semantic geometric descriptions
- conversion operators that build a new semantic geometric description starting from a **friend**; that is, a semantic geometric description in different class (e.g., ppl_new_Grid_from_C_Polyhedron, ppl_new_C_Polyhedron_from_BD_Shape_mpq_class, etc.).

The copy and conversion predicates have two versions, one with arity 2 for the source and target handles and one with an extra argument denoting the maximum complexity to be used in the conversion; this complexity argument is ignored when the the friend and the element being built are in the same class.

`ppl_new_C_Polyhedron_from_C_Polyhedron(+Handle_1, -Handle_2)`

Builds a new C polyhedron `P_1` *from the c polyhedron referenced by handle* `Handle_1`*.* `Handle_2` *is unified with the handle for* `P_1`*.*

`ppl_new_C_Polyhedron_from_NNC_Polyhedron(+Handle_1, -Handle_2)`

Builds a new C polyhedron `P_1` *from the nnc polyhedron referenced by handle* `Handle_1`*.* `Handle_2` *is unified with the handle for* `P_1`*.*

`ppl_new_C_Polyhedron_from_C_Polyhedron_with_complexity(+Handle, +Complexity, -Handle)`

Builds a new C polyhedron `P_1` *from the c polyhedron referenced by handle* `Handle_1` *using an algorithm whose complexity does not exceed* `Complexity`*;* `Handle_2` *is unified with the handle for* `P_1`*.*

`ppl_new_C_Polyhedron_from_NNC_Polyhedron_with_complexity(+Handle, +Complexity, -Handle)`

Builds a new C polyhedron `P_1` *from the nnc polyhedron referenced by handle* `Handle_1` *using an algorithm whose complexity does not exceed* `Complexity`*;* `Handle_2` *is unified with the handle for* `P_1`*.*

Destructor predicate

Below is the destructor predicate for the Polyhedron domain.

`ppl_delete_Polyhedron(+Handle)`

Invalidates the handle referenced by `Handle`*: this makes sure the corresponding resources will eventually be released.*

Predicates that do not change the polyhedron

Test Predicates

These predicates test the polyhedron for different properties and succeed or fail depending on the outcome.

`ppl_Polyhedron_is_empty(+Handle)`

Succeeds if and only if the polyhedron referenced by `Handle` is empty.

`ppl_Polyhedron_is_universe(+Handle)`

Succeeds if and only if the polyhedron referenced by `Handle` is the universe.

`ppl_Polyhedron_is_bounded(+Handle)`

Succeeds if and only if the polyhedron referenced by `Handle` is bounded.

`ppl_Polyhedron_contains_integer_point(+Handle)`

Succeeds if and only if the polyhedron referenced by `Handle` contains an integer point.

`ppl_Polyhedron_is_topologically_closed(+Handle)`

Succeeds if and only if the polyhedron referenced by `Handle` is topologically closed.

`ppl_Polyhedron_is_discrete(+Handle)`

Succeeds if and only if the polyhedron referenced by `Handle` is discrete.

`ppl_Polyhedron_bounds_from_above(+Handle, +Lin_Expr)`

Succeeds if and only if `Lin_Expr` is bounded from above in the polyhedron referenced by `Handle`.

`ppl_Polyhedron_bounds_from_below(+Handle, +Lin_Expr)`

Succeeds if and only if `Lin_Expr` is bounded from below in the polyhedron referenced by `Handle`.

`ppl_Polyhedron_contains_Polyhedron(+Handle_1, +Handle_2)`

Succeeds if and only if the polyhedron referenced by `Handle_2` is included in or equal to the polyhedron referenced by `Handle_1`.

`ppl_Polyhedron_strictly_contains_Polyhedron(+Handle_1, +Handle_2)`

Succeeds if and only if the polyhedron referenced by `Handle_2` is included in but not equal to the polyhedron referenced by `Handle_1`.

`ppl_Polyhedron_is_disjoint_from_Polyhedron(+Handle_1, +Handle_2)`

Succeeds if and only if the polyhedron referenced by `Handle_2` is disjoint from the polyhedron referenced by `Handle_1`.

`ppl_Polyhedron_equals_Polyhedron(+Handle_1, +Handle_2)`

Succeeds if and only if the polyhedron referenced by `Handle_1` is equal to the polyhedron referenced by `Handle_2`.

`ppl_Polyhedron_OK(+Handle)`

Succeeds only if the polyhedron referenced by `Handle` is well formed, i.e., if it satisfies all its implementation invariants. Useful for debugging purposes.

`ppl_Polyhedron_constrains(+Handle, +PPL_Var)`

Succeeds if and only if the polyhedron referenced by `Handle` constrains the dimension `PPL_Var`.

Predicates that return information about the polyhedron

These predicates will obtain more detailed information about the polyhedron unifying some of their arguments with the results.

`ppl_Polyhedron_space_dimension(+Handle, ?Dimension_Type)`

Unifies `Dimension_Type` *with the dimension of the vector space enclosing the polyhedron referenced by* `Handle`.

`ppl_Polyhedron_affine_dimension(+Handle, ?Dimension_Type)`

Unifies `Dimension_Type` *with the affine dimension of the polyhedron referenced by* `Handle`.

`ppl_Polyhedron_relation_with_constraint(+Handle, +Constraint, ?Relation_List)`

Unifies `Relation_List` *with the list of relations the polyhedron referenced by* `Handle` *has with* `Constraint`. *The possible relations are listed in the grammar rules above.*

`ppl_Polyhedron_relation_with_generator(+Handle, +Generator, ?Relation_List)`

Unifies `Relation_List` *with the list of relations the polyhedron referenced by* `Handle` *has with* `Generator`. *The possible relations are listed in the grammar rules above.*

`ppl_Polyhedron_relation_with_congruence(+Handle, +Congruence, ?Relation_List)`

Unifies `Relation_List` *with the list of relations the polyhedron referenced by* `Handle` *has with* `Congruence`. *The possible relations are listed in the grammar rules above.*

`ppl_Polyhedron_get_constraints(+Handle, ?Constraint_System)`

Unifies `Constraint_System` *with the constraints (in the form of a list) in the constraint system satisfied by the polyhedron referenced by* `Handle`.

`ppl_Polyhedron_get_congruences(+Handle, ?Congruence_System)`

Unifies `Congruence_System` *with the congruences (in the form of a list) in the congruence system satisfied by the polyhedron referenced by* `Handle`.

`ppl_Polyhedron_get_generators(+Handle, ?Generator_System)`

Unifies `Generator_System` *with the generators (in the form of a list) in the generator system for the polyhedron referenced by* `Handle`.

`ppl_Polyhedron_get_minimized_constraints(+Handle, ?Constraint_System)`

Unifies `Constraint_System` *with the constraints (in the form of a list) in the minimized constraint system satisfied by the polyhedron referenced by* `Handle`.

`ppl_Polyhedron_get_minimized_congruences(+Handle, ?Congruence_System)`

Unifies `Congruence_System` *with the congruences (in the form of a list) in the minimized congruence system for the polyhedron referenced by* `Handle`.

`ppl_Polyhedron_get_minimized_generators(+Handle, ?Generator_System)`

Unifies `Generator_System` *with the generators (in the form of a list) in the minimized generator system satisfied by the polyhedron referenced by* `Handle`.

`ppl_Polyhedron_maximize(+Handle, +Lin_Expr, ?Coeff_1, ?Coeff_2, ?Boolean)`

Succeeds if and only if polyhedron `P` *referenced by* `Handle` *is not empty and* `Lin_Expr` *is bounded from above in* `P`*.*

`Coeff_1` *is unified with the numerator of the supremum value and* `Coeff_2` *with the denominator of the supremum value. If the supremum is also the maximum,* `Boolean` *is unified with the atom* `true` *and, otherwise, unified with the atom* `false`*.*

```
ppl_Polyhedron_minimize(+Handle, +Lin_Expr, ?Coeff_1, ?Coeff_2,
?Boolean)
```

Succeeds if and only if polyhedron `P` *referenced by* `Handle` *is not empty and* `Lin_Expr` *is bounded from below in* `P`*.*

`Coeff_1` *is unified with the numerator of the infinum value and* `Coeff_2` *with the denominator of the infinum value. If the infinum is also the minimum,* `Boolean` *is unified with the atom* `true` *and, otherwise, unified with the atom* `false`*.*

```
ppl_Polyhedron_maximize_with_point(+Handle, +Lin_Expr, ?Coeff_1,
?Coeff_2, ?Boolean, ?Point)
```

Succeeds if and only if polyhedron `P` *referenced by* `Handle` *is not empty and* `Lin_Expr` *is bounded from above in* `P`*.*

`Coeff_1` *is unified with the numerator of the supremum value and* `Coeff_2` *with the denominator of the supremum value and* `Point` *with a point or closure point where* `Lin_Expr` *reaches this value. If the supremum is also the maximum,* `Boolean` *is unified with the atom* `true` *and, otherwise, unified with the atom* `false`*.*

```
ppl_Polyhedron_minimize_with_point(+Handle, +Lin_Expr, ?Coeff_1,
?Coeff_2, ?Boolean, ?Point)
```

Succeeds if and only if polyhedron `P` *referenced by* `Handle` *is not empty and* `Lin_Expr` *is bounded from below in* `P`*.*

`Coeff_1` *is unified with the numerator of the infinum value and* `Coeff_2` *with the denominator of the infinum value and* `Point` *with a point or closure point where* `Lin_Expr` *reaches this value. If the infinum is also the minimum,* `Boolean` *is unified with the atom* `true` *and, otherwise, unified with the atom* `false`*.*

```
ppl_Polyhedron_external_memory_in_bytes(+Handle, ?Number)
```

Unifies `Number` *with the size of the total memory in bytes occupied by the polyhedron referenced by* `Handle`*.*

```
ppl_Polyhedron_total_memory_in_bytes(+Handle, ?Number)
```

Unifies `Number` *with the size of the external memory in bytes occupied by the polyhedron referenced by* `Handle`*.*

Ascii dump predicate

This output predicate is useful for debugging.

```
ppl_Polyhedron_ascii_dump(+Handle)
```

Dumps an ascii representation of the PPL internal state for the polyhedron referenced by `Handle` *on the standard output.*

Space-dimension preserving predicates that may change the polyhedron

These predicates may modify the polyhedron referred to by the handle in first argument; the (dimension of the) vector space in which it is embedded is unchanged.

Predicates that may change the polyhedron by adding to its constraint or generator descriptions

Note that there are two forms of these predicates differentiated in the names by the words "add" or "refine with"; see Section *Generic Operations on Semantic Geometric Descriptors* in the main *PPL User Manual* for the differences in the semantics and therefore, the expected behavior, between these forms.

`ppl_Polyhedron_add_constraint(+Handle, +Constraint)`

Updates the polyhedron referenced by `Handle` *to one obtained by adding* `Constraint` *to its constraint system. For a C polyhedron,* `Constraint` *must be an equality or a non-strict inequality.*

`ppl_Polyhedron_add_congruence(+Handle, +Congruence)`

Updates the polyhedron referenced by `Handle` *to one obtained by adding* `Congruence` *to its congruence system. For a C polyhedron,* `Congruence` *must be an equality.*

`ppl_Polyhedron_add_generator(+Handle, +Generator)`

Updates the polyhedron referenced by `Handle` *to one obtained by adding* `Generator` *to its generator system. For a C polyhedron,* `Generator` *must be a line, ray or point.*

`ppl_Polyhedron_add_constraints( +Handle, +Constraint_System)`

Updates the polyhedron referenced by `Handle` *to one obtained by adding to its constraint system the constraints in* `Constraint_System`*. For a C polyhedron,* `Constraints` *must be a list of equalities and non-strict inequalities.*

`ppl_Polyhedron_add_congruences( +Handle, +Congruence_System)`

Updates the polyhedron referenced by `Handle` *to one obtained by adding to its congruence system the congruences in* `Congruence_System`*. For a C polyhedron,* `Congruences` *must be a list of equalities.*

`ppl_Polyhedron_add_generators( +Handle, +Generator_System)`

Updates the polyhedron referenced by `Handle` *to one obtained by adding to its generator system the generators in* `Generator_System`*. For a C polyhedron,* `Generators` *must be a list of lines, rays and points.*

`ppl_Polyhedron_refine_with_constraint( +Handle, +Constraint)`

Updates the polyhedron referenced by `Handle` *to one obtained by refining its constraint system with* `Constraint`*.*

`ppl_Polyhedron_refine_with_congruence( +Handle, +Congruence)`

Updates the polyhedron referenced by `Handle` *to one obtained by refining its congruence system with* `Congruence`*.*

`ppl_Polyhedron_refine_with_constraints( +Handle, +Constraint_System)`

Updates the polyhedron referenced by `Handle` *to one obtained by refining its constraint system with the constraints in* `Constraint_System`*.*

`ppl_Polyhedron_refine_with_congruences( +Handle, +Congruence_System)`

Updates the polyhedron referenced by `Handle` *to one obtained by refining its congruence system with the congruences in* `Congruence_System`*.*

Predicates that transform the polyhedron

These predicates enable transformations such as taking the topological closure (which for the domain of C polyhedron is the identity transformation), unconstraining a specified dimension as explained in the main *PPL User Manual* in Section *Cylindrification Operator* and several different image and preimage affine transfer relations; for details of the latter see Sections *Images and Preimages of Affine Transfer Relations* and *Generalized Affine Relations*

`ppl_Polyhedron_topological_closure_assign(+Handle)`

Assigns to the polyhedron referenced by `Handle` *its topological closure.*

`ppl_Polyhedron_unconstrain_space_dimension(+Handle, +PPL_Var)`

Modifies the polyhedron `P` *referenced by* `Handle` *by unconstraining the space dimension* `PPL_Var`*.*

`ppl_Polyhedron_unconstrain_space_dimensions(+Handle, +List_of_PPL_Var)`

Modifies the polyhedron `P` *referenced by* `Handle` *by unconstraining the space dimensions that are specified in* `List_of_PPL_Var`*. The presence of duplicates in* `List_of_PPL_Var` *is a waste but an innocuous one.*

`ppl_Polyhedron_affine_image(+Handle, +PPL_Var, +Lin_Expr, +Coeff)`

Transforms the polyhedron referenced by `Handle` *assigning the affine expression for* `Lin_Expr/Coeff` *to* `PPL_Var`*.*

`ppl_Polyhedron_affine_preimage(+Handle, +PPL_Var, +Lin_Expr, +Coeff)`

Transforms the polyhedron referenced by `Handle` *substituting the affine expression for* `Lin_Expr/Coeff` *to* `PPL_Var`*.*

`ppl_Polyhedron_bounded_affine_image(+Handle, +PPL_Var, +Lin_Expr_1, +Lin_Expr_2, +Coeff)`

Assigns to polyhedron `P` *referenced by* `Handle` *the generalized image with respect to the generalized affine transfer relation* `Lin_Expr_1/Coeff` $\leq$ `PPL_Var` $\leq$ `Lin_Expr_2/Coeff`*.*

`ppl_Polyhedron_bounded_affine_preimage(+Handle, +PPL_Var, +Lin_Expr_1, +Lin_Expr_2, +Coeff)`

Assigns to polyhedron `P` *referenced by* `Handle` *the generalized preimage with respect to the generalized affine transfer relation* `Lin_Expr_1/Coeff` $\leq$ `PPL_Var` $\leq$ `Lin_Expr_2/Coeff`*.*

`ppl_Polyhedron_generalized_affine_image(+Handle, +PPL_Var, +Relation_Symbol, +Lin_Expr, +Coeff)`

Assigns to polyhedron `P` *referenced by* `Handle` *the generalized image with respect to the generalized affine transfer relation* `PPL_Var` $\bowtie$ `Lin_Expr/Coeff`*, where* $\bowtie$ *is the symbol represented by* `Relation_Symbol`*.*

`ppl_Polyhedron_generalized_affine_preimage(+Handle, +PPL_Var, +Relation_Symbol, +Lin_Expr, +Coeff)`

Assigns to polyhedron `P` *referenced by* `Handle` *the generalized preimage with respect to the generalized affine transfer relation* `PPL_Var` $\bowtie$ `Lin_Expr/Coeff`*, where* $\bowtie$ *is the symbol represented by* `Relation_Symbol`*.*

`ppl_Polyhedron_generalized_affine_image_lhs_rhs(+Handle, +Lin_Expr_1, +Relation_Symbol, +Lin_Expr_2)`

Assigns to polyhedron `P` *referenced by* `Handle` *the generalized image with respect to the generalized affine transfer relation* `Lin_Expr_1` $\bowtie$ `Lin_Expr_2`*, where* $\bowtie$ *is the symbol represented by* `Relation_Symbol`*.*

`ppl_Polyhedron_generalized_affine_preimage_lhs_rhs(+Handle, +Lin_Expr_1, +Relation_Symbol, +Lin_Expr_2)`

Assigns to polyhedron `P` referenced by `Handle` the generalized preimage with respect to the generalized affine transfer relation `Lin_Expr_1` ⋈ `Lin_Expr_2`, where ⋈ is the symbol represented by `Relation_Symbol`.

Predicates whose results depend on more than one polyhedron

These predicates include the binary operators which will assign to the polyhedron referred to by the first argument its combination with the polyhedron referred to by the second argument as described in the main *PPL User Manual* in Sections *Intersection and Convex Polyhedral Hull* and *Convex Polyhedral Difference*; and a linear partitioning operator described below.

`ppl_Polyhedron_intersection_assign(+Handle_1, +Handle_2)`

Assigns to the polyhedron `P` referenced by `Handle_1` the intersection of `P` and the polyhedron referenced by `Handle_2`.

`ppl_Polyhedron_upper_bound_assign(+Handle_1, +Handle_2)`

Assigns to the polyhedron `P` referenced by `Handle_1` the upper bound of `P` and the polyhedron referenced by `Handle_2`.

`ppl_Polyhedron_difference_assign(+Handle_1, +Handle_2)`

Assigns to the polyhedron `P` referenced by `Handle_1` the difference of `P` and the polyhedron referenced by `Handle_2`.

`ppl_Polyhedron_time_elapse_assign(+Handle_1, +Handle_2)`

Assigns to the polyhedron `P` referenced by `Handle_1` the time elapse of `P` and the polyhedron referenced by `Handle_2`.

`ppl_Polyhedron_poly_hull(+Handle_1, +Handle_2)`

Assigns to the polyhedron `P` referenced by `Handle_1` the poly-hull of `P` and the polyhedron referenced by `Handle_2`.

`ppl_Polyhedron_poly_difference(+Handle_1, +Handle_2)`

Assigns to the polyhedron `P` referenced by `Handle_1` the poly-difference of `P` and the polyhedron referenced by `Handle_2`.

`ppl_Polyhedron_upper_bound_assign_if_exact(+Handle_1, +Handle_2)`

Succeeds if the least upper bound of the polyhedron `P_1` referenced by `Handle_1` with the polyhedron referenced by `Handle_2` is exact; in which case the least upper bound is assigned to `P_1`; fails otherwise.

`ppl_Polyhedron_poly_hull_assign_if_exact(+Handle_1, +Handle_2)`

Succeeds if the least upper bound of the polyhedron `P_1` referenced by `Handle_1` with the polyhedron referenced by `Handle_2` is exact; in which case the least upper bound is assigned to `P_1`; fails otherwise.

`ppl_Polyhedron_simplify_using_context_assign(+Handle_1, +Handle_2, ?Boolean)`

Succeeds if and only if the intersection of polyhedron `P_1` referenced by `Handle_1` and the polyhedron `P_2` referenced by `Handle_2` is non-empty. Assigns to `P_1` its meet-preserving simplification with respect to `P_2`.

`ppl_Polyhedron_linear_partition(+Handle_1, +Handle_2, -Handle_3, -Handle_4)`

`Handle_1` and `Handle_2` are handles for elements `P_1` and `P_2` in the Polyhedron domain. The predicate unifies handle `Handle_3` to a reference to the intersection of `P_1` and `P_2` and `Handle_4` to a reference to a pointset powerset of nnc polyhedra `P_4`; where `P_4` is the linear partition of `P_1` with respect to `P_2`. This predicate is only provided if the class `Pointset_Powerset_NNC_Polyhedron` has been enabled when configuring the library.

Predicates for widening and extrapolation

In addition to the above binary operators, there are also a number of widening, extrapolation and narrowing operators as described in the main *PPL User Manual* in Sections *Widening Operators*, *Widening with Tokens* and *Extrapolation Operators*. Note that for all these widening and extrapolation predicates to behave as specified the polyhedron referred to by the second argument has to be contained in (or equal to) the polyhedron referred to by the first argument.

```
ppl_Polyhedron_BHRZ03_widening_assign_with_tokens(+Handle_1, +Handle_-
2, +C_unsigned_1, ?C_unsigned_2)
```

Assigns to the polyhedron `P_1` referenced by `Handle_1` the BHRZ03-widening of `P_1` with the polyhedron referenced by `Handle_2`. The widening with tokens delay technique is applied with `C_-unsigned_1` tokens; `C_unsigned_2` is unified with the number of tokens remaining at the end of the operation.

```
ppl_Polyhedron_H79_widening_assign_with_tokens(+Handle_1, +Handle_2,
+C_unsigned_1, ?C_unsigned_2)
```

Assigns to the polyhedron `P_1` referenced by `Handle_1` the H79-widening of `P_1` with the polyhedron referenced by `Handle_2`. The widening with tokens delay technique is applied with `C_unsigned_1` tokens; `C_unsigned_2` is unified with the number of tokens remaining at the end of the operation.

```
ppl_Polyhedron_BHRZ03_widening_assign(+Handle_1, +Handle_2)
```

Assigns to the polyhedron `P_1` referenced by `Handle_1` the BHRZ03-widening of `P_1` with the polyhedron referenced by `Handle_2`.

```
ppl_Polyhedron_H79_widening_assign(+Handle_1, +Handle_2)
```

Assigns to the polyhedron `P_1` referenced by `Handle_1` the H79-widening of `P_1` with the polyhedron referenced by `Handle_2`.

```
ppl_Polyhedron_widening_assign_with_tokens(+Handle_1, +Handle_2, +C_-
unsigned_1, ?C_unsigned_2)
```

Same as predicate `ppl_Polyhedron_H79_widening_assign_with_tokens`/4

```
ppl_Polyhedron_widening_assign(+Handle_1, +Handle_2)
```

Same as predicate `ppl_Polyhedron_H79_widening_assign`/2

```
ppl_Polyhedron_limited_BHRZ03_extrapolation_assign_with_-
tokens(+Handle_1, +Handle_2, +Constraint_System, +C_unsigned_1, ?C_-
unsigned_2)
```

Assigns to the polyhedron `P_1` referenced by `Handle_1` the BHRZ03-widening of `P_1` with the polyhedron referenced by `Handle_2` intersected with the constraints in `Constraint_System` that are satisfied by all the points of `P_1`. The widening with tokens delay technique is applied with `C_unsigned_1` tokens; `C_unsigned_2` is unified with the number of tokens remaining at the end of the operation.

```
ppl_Polyhedron_bounded_BHRZ03_extrapolation_assign_with_-
tokens(+Handle_1, +Handle_2, +Constraint_System, +C_unsigned_1, ?C_-
unsigned_2)
```

Assigns to the polyhedron `P_1` referenced by `Handle_1` the BHRZ03-widening of `P_1` with the polyhedron referenced by `Handle_2` intersected with the constraints in `Constraint_System` that are satisfied by all the points of `P_1`, further intersected with the smallest box containing `P_1`. The widening with tokens delay technique is applied with `C_unsigned_1` tokens; `C_unsigned_2` is unified with the number of tokens remaining at the end of the operation.

```
ppl_Polyhedron_limited_H79_extrapolation_assign_with_tokens(+Handle_1,
+Handle_2, +Constraint_System, +C_unsigned_1, ?C_unsigned_2)
```

Assigns to the polyhedron `P_1` referenced by `Handle_1` the H79-widening of `P_1` with the polyhedron referenced by `Handle_2` intersected with the constraints in `Constraint_System` that are satisfied by all the points of `P_1`. The widening with tokens delay technique is applied with `C_unsigned_1` tokens; `C_unsigned_2` is unified with the number of tokens remaining at the end of the operation.

```
ppl_Polyhedron_bounded_H79_extrapolation_assign_with_tokens(+Handle_1,
+Handle_2, +Constraint_System, +C_unsigned_1, ?C_unsigned_2)
```

Assigns to the polyhedron `P_1` referenced by `Handle_1` the H79-widening of `P_1` with the polyhedron referenced by `Handle_2` intersected with the constraints in `Constraint_System` that are satisfied by all the points of `P_1`, further intersected with the smallest box containing `P_1`. The widening with tokens delay technique is applied with `C_unsigned_1` tokens; `C_unsigned_2` is unified with the number of tokens remaining at the end of the operation.

```
ppl_Polyhedron_limited_BHRZ03_extrapolation_assign(+Handle_1,
+Handle_2, +Constraint_System)
```

Assigns to the polyhedron `P_1` referenced by `Handle_1` the BHRZ03-widening of `P_1` with the polyhedron referenced by `Handle_2` intersected with the constraints in `Constraint_System` that are satisfied by all the points of `P_1`.

```
ppl_Polyhedron_bounded_BHRZ03_extrapolation_assign(+Handle_1,
+Handle_2, +Constraint_System)
```

Assigns to the polyhedron `P_1` referenced by `Handle_1` the BHRZ03-widening of `P_1` with the polyhedron referenced by `Handle_2` intersected with the constraints in `Constraint_System` that are satisfied by all the points of `P_1`, further intersected with the smallest box containing `P_1`.

```
ppl_Polyhedron_limited_H79_extrapolation_assign(+Handle_1, +Handle_2,
+Constraint_System)
```

Assigns to the polyhedron `P_1` referenced by `Handle_1` the H79-widening of `P_1` with the polyhedron referenced by `Handle_2` intersected with the constraints in `Constraint_System` that are satisfied by all the points of `P_1`.

```
ppl_Polyhedron_bounded_H79_extrapolation_assign(+Handle_1, +Handle_2,
+Constraint_System)
```

Assigns to the polyhedron `P_1` referenced by `Handle_1` the H79-widening of `P_1` with the polyhedron referenced by `Handle_2` intersected with the constraints in `Constraint_System` that are satisfied by all the points of `P_1`, further intersected with the smallest box containing `P_1`.

Predicates that may modify the vector space

These predicates enable the modification of the vector space of the polyhedron referred to in the first argument.

Predicate for concatenation

For more information on this operation, see Section *Concatenating Polyhedra*, of the main *PPL User Manual*.

`ppl_Polyhedron_concatenate_assign(+Handle_1, +Handle_2)`

Assigns to the polyhedron `P` *referenced by* `Handle_1` *the concatenation of* `P` *and the polyhedron referenced by* `Handle_2`*.*

Predicates for mapping dimensions or changing the vector space

These predicates enable the modification of the vector space of the polyhedron referred to in the first argument. These predicates enable the modification of the vector space of the polyhedron referred to in the first argument. Detailed descriptions of these can be found in the main *PPL User Manual* in Sections *Adding New Dimensions to the Vector Space*, *Removing Dimensions from the Vector Space*, *Mapping the Dimensions of the Vector Space*, *Expanding One Dimension of the Vector Space to Multiple Dimensions* and *Folding Multiple Dimensions of the Vector Space into One Dimension*.

`ppl_Polyhedron_add_space_dimensions_and_embed(+Handle, +Dimension_Type)`

Adds `Dimension_Type` *new dimensions to the space enclosing the polyhedron* `P` *referenced by* `Handle` *and and_embeds* `P` *in this space.*

`ppl_Polyhedron_add_space_dimensions_and_project(+Handle, +Dimension_Type)`

Adds `Dimension_Type` *new dimensions to the space enclosing the polyhedron* `P` *referenced by* `Handle` *and and_projects* `P` *in this space.*

`ppl_Polyhedron_remove_space_dimensions(+Handle, +List_of_PPL_Vars)`

Removes from the vector space enclosing the polyhedron `P` *referenced by* `Handle` *the space dimensions that are specified in* `List_of_PPL_Var`*. The presence of duplicates in* `List_of_PPL_Var` *is a waste but an innocuous one.*

`ppl_Polyhedron_remove_higher_space_dimensions(+Handle, +Dimension_Type)`

Removes the higher dimensions from the vector space enclosing the polyhedron `P` *referenced by* `Handle` *so that, upon successful return, the new space dimension is* `Dimension_Type`*.*

`ppl_Polyhedron_expand_space_dimension(+Handle, +PPL_Var, +Dimension_Type)`

Expands the `PPL_Var-th` *dimension of the vector space enclosing the polyhedron referenced by* `Handle` *to* `Dimension_Type` *new space dimensions.*

`ppl_Polyhedron_fold_space_dimensions(+Handle, +List_of_PPL_Vars, +PPL_Var)`

Modifies the polyhedron referenced by `Handle` *by folding the space dimensions contained in* `List_of_PPL_Vars` *into dimension* `PPL_Var`*. The presence of duplicates in* `List_of_PPL_Vars` *is a waste but an innocuous one.*

`ppl_Polyhedron_map_space_dimensions(+Handle, +P_Func)`

Remaps the dimensions of the vector space according to a partial function. This function is specified by means of the `P_Func`*, which has* `n` *entries. The result is undefined if* `P_Func` *does not encode a partial function.*

Ad hoc Predicates for Other Domains

Extra Predicates Specifically for the Pointset Powerset Domains

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. For more information on this construct, see Section *The Powerset Domain* in the main *PPL User Manual*.

Besides the predicates that are available in all semantic geometric descriptions (whose documentation is not repeated here), the powerset domain also provides several ad hoc predicates. These are specified below, instantiated for the PPL domain Pointset_Powerset_C_Polyhedron. Note that predicates for other pointset powerset domains will follow similar patterns.

Predicates for pointset powerset iterators and disjuncts.

Iterators allow the user to examine and change individual elements (called here disjuncts) of a pointset powerset. Detailed descriptions for adding and removing disjuncts can be found in the main *PPL User Manual* in Section *Adding a Disjunct*. The following predicates support useful operations on these iterators and disjuncts via the usual handles.

`ppl_new_Pointset_Powerset_C_Polyhedron_iterator_from_-iterator(+Iterator_1, -Iterator_2)`

Builds a new iterator `it` *from the iterator referenced by* `Iterator_1`*.* `Iterator_2` *is unified with the handle for* `it`*.*

`ppl_Pointset_Powerset_C_Polyhedron_begin_iterator(+Handle, -Iterator)`

Unifies `Iterator` *with a handle to an iterator "pointing" to the beginning of the sequence of disjuncts of the powerset referred to by* `Handle`*.*

`ppl_Pointset_Powerset_C_Polyhedron_end_iterator(+Handle, -Iterator)`

Unifies `Iterator` *with a handle to an iterator "pointing" to the end of the sequence of disjuncts of the powerset referred to by* `Handle`*.*

`ppl_Pointset_Powerset_C_Polyhedron_iterator_equals_-iterator(+Iterator_1, +Iterator_2)`

Succeeds if and only if the iterator referenced by `Iterator_1` *is equal to the iterator referenced by* `Iterator_2`*.*

`ppl_Pointset_Powerset_C_Polyhedron_iterator_increment(+Iterator)`

Increments the iterator referenced by `Iterator` *so that it "points" to the next disjunct.*

`ppl_Pointset_Powerset_C_Polyhedron_iterator_decrement(+Iterator)`

Decrements the iterator referenced by `Iterator` *so that it "points" to the previous disjunct.*

`ppl_Pointset_Powerset_C_Polyhedron_iterator_get_disjunct(+Iterator, -Handle)`

Unifies with `Handle` *a reference to the disjunct referred to by* `Iterator_1`*.*

`ppl_delete_Pointset_Powerset_C_Polyhedron_iterator(+Iterator)`

Invalidates the handle referenced by `Iterator`*: this makes sure the corresponding resources will eventually be released.*

`ppl_Pointset_Powerset_C_Polyhedron_add_disjunct(+Handle_1, +Handle_2)`

Adds to the pointset powerset referenced by `Handle_1` a disjunct referred to by `Handle_2`.

`ppl_Pointset_Powerset_C_Polyhedron_drop_disjunct(+Handle, +Iterator)`

If `it` is the iterator referred to by `Iterator`, drops from the pointset powerset referenced by `Handle` the disjunct pointed to by `it` and assigns to `it` an iterator to the next disjunct.

`ppl_Pointset_Powerset_C_Polyhedron_drop_disjuncts(+Handle, +Iterator_1, +Iterator_2)`

If `it_1` and `it_2` are the iterators referred to by `Iterator_1` and `Iterator_2`, respectively, drops from the pointset powerset referenced by `Handle` all the disjuncts from `it_1` to `it_2` (excluded).

Other Ad Hoc Predicates for the pointset powerset domains.

Collected here are some other predicates that are specific to pointset powersets of C polyhedra; these provide operations for simplifying the powerset, geometric comparisons and widening and extrapolation. Detailed descriptions of these can be found in the main *PPL User Manual* in Sections *Geometric Comparisons*, *Certificate-Based Widenings*, *Powerset Extrapolation Operators*.

`ppl_Pointset_Powerset_C_Polyhedron_pairwise_reduce(+Handle)`

Assigns the result of pairwise reduction on the pointset powerset referenced by `Handle`.

`ppl_Pointset_Powerset_C_Polyhedron_omega_reduce(+Handle)`

Assigns the result of omega reduction on the pointset powerset referenced by `Handle`.

`ppl_Pointset_Powerset_C_Polyhedron_geometrically_covers_Pointset_Powerset_C_Polyhedron(+Handle_1, +Handle_2)`

Succeeds if and only if the pointset powerset referenced by `Handle_2` geometrically covers the pointset powerset referenced by `Handle_1`; see Section Geometric Comparisons in the main PPL User Manual.

`ppl_Pointset_Powerset_C_Polyhedron_geometrically_equals_Pointset_Powerset_C_Polyhedron(+Handle_1, +Handle_2)`

Succeeds if and only if the pointset powerset referenced by `Handle_2` geometrically equals the pointset powerset referenced by `Handle_1`; see Section Geometric Comparisons in the main PPL User Manual.

`ppl_Pointset_Powerset_C_Polyhedron_BHZ03_BHRZ03_BHRZ03_widening_assign(+Handle_1, +Handle_2)`

Assigns to the pointset powerset `P_1` referenced by `Handle_1` the BHZ03-widening between `P_1` and the pointset powerset referenced by `Handle_2`, using the BHRZ03-widening certified by the convergence certificate for BHRZ03.

`ppl_Pointset_Powerset_C_Polyhedron_BHZ03_H79_H79_widening_assign(+Handle_1, +Handle_2)`

Assigns to the pointset powerset `P_1` referenced by `Handle_1` the BHZ03-widening between `P_1` and the pointset powerset referenced by `Handle_2`, using the H79-widening certified by the convergence certificate for H79.

`ppl_Pointset_Powerset_C_Polyhedron_BGP99_BHRZ03_extrapolation_assign(+Handle_1, +Handle_2, C_unsigned)`

Assigns to the pointset powerset `P_1` referenced by `Handle_1` the result of applying the BGP99 extrapolation operator between `P_1` and the pointset powerset referenced by `Handle_2`, using the BHRZ03-widening and the cardinality threshold `C_unsigned`.

`ppl_Pointset_Powerset_C_Polyhedron_BGP99_H79_extrapolation_-assign(+Handle_1, +Handle_2, C_unsigned)`

Assigns to the pointset powerset `P_1` referenced by `Handle_1` the result of applying the BGP99 extrapolation operator between `P_1` and the pointset powerset referenced by `Handle_2`, using the H79-widening and the cardinality threshold `C_unsigned`.

Compilation and Installation

When the Parma Polyhedra Library is configured, it tests for the existence of each supported Prolog system. If a supported Prolog system is correctly installed in a standard location, things are arranged so that the corresponding interface is built and installed.

The Prolog interface files are all installed in the directory `prefix/lib/ppl`. Since this includes shared and dynamically loaded libraries, you must make your dynamic linker/loader aware of this fact. If you use a GNU/Linux system, try the commands `man ld.so` and `man ldconfig` for more information.

As an option, the Prolog interface can track the creation and disposal of polyhedra. In fact, differently from native Prolog data, PPL polyhedra must be explicitly disposed and forgetting to do so is a very common mistake. To enable this option, configure the library adding `-DPROLOG_TRACK_ALLOCATION` to the options passed to the C++ compiler. Your configure command would then look like

```
path/to/configure --with-cxxflags="-DPROLOG_TRACK_ALLOCATION" ...
```

System-Dependent Features

CIAO Prolog

The Ciao Prolog interface to the PPL is available both as 'PPL enhanced' Ciao Prolog interpreter and as a library that can be linked to Ciao Prolog programs. Only Ciao Prolog versions 1.10 #5 and later are supported.

So that it can be used with the Ciao Prolog PPL interface, the Ciao Prolog installation must be configured with the `--disable-regs` option.

The `ppl_ciao` Executable

If an appropriate version of Ciao Prolog is installed on the machine on which you compiled the library, the command `make install` will install the executable `ppl_ciao` in the directory `prefix/bin`. The `ppl_ciao` executable is simply the Ciao Prolog interpreter with the Parma Polyhedra Library linked in. The only thing you should do to use the library is to call `ppl_initialize/0` before any other PPL predicate and to call `ppl_finalize/0` when you are done with the library.

Linking the Library To Ciao Prolog Programs

In order to allow linking Ciao Prolog programs to the PPL, the following files are installed in the directory `prefix/lib/ppl`: `ppl_ciao.pl` contains the required foreign declarations; `libppl_ciao.*` contain the executable code for the Ciao Prolog interface in various formats (static library, shared library, libtool library). If your Ciao Prolog program is constituted by, say, `source1.pl` and `source2.pl` and you want to create the executable `myprog`, your compilation command may look like

```
ciaoc -o myprog prefix/lib/ppl/ppl_ciao.pl ciao_pl_check.pl \
  -L '-Lprefix/lib/ppl -lppl_ciao -Lprefix/lib -lppl -lgmpxx -lgmp -lstdc++'
```

GNU Prolog

The GNU Prolog interface to the PPL is available both as a 'PPL enhanced' GNU Prolog interpreter and as a library that can be linked to GNU Prolog programs. The only GNU Prolog version that is known to work is a patched version of the 'unstable version' tagged 20040608 (which unpacks to a directory called gprolog-1.2.18). The patch is contained in the interfaces/Prolog/GNU/README file of the PPL's distribution.

So that it can be used with the GNU Prolog PPL interface (and, for that matter, with any foreign code), the GNU Prolog installation must be configured with the --disable-regs option.

The ppl_gprolog Executable

If an appropriate version of GNU Prolog is installed on the machine on which you compiled the library, the command make install will install the executable ppl_gprolog in the directory prefix/bin. The ppl_gprolog executable is simply the GNU Prolog interpreter with the Parma Polyhedra Library linked in. The only thing you should do to use the library is to call ppl_initialize/0 before any other PPL predicate and to call ppl_finalize/0 when you are done with the library.

Linking the Library To GNU Prolog Programs

In order to allow linking GNU Prolog programs to the PPL, the following files are installed in the directory prefix/lib/ppl: ppl_gprolog.pl contains the required foreign declarations; libppl_gprolog.* contain the executable code for the GNU Prolog interface in various formats (static library, shared library, libtool library). If your GNU Prolog program is constituted by, say, source1.pl and source2.pl and you want to create the executable myprog, your compilation command may look like

```
gplc -o myprog prefix/lib/ppl/ppl_gprolog.pl source1.pl source2.pl \
  -L '-Lprefix/lib/ppl -lppl_gprolog -Lprefix/lib -lppl -lgmpxx -lgmp -lstdc++'
```

GNU Prolog uses several stacks to execute a Prolog program each with a pre-defined default size. If the size of a stack is too small for the application an overflow will occur. To change the default size of a stack, the user has to set the value of the relevant environment variable; in particular, to execute some of the tests, we found it necessary to increase the size of GLOBALSZ. Thus, for the above example, the compilation command would be

```
GLOBALSZ=32768 gplc -o myprog prefix/lib/ppl/ppl_gprolog.pl source1.pl source2.pl
       \
  -L '-Lprefix/lib/ppl -lppl_gprolog -Lprefix/lib -lppl -lgmpxx -lgmp -lstdc++'
```

More information on adjusting the size of the stacks can be found in Section 3.3 in the GNU Prolog Manual

SICStus Prolog

The SICStus Prolog interface to the PPL is available both as a statically linked module or as a dynamically linked one. Only SICStus Prolog versions 3.9.1 and later are supported.

The Statically Linked ppl_sicstus Executable

If an appropriate version of SICStus Prolog is installed on the machine on which you compiled the library, the command make install will install the executable ppl_sicstus in the directory prefix/bin. The ppl_sicstus executable is simply the SICStus Prolog system with the Parma Polyhedra Library statically linked. The only thing you should do to use the library is to load prefix/lib/ppl/ppl_sicstus.pl.

Loading the SICStus Interface Dynamically

In order to dynamically load the library from SICStus Prolog you should simply load `prefix/lib/ppl/ppl_sicstus.pl`. Notice that, for dynamic linking to work, you should have configured the library with the `--enable-shared` option.

SWI-Prolog

The SWI-Prolog interface to the PPL is available both as a statically linked module or as a dynamically linked one. Only SWI-Prolog version 5.6.0 and later versions are supported.

The `ppl_pl` Executable

If an appropriate version of SWI-Prolog is installed on the machine on which you compiled the library, the command `make install` will install the executable `ppl_pl` in the directory `prefix/bin`. The `ppl_pl` executable is simply the SWI-Prolog shell with the Parma Polyhedra Library statically linked: from within `ppl_pl` all the services of the library are available without further action.

Loading the SWI-Prolog Interface Dynamically

In order to dynamically load the library from SWI-Prolog you should simply load `prefix/lib/ppl/ppl_swiprolog.pl`. This will invoke `ppl_initialize/0` and `ppl_finalize/0` automatically. Alternatively, you can load the library directly with

```
:- load_foreign_library('prefix/lib/ppl/libppl_swiprolog').
```

This will call `ppl_initialize/0` automatically. Analogously,

```
:- unload_foreign_library('prefix/lib/ppl/libppl_swiprolog').
```

will, as part of the unload process, invoke `ppl_finalize/0`.

Notice that, for dynamic linking to work, you should have configured the library with the `--enable-shared` option.

XSB

The XSB Prolog interface to the PPL is available as a dynamically linked module. Only some CVS versions of XSB starting from 2 July 2005 are known to work. CVS versions starting from 11 November 2005 are known not to work.

In order to dynamically load the library from XSB you should load the `ppl_xsb` module and import the predicates you need. For things to work, you may have to copy the files `prefix/lib/ppl/ppl_xsb.xwam` and `prefix/lib/ppl/ppl_xsb.so` in your current directory or in one of the XSB library directories.

YAP

The YAP Prolog interface to the PPL is available as a dynamically linked module. Only YAP versions following 5.1.0 and CVS HEAD versions starting from 4 January 2006 are supported. Notice that support for unbounded integers in YAP

is young and may have errors that could affect programs using the PPL (see, e.g., http://www.cs.unipr.it/pipermail/ppl-devel/2006-January/007780.html).

In order to dynamically load the library from YAP you should simply load `prefix/lib/ppl/ppl_-yap.pl`. This will invoke `ppl_initialize/0` automatically; it is the programmer's responsibility to call `ppl_finalize/0` when the PPL library is no longer needed. Notice that, for dynamic linking to work, you should have configured the library with the `--enable-shared` option.

2 GNU General Public License

Version 3, 29 June 2007

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4 Module Index

4.1 Modules

Here is a list of all modules:

Prolog Language Interface 45

5 Namespace Index

5.1 Namespace List

Here is a list of all namespaces with brief descriptions:

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Parma_Polyhedra_Library::Interfaces 46

Parma_Polyhedra_Library::Interfaces::Prolog 46

6 Class Index

6.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

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- **Parma_Polyhedra_Library::Interfaces::Prolog::non_linear** 76
- **Parma_Polyhedra_Library::Interfaces::Prolog::not_a_boolean** 77
- **Parma_Polyhedra_Library::Interfaces::Prolog::not_a_bounded_integer_type_overflow** 78
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7.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

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Parma_Polyhedra_Library::Interfaces::Prolog::internal_exception 73

Parma_Polyhedra_Library::Interfaces::Prolog::non_linear 76

Parma_Polyhedra_Library::Interfaces::Prolog::not_a_boolean 77

Parma_Polyhedra_Library::Interfaces::Prolog::not_a_bounded_integer_type_overflow 78

Parma_Polyhedra_Library::Interfaces::Prolog::not_a_bounded_integer_type_-representation 79

Parma_Polyhedra_Library::Interfaces::Prolog::not_a_bounded_integer_type_width 80

Parma_Polyhedra_Library::Interfaces::Prolog::not_a_complexity_class 81

Parma_Polyhedra_Library::Interfaces::Prolog::not_a_control_parameter_name 82

Parma_Polyhedra_Library::Interfaces::Prolog::not_a_control_parameter_value 83

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8.1 File List

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9 Module Documentation

9.1 Prolog Language Interface

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

10 Namespace Documentation

10.1 Parma_Polyhedra_Library Namespace Reference

Namespaces

- namespace Interfaces

10.2 Parma_Polyhedra_Library::Interfaces Namespace Reference

Namespaces

- namespace Prolog

10.3 Parma_Polyhedra_Library::Interfaces::Prolog Namespace Reference

Classes

- class internal_exception
- class Prolog_unsigned_out_of_range
- class non_linear
- class not_an_integer
- class not_unsigned_integer
- class not_a_boolean
- class not_a_variable
- class not_an_optimization_mode
- class not_a_bounded_integer_type_width
- class not_a_bounded_integer_type_representation
- class not_a_bounded_integer_type_overflow
- class not_a_complexity_class
- class not_a_control_parameter_name
- class not_a_control_parameter_value
- class not_a_pip_problem_control_parameter_name
- class not_a_pip_problem_control_parameter_value
- class not_universe_or_empty
- class not_a_relation
- class not_a_nil_terminated_list
- class PPL_integer_out_of_range
- class ppl_handle_mismatch
- class unknown_interface_error
- struct Prolog_Interface_Atom
- class timeout_exception
- class deterministic_timeout_exception

Enumerations

- enum Boundary_Kind { LOWER_BOUNDARY, UPPER_BOUNDARY }

Functions

- void handle_exception (const Prolog_unsigned_out_of_range &e)
- void handle_exception (const not_unsigned_integer &e)
- void handle_exception (const not_a_boolean &e)
- void handle_exception (const non_linear &e)
- void handle_exception (const not_a_variable &e)
- void handle_exception (const not_an_integer &e)
- void handle_exception (const ppl_handle_mismatch &e)
- void handle_exception (const not_an_optimization_mode &e)

- void handle_exception (const not_a_complexity_class &e)
- void handle_exception (const not_a_bounded_integer_type_width &e)
- void handle_exception (const not_a_bounded_integer_type_representation &e)
- void handle_exception (const not_a_bounded_integer_type_overflow &e)
- void handle_exception (const not_a_control_parameter_name &e)
- void handle_exception (const not_a_control_parameter_value &e)
- void handle_exception (const not_a_pip_problem_control_parameter_name &e)
- void handle_exception (const not_a_pip_problem_control_parameter_value &e)
- void handle_exception (const not_universe_or_empty &e)
- void handle_exception (const not_a_relation &e)
- void handle_exception (const not_a_nil_terminated_list &e)
- void handle_exception (const PPL_integer_out_of_range &e)
- void handle_exception (const unknown_interface_error &e)
- void handle_exception (const std::overflow_error &e)
- void handle_exception (const std::domain_error &e)
- void handle_exception (const std::length_error &e)
- void handle_exception (const std::invalid_argument &e)
- void handle_exception (const std::logic_error &e)
- void handle_exception (const std::bad_alloc &)
- void handle_exception (const std::exception &e)
- void handle_exception ()
- void handle_exception (const timeout_exception &)
- void handle_exception (const deterministic_timeout_exception &)
- Prolog_term_ref variable_term (dimension_type varid)
- template<typename U >
  U term_to_unsigned (Prolog_term_ref t, const char *where)
- Prolog_atom term_to_boolean (Prolog_term_ref t, const char *where)
- Prolog_atom term_to_universe_or_empty (Prolog_term_ref t, const char *where)
- Prolog_term_ref interval_term (const Parma_Polyhedra_Library::Rational_Box::interval_type &i)
- Prolog_atom term_to_complexity_class (Prolog_term_ref t, const char *where)
- Prolog_atom term_to_bounded_integer_type_width (Prolog_term_ref t, const char *where)
- Prolog_atom term_to_bounded_integer_type_representation (Prolog_term_ref t, const char *where)
- Prolog_atom term_to_bounded_integer_type_overflow (Prolog_term_ref t, const char *where)
- template<typename T >
  T * term_to_handle (Prolog_term_ref t, const char *where)
- bool term_to_boundary (Prolog_term_ref t_b, Boundary_Kind kind, bool &finite, bool &closed, Parma_Polyhedra_Library::Coefficient &n, Parma_Polyhedra_Library::Coefficient &d)
- Parma_Polyhedra_Library::Relation_Symbol term_to_relation_symbol (Prolog_term_ref t_r, const char *where)
- Parma_Polyhedra_Library::Coefficient integer_term_to_Coefficient (Prolog_term_ref t)
- Prolog_term_ref Coefficient_to_integer_term (const Parma_Polyhedra_Library::Coefficient &n)
- bool unify_long (Prolog_term_ref t, long l)
- bool unify_ulong (Prolog_term_ref t, unsigned long l)
- Parma_Polyhedra_Library::Linear_Expression build_linear_expression (Prolog_term_ref t, const char *where)
- Parma_Polyhedra_Library::Constraint build_constraint (Prolog_term_ref t, const char *where)
- Parma_Polyhedra_Library::Congruence build_congruence (Prolog_term_ref t, const char *where)
- Parma_Polyhedra_Library::Generator build_generator (Prolog_term_ref t, const char *where)
- Parma_Polyhedra_Library::Grid_Generator build_grid_generator (Prolog_term_ref t, const char *where)

- Prolog_term_ref get_linear_expression (const Parma_Polyhedra_Library::Linear_Expression &le)
- Prolog_term_ref constraint_term (const Parma_Polyhedra_Library::Constraint &c)
- Prolog_term_ref congruence_term (const Parma_Polyhedra_Library::Congruence &cg)
- Prolog_term_ref generator_term (const Parma_Polyhedra_Library::Generator &g)
- Prolog_term_ref grid_generator_term (const Parma_Polyhedra_Library::Grid_Generator &g)
- Parma_Polyhedra_Library::Variable term_to_Variable (Prolog_term_ref t, const char ∗where)
- Parma_Polyhedra_Library::Coefficient term_to_Coefficient (Prolog_term_ref t, const char ∗where)
- Prolog_atom term_to_optimization_mode (Prolog_term_ref t, const char ∗where)
- Prolog_atom term_to_control_parameter_name (Prolog_term_ref t, const char ∗where)
- Prolog_atom term_to_control_parameter_value (Prolog_term_ref t, const char ∗where)
- Prolog_atom term_to_pip_problem_control_parameter_name (Prolog_term_ref t, const char ∗where)
- Prolog_atom term_to_pip_problem_control_parameter_value (Prolog_term_ref t, const char ∗where)
- void check_nil_terminating (Prolog_term_ref t, const char ∗where)
- Prolog_term_ref Prolog_atom_term_from_string (const char ∗s)
- Prolog_term_ref Coefficient_to_integer_term (const Coefficient &n)
- template<typename R >
  Prolog_term_ref get_homogeneous_expression (const R &r)
- Prolog_term_ref get_linear_expression (const Linear_Expression &le)
- Prolog_term_ref constraint_term (const Constraint &c)
- Prolog_term_ref congruence_term (const Congruence &cg)
- Prolog_term_ref generator_term (const Generator &g)
- Prolog_term_ref grid_generator_term (const Grid_Generator &g)
- Prolog_term_ref artificial_parameter_term (const PIP_Tree_Node::Artificial_Parameter &art)
- dimension_type max_representable_dimension (dimension_type d)
- bool term_to_boundary (Prolog_term_ref t_b, Boundary_Kind kind, bool &finite, bool &closed, Coefficient &n, Coefficient &d)
- Prolog_atom term_to_relation (Prolog_term_ref t, const char ∗where)
- Prolog_term_ref rational_term (const Rational_Box::interval_type::boundary_type &q)
- Prolog_term_ref interval_term (const Rational_Box::interval_type &i)

Variables

- Prolog_atom a_nil
- Prolog_atom a_dollar_VAR
- Prolog_atom a_plus
- Prolog_atom a_minus
- Prolog_atom a_asterisk
- Prolog_atom a_slash
- Prolog_atom a_less_than
- Prolog_atom a_equal_less_than
- Prolog_atom a_equal
- Prolog_atom a_greater_than_equal
- Prolog_atom a_greater_than
- Prolog_atom a_is_congruent_to
- Prolog_atom a_modulo
- Prolog_atom a_line
- Prolog_atom a_ray
- Prolog_atom a_point

- Prolog_atom a_closure_point
- Prolog_atom a_grid_line
- Prolog_atom a_parameter
- Prolog_atom a_grid_point
- Prolog_atom a_is_disjoint
- Prolog_atom a_strictly_intersects
- Prolog_atom a_is_included
- Prolog_atom a_saturates
- Prolog_atom a_subsumes
- Prolog_atom a_c
- Prolog_atom a_empty
- Prolog_atom a_o
- Prolog_atom a_i
- Prolog_atom a_minf
- Prolog_atom a_pinf
- Prolog_atom a_polynomial
- Prolog_atom a_simplex
- Prolog_atom a_any
- Prolog_atom a_bits_8
- Prolog_atom a_bits_16
- Prolog_atom a_bits_32
- Prolog_atom a_bits_64
- Prolog_atom a_bits_128
- Prolog_atom a_unsigned
- Prolog_atom a_signed_2_complement
- Prolog_atom a_overflow_wraps
- Prolog_atom a_overflow_undefined
- Prolog_atom a_overflow_impossible
- Prolog_atom a_true
- Prolog_atom a_false
- const Prolog_Interface_Atom prolog_interface_atoms [ ]
- Prolog_atom out_of_memory_exception_atom
- Prolog_atom a_divided_by
- Prolog_atom a_universe
- Prolog_atom a_max
- Prolog_atom a_min
- Prolog_atom a_unfeasible
- Prolog_atom a_unbounded
- Prolog_atom a_optimized
- Prolog_atom a_pricing
- Prolog_atom a_pricing_steepest_edge_float
- Prolog_atom a_pricing_steepest_edge_exact
- Prolog_atom a_pricing_textbook
- Prolog_atom a_cutting_strategy
- Prolog_atom a_cutting_strategy_first
- Prolog_atom a_cutting_strategy_deepest
- Prolog_atom a_cutting_strategy_all
- Prolog_atom a_pivot_row_strategy
- Prolog_atom a_pivot_row_strategy_first
- Prolog_atom a_pivot_row_strategy_max_column

- Prolog_atom a_time_out
- Prolog_atom a_out_of_memory
- Prolog_atom a_ppl_overflow_error
- Prolog_atom a_ppl_domain_error
- Prolog_atom a_ppl_length_error
- Prolog_atom a_ppl_invalid_argument
- Prolog_atom a_ppl_logic_error
- Prolog_atom a_ppl_representation_error
- Prolog_atom a_expected
- Prolog_atom a_found
- Prolog_atom a_where
- Prolog_atom timeout_exception_atom
- bool Prolog_interface_initialized = false

10.3.1 Enumeration Type Documentation

10.3.1.1 enum Parma_Polyhedra_Library::Interfaces::Prolog::Boundary_Kind

Enumerator:

LOWER_BOUNDARY

UPPER_BOUNDARY

Definition at line 700 of file ppl_prolog_common.defs.hh.

10.3.2 Function Documentation

10.3.2.1 Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::artificial_-parameter_term (const PIP_Tree_Node::Artificial_Parameter & *art*)

Definition at line 1399 of file ppl_prolog_common.cc.

Referenced by ppl_PIP_Tree_Node_artificials().

10.3.2.2 Congruence Parma_Polyhedra_Library::Interfaces::Prolog::build_congruence (Prolog_term_ref *t*, const char * *where*)

Definition at line 1075 of file ppl_prolog_common.cc.

10.3.2.3 Constraint Parma_Polyhedra_Library::Interfaces::Prolog::build_constraint (Prolog_term_ref *t*, const char * *where*)

Definition at line 1002 of file ppl_prolog_common.cc.

Referenced by ppl_MIP_Problem_add_constraint(), ppl_MIP_Problem_add_constraints(), ppl_new_-MIP_Problem(), ppl_new_PIP_Problem(), ppl_PIP_Problem_add_constraint(), and ppl_PIP_Problem_-add_constraints().

10.3.2.4 Generator Parma_Polyhedra_Library::Interfaces::Prolog::build_generator (Prolog_term_ref *t*, const char * *where*)

Definition at line 1139 of file ppl_prolog_common.cc.

Referenced by ppl_MIP_Problem_evaluate_objective_function().

10.3.2.5 Grid_Generator Parma_Polyhedra_Library::Interfaces::Prolog::build_grid_generator (Prolog_term_ref *t*, const char * *where*)

Definition at line 1176 of file ppl_prolog_common.cc.

10.3.2.6 Linear_Expression Parma_Polyhedra_Library::Interfaces::Prolog::build_linear_-expression (Prolog_term_ref *t*, const char * *where*)

Definition at line 937 of file ppl_prolog_common.cc.

Referenced by ppl_MIP_Problem_set_objective_function(), and ppl_new_MIP_Problem().

10.3.2.7 void Parma_Polyhedra_Library::Interfaces::Prolog::check_nil_terminating (Prolog_term_ref *t*, const char * *where*)

Definition at line 1537 of file ppl_prolog_common.cc.

Referenced by ppl_MIP_Problem_add_constraints(), ppl_MIP_Problem_add_to_integer_space_-dimensions(), ppl_new_MIP_Problem(), ppl_new_PIP_Problem(), ppl_PIP_Problem_add_constraints(), and ppl_PIP_Problem_add_to_parameter_space_dimensions().

10.3.2.8 Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::Coefficient_to_-integer_term (const Coefficient & *n*)

Definition at line 917 of file ppl_prolog_common.cc.

10.3.2.9 Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::Coefficient_-to_integer_term (const Parma_Polyhedra_Library::Coefficient & *n*)

Referenced by term_to_Variable().

10.3.2.10 Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::congruence_term (const Congruence & *cg*)

Definition at line 1295 of file ppl_prolog_common.cc.

10.3.2.11 Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::congruence_term (const Parma_Polyhedra_Library::Congruence & *cg*)

10.3.2.12 Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::constraint_term (const Constraint & *c*)

Definition at line 1270 of file ppl_prolog_common.cc.

References a_plus.

10.3.2.13 Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::constraint_term (const Parma_Polyhedra_Library::Constraint & *c*)

Referenced by ppl_MIP_Problem_constraints(), ppl_PIP_Problem_constraints(), and ppl_PIP_Tree_-Node_constraints().

10.3.2.14 Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::generator_term (const Generator & *g*)

Definition at line 1314 of file ppl_prolog_common.cc.

10.3.2.15 Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::generator_term (const Parma_Polyhedra_Library::Generator & *g*)

Referenced by ppl_MIP_Problem_feasible_point(), and ppl_MIP_Problem_optimizing_point().

10.3.2.16 template<typename R > Prolog_term_ref Parma_Polyhedra_-Library::Interfaces::Prolog::get_homogeneous_expression (const R & *r*) `[inline]`

Definition at line 1214 of file ppl_prolog_common.cc.

10.3.2.17 Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::get_linear_expression (const Linear_Expression & *le*)

Definition at line 1252 of file ppl_prolog_common.cc.

10.3.2.18 Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::get_linear_expression (const Parma_Polyhedra_Library::Linear_Expression & *le*)

Referenced by ppl_MIP_Problem_objective_function(), ppl_PIP_Tree_Node_parametric_values(), and term_to_Variable().

10.3.2.19 Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::grid_generator_term (const Grid_Generator & *g*)

Definition at line 1358 of file ppl_prolog_common.cc.

10.3.2.20 Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::grid_generator_term (const Parma_Polyhedra_Library::Grid_Generator & *g*)

10.3.2.21 void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const deterministic_timeout_exception &)

Definition at line 866 of file ppl_prolog_common.cc.

10.3.2.22 void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const timeout_exception &)

Definition at line 855 of file ppl_prolog_common.cc.

10.3.2.23 void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception ()

Definition at line 817 of file ppl_prolog_common.cc.

10.3.2.24 void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const std::exception & *e*)

Definition at line 810 of file ppl_prolog_common.cc.

10.3.2.25 void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const std::bad_alloc &)

Definition at line 803 of file ppl_prolog_common.cc.

References a_ppl_logic_error, and Prolog_atom_term_from_string().

10.3.2.26 void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const std::logic_error & *e*)

Definition at line 795 of file ppl_prolog_common.cc.

References a_ppl_invalid_argument, and Prolog_atom_term_from_string().

10.3.2.27 void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const std::invalid_argument & *e*)

Definition at line 787 of file ppl_prolog_common.cc.

References a_ppl_length_error, and Prolog_atom_term_from_string().

10.3.2.28 void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const std::length_error & *e*)

Definition at line 779 of file ppl_prolog_common.cc.

References a_ppl_domain_error, and Prolog_atom_term_from_string().

10.3.2.29 void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const std::domain_error & *e*)

Definition at line 771 of file ppl_prolog_common.cc.

References a_ppl_overflow_error, and Prolog_atom_term_from_string().

10.3.2.30 void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const std::overflow_error & *e*)

Definition at line 763 of file ppl_prolog_common.cc.

10.3.2.31 void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const unknown_interface_error & *e*)

Definition at line 756 of file ppl_prolog_common.cc.

10.3.2.32 void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const PPL_integer_out_of_range & *e*)

Definition at line 740 of file ppl_prolog_common.cc.

10.3.2.33 void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_nil_terminated_list & *e*)

Definition at line 719 of file ppl_prolog_common.cc.

10.3.2.34 void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_relation & *e*)

Definition at line 691 of file ppl_prolog_common.cc.

10.3.2.35 void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_universe_or_empty & *e*)

Definition at line 569 of file ppl_prolog_common.cc.

10.3.2.36 void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_pip_problem_control_parameter_value & *e*)

Definition at line 538 of file ppl_prolog_common.cc.

10.3.2.37 void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_pip_problem_control_parameter_name & *e*)

Definition at line 515 of file ppl_prolog_common.cc.

10.3.2.38 void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_control_parameter_value & *e*)

Definition at line 489 of file ppl_prolog_common.cc.

10.3.2.39 void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_control_parameter_name & *e*)

Definition at line 470 of file ppl_prolog_common.cc.

10.3.2.40 void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_bounded_integer_type_overflow & *e*)

Definition at line 664 of file ppl_prolog_common.cc.

10.3.2.41 void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_bounded_integer_type_representation & *e*)

Definition at line 641 of file ppl_prolog_common.cc.

10.3.2.42 void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_bounded_integer_type_width & *e*)

Definition at line 613 of file ppl_prolog_common.cc.

10.3.2.43 void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_complexity_class & *e*)

Definition at line 446 of file ppl_prolog_common.cc.

10.3.2.44 void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_an_optimization_mode & *e*)

Definition at line 424 of file ppl_prolog_common.cc.

10.3.2.45 void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const ppl_handle_mismatch & *e*)

Definition at line 405 of file ppl_prolog_common.cc.

10.3.2.46 void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_an_integer & *e*)

Definition at line 386 of file ppl_prolog_common.cc.

10.3.2.47 void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_variable & *e*)

Definition at line 365 of file ppl_prolog_common.cc.

10.3.2.48 void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const non_linear & *e*)

Definition at line 345 of file ppl_prolog_common.cc.

10.3.2.49 void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_boolean & *e*)

Definition at line 591 of file ppl_prolog_common.cc.

10.3.2.50 void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_unsigned_integer & *e*)

Definition at line 326 of file ppl_prolog_common.cc.

10.3.2.51 void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const Prolog_unsigned_out_of_range & *e*)

Definition at line 302 of file ppl_prolog_common.cc.

10.3.2.52 Coefficient Parma_Polyhedra_Library::Interfaces::Prolog::integer_term_to_Coefficient (Prolog_term_ref *t*)

Definition at line 908 of file ppl_prolog_common.cc.

References a_empty, and a_universe.

Referenced by term_to_bounded_integer_type_width().

10.3.2.53 Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::interval_term (const Rational_Box::interval_type & *i*)

Definition at line 1667 of file ppl_prolog_common.cc.

10.3.2.54 Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::interval_term (const Parma_Polyhedra_Library::Rational_Box::interval_type & *i*)

10.3.2.55 dimension_type Parma_Polyhedra_Library::Interfaces::Prolog::max_representable_dimension (dimension_type *d*) `[inline]`

Definition at line 1548 of file ppl_prolog_common.cc.

References a_nil.

Referenced by ppl_max_space_dimension().

10.3.2.56 Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::Prolog_atom_term_from_string (const char * *s*)

Definition at line 295 of file ppl_prolog_common.cc.

References a_ppl_invalid_argument.

Referenced by handle_exception(), and ppl_set_timeout_exception_atom().

10.3.2.57 Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::rational_term (const Rational_Box::interval_type::boundary_type & *q*)

Definition at line 1651 of file ppl_prolog_common.cc.

References a_greater_than.

10.3.2.58 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_to_boolean (Prolog_term_ref *t*, const char * *where*)

Definition at line 886 of file ppl_prolog_common.cc.

References a_dollar_VAR.

10.3.2.59 bool Parma_Polyhedra_Library::Interfaces::Prolog::term_to_boundary (Prolog_term_ref *t_b*, Boundary_Kind *kind*, bool & *finite*, bool & *closed*, Coefficient & *n*, Coefficient & *d*)

Definition at line 1556 of file ppl_prolog_common.cc.

10.3.2.60 bool Parma_Polyhedra_Library::Interfaces::Prolog::term_to_boundary (Prolog_term_ref *t_b*, Boundary_Kind *kind*, bool & *finite*, bool & *closed*, Parma_Polyhedra_Library::Coefficient & *n*, Parma_Polyhedra_Library::Coefficient & *d*)

10.3.2.61 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_-to_bounded_integer_type_overflow (Prolog_term_ref *t*, const char * *where*)

Definition at line 1457 of file ppl_prolog_common.cc.

References a_signed_2_complement, and a_unsigned.

10.3.2.62 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_to_-bounded_integer_type_representation (Prolog_term_ref *t*, const char * *where*)

Definition at line 1445 of file ppl_prolog_common.cc.

10.3.2.63 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_-to_bounded_integer_type_width (Prolog_term_ref *t*, const char * *where*)

Definition at line 1432 of file ppl_prolog_common.cc.

References integer_term_to_Coefficient().

10.3.2.64 Coefficient Parma_Polyhedra_Library::Interfaces::Prolog::term_to_Coefficient (Prolog_term_ref *t*, const char * *where*)

Definition at line 1424 of file ppl_prolog_common.cc.

10.3.2.65 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_to_complexity_class (Prolog_term_ref *t*, const char * *where*)

Definition at line 1698 of file ppl_prolog_common.cc.

10.3.2.66 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_-to_control_parameter_name (Prolog_term_ref *t*, const char * *where*)

Definition at line 1482 of file ppl_prolog_common.cc.

References a_max, and a_min.

Referenced by ppl_MIP_Problem_get_control_parameter().

10.3.2.67 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_-to_control_parameter_value (Prolog_term_ref *t*, const char * *where*)

Definition at line 1504 of file ppl_prolog_common.cc.

References a_cutting_strategy, and a_pivot_row_strategy.

Referenced by ppl_MIP_Problem_set_control_parameter().

10.3.2.68 template<typename T > T* Parma_Polyhedra_Library::Interfaces::Prolog::term_to_-handle (Prolog_term_ref *t*, const char * *where*) `[inline]`

Definition at line 691 of file ppl_prolog_common.defs.hh.

10.3.2.69 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_to_optimization_-mode (Prolog_term_ref *t*, const char * *where*)

Definition at line 1471 of file ppl_prolog_common.cc.

Referenced by ppl_MIP_Problem_set_optimization_mode(), and ppl_new_MIP_Problem().

10.3.2.70 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_to_-pip_problem_control_parameter_name (Prolog_term_ref *t*, const char * *where*)

Definition at line 1493 of file ppl_prolog_common.cc.

References a_cutting_strategy, and a_pricing.

Referenced by ppl_PIP_Problem_get_control_parameter().

10.3.2.71 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_to_pip_problem_control_parameter_value (Prolog_term_ref *t*, const char * *where*)

Definition at line 1519 of file ppl_prolog_common.cc.

Referenced by ppl_PIP_Problem_set_control_parameter().

10.3.2.72 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_to_relation (Prolog_term_ref *t*, const char * *where*)

Definition at line 1617 of file ppl_prolog_common.cc.

10.3.2.73 Relation_Symbol Parma_Polyhedra_Library::Interfaces::Prolog::term_to_relation_symbol (Prolog_term_ref *t_r*, const char * *where*)

Definition at line 1632 of file ppl_prolog_common.cc.

10.3.2.74 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_to_universe_or_empty (Prolog_term_ref *t*, const char * *where*)

Definition at line 897 of file ppl_prolog_common.cc.

References a_false, and a_true.

10.3.2.75 template<typename U > U Parma_Polyhedra_Library::Interfaces::Prolog::term_to_unsigned (Prolog_term_ref *t*, const char * *where*) `[inline]`

Definition at line 638 of file ppl_prolog_common.defs.hh.

10.3.2.76 Variable Parma_Polyhedra_Library::Interfaces::Prolog::term_to_Variable (Prolog_term_ref *t*, const char * *where*)

Definition at line 1408 of file ppl_prolog_common.cc.

References a_divided_by, Coefficient_to_integer_term(), and get_linear_expression().

Referenced by ppl_MIP_Problem_add_to_integer_space_dimensions(), ppl_new_PIP_Problem(), ppl_PIP_Problem_add_to_parameter_space_dimensions(), and ppl_PIP_Tree_Node_parametric_values().

10.3.2.77 bool Parma_Polyhedra_Library::Interfaces::Prolog::unify_long (Prolog_term_ref *t*, long *l*)

Definition at line 925 of file ppl_prolog_common.cc.

10.3.2.78 bool Parma_Polyhedra_Library::Interfaces::Prolog::unify_ulong (Prolog_term_ref *t*, unsigned long *l*)

Definition at line 931 of file ppl_prolog_common.cc.

Referenced by ppl_Coefficient_bits(), ppl_irrational_precision(), ppl_max_space_dimension(), ppl_MIP_-Problem_space_dimension(), ppl_PIP_Problem_has_big_parameter_dimension(), ppl_PIP_Problem_-space_dimension(), ppl_version_beta(), ppl_version_major(), ppl_version_minor(), and ppl_version_-revision().

10.3.2.79 Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::variable_term (dimension_type *varid*)

Definition at line 877 of file ppl_prolog_common.cc.

Referenced by ppl_MIP_Problem_integer_space_dimensions(), and ppl_PIP_Problem_parameter_space_-dimensions().

10.3.3 Variable Documentation

10.3.3.1 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_any

Definition at line 147 of file ppl_prolog_common.cc.

10.3.3.2 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_asterisk

Definition at line 59 of file ppl_prolog_common.cc.

10.3.3.3 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_bits_128

Definition at line 118 of file ppl_prolog_common.cc.

10.3.3.4 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_bits_16

Definition at line 115 of file ppl_prolog_common.cc.

10.3.3.5 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_bits_32

Definition at line 116 of file ppl_prolog_common.cc.

10.3.3.6 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_bits_64

Definition at line 117 of file ppl_prolog_common.cc.

10.3.3.7 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_bits_8

Definition at line 114 of file ppl_prolog_common.cc.

10.3.3.8 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_c

Definition at line 99 of file ppl_prolog_common.cc.

10.3.3.9 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_closure_point

Definition at line 79 of file ppl_prolog_common.cc.

10.3.3.10 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_cutting_strategy

Definition at line 155 of file ppl_prolog_common.cc.

Referenced by ppl_PIP_Problem_get_control_parameter(), term_to_control_parameter_value(), and term_to_pip_problem_control_parameter_name().

10.3.3.11 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_cutting_strategy_all

Definition at line 158 of file ppl_prolog_common.cc.

Referenced by ppl_PIP_Problem_get_control_parameter(), and ppl_PIP_Problem_set_control_-parameter().

10.3.3.12 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_cutting_strategy_-deepest

Definition at line 157 of file ppl_prolog_common.cc.

Referenced by ppl_PIP_Problem_get_control_parameter(), and ppl_PIP_Problem_set_control_-parameter().

10.3.3.13 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_cutting_strategy_first

Definition at line 156 of file ppl_prolog_common.cc.

Referenced by ppl_PIP_Problem_get_control_parameter(), and ppl_PIP_Problem_set_control_-parameter().

10.3.3.14 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_divided_by

Definition at line 87 of file ppl_prolog_common.cc.

Referenced by term_to_Variable().

10.3.3.15 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_dollar_VAR

Definition at line 54 of file ppl_prolog_common.cc.

Referenced by term_to_boolean().

10.3.3.16 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_empty

Definition at line 102 of file ppl_prolog_common.cc.

Referenced by integer_term_to_Coefficient().

10.3.3.17 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_equal

Definition at line 67 of file ppl_prolog_common.cc.

10.3.3.18 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_equal_less_than

Definition at line 66 of file ppl_prolog_common.cc.

10.3.3.19 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_expected

Definition at line 181 of file ppl_prolog_common.cc.

Referenced by ppl_set_timeout_exception_atom().

10.3.3.20 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_false

Definition at line 172 of file ppl_prolog_common.cc.

Referenced by term_to_universe_or_empty().

10.3.3.21 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_found

Definition at line 182 of file ppl_prolog_common.cc.

Referenced by ppl_set_timeout_exception_atom().

10.3.3.22 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_greater_than

Definition at line 69 of file ppl_prolog_common.cc.

Referenced by rational_term().

10.3.3.23 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_greater_than_equal

Definition at line 68 of file ppl_prolog_common.cc.

10.3.3.24 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_grid_line

Definition at line 82 of file ppl_prolog_common.cc.

10.3.3.25 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_grid_point

Definition at line 84 of file ppl_prolog_common.cc.

10.3.3.26 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_i

Definition at line 138 of file ppl_prolog_common.cc.

10.3.3.27 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_is_congruent_to

Definition at line 72 of file ppl_prolog_common.cc.

10.3.3.28 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_is_disjoint

Definition at line 90 of file ppl_prolog_common.cc.

10.3.3.29 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_is_included

Definition at line 92 of file ppl_prolog_common.cc.

10.3.3.30 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_less_than

Definition at line 65 of file ppl_prolog_common.cc.

10.3.3.31 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_line

Definition at line 76 of file ppl_prolog_common.cc.

10.3.3.32 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_max

Definition at line 108 of file ppl_prolog_common.cc.

Referenced by ppl_MIP_Problem_optimization_mode(), ppl_MIP_Problem_set_optimization_mode(), ppl_new_MIP_Problem(), and term_to_control_parameter_name().

10.3.3.33 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_min

Definition at line 111 of file ppl_prolog_common.cc.

Referenced by ppl_MIP_Problem_optimization_mode(), and term_to_control_parameter_name().

10.3.3.34 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_minf

Definition at line 141 of file ppl_prolog_common.cc.

10.3.3.35 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_minus

Definition at line 58 of file ppl_prolog_common.cc.

10.3.3.36 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_modulo

Definition at line 73 of file ppl_prolog_common.cc.

10.3.3.37 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_nil

Definition at line 51 of file ppl_prolog_common.cc.

Referenced by max_representable_dimension(), ppl_MIP_Problem_constraints(), ppl_MIP_Problem_-integer_space_dimensions(), ppl_PIP_Problem_constraints(), ppl_PIP_Problem_parameter_space_-dimensions(), ppl_PIP_Tree_Node_artificials(), and ppl_PIP_Tree_Node_constraints().

10.3.3.38 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_o

Definition at line 135 of file ppl_prolog_common.cc.

10.3.3.39 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_optimized

Definition at line 132 of file ppl_prolog_common.cc.

Referenced by ppl_MIP_Problem_solve(), and ppl_PIP_Problem_solve().

10.3.3.40 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_out_of_memory

Definition at line 168 of file ppl_prolog_common.cc.

Referenced by ppl_initialize().

10.3.3.41 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_overflow_impossible

Definition at line 127 of file ppl_prolog_common.cc.

10.3.3.42 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_overflow_undefined

Definition at line 126 of file ppl_prolog_common.cc.

10.3.3.43 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_overflow_wraps

Definition at line 125 of file ppl_prolog_common.cc.

10.3.3.44 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_parameter

Definition at line 83 of file ppl_prolog_common.cc.

10.3.3.45 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_pinf

Definition at line 142 of file ppl_prolog_common.cc.

10.3.3.46 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_pivot_row_strategy

Definition at line 160 of file ppl_prolog_common.cc.

Referenced by ppl_PIP_Problem_get_control_parameter(), and term_to_control_parameter_value().

10.3.3.47 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_pivot_row_strategy_-first

Definition at line 161 of file ppl_prolog_common.cc.

Referenced by ppl_PIP_Problem_get_control_parameter(), and ppl_PIP_Problem_set_control_-parameter().

10.3.3.48 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_pivot_row_strategy_-max_column

Definition at line 162 of file ppl_prolog_common.cc.

Referenced by ppl_PIP_Problem_get_control_parameter(), and ppl_PIP_Problem_set_control_-parameter().

10.3.3.49 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_plus

Definition at line 57 of file ppl_prolog_common.cc.

Referenced by constraint_term().

10.3.3.50 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_point

Definition at line 78 of file ppl_prolog_common.cc.

10.3.3.51 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_polynomial

Definition at line 145 of file ppl_prolog_common.cc.

10.3.3.52 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_ppl_domain_error

Definition at line 176 of file ppl_prolog_common.cc.

Referenced by handle_exception().

10.3.3.53 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_ppl_invalid_argument

Definition at line 178 of file ppl_prolog_common.cc.

Referenced by handle_exception(), ppl_set_timeout_exception_atom(), and Prolog_atom_term_from_-string().

10.3.3.54 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_ppl_length_error

Definition at line 177 of file ppl_prolog_common.cc.

Referenced by handle_exception().

10.3.3.55 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_ppl_logic_error

Definition at line 179 of file ppl_prolog_common.cc.

Referenced by handle_exception().

10.3.3.56 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_ppl_overflow_error

Definition at line 175 of file ppl_prolog_common.cc.

Referenced by handle_exception().

10.3.3.57 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_ppl_representation_-error

Definition at line 180 of file ppl_prolog_common.cc.

10.3.3.58 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_pricing

Definition at line 150 of file ppl_prolog_common.cc.

Referenced by ppl_MIP_Problem_get_control_parameter(), and term_to_pip_problem_control_-parameter_name().

10.3.3.59 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_pricing_steepest_edge_-exact

Definition at line 152 of file ppl_prolog_common.cc.

Referenced by ppl_MIP_Problem_get_control_parameter(), and ppl_MIP_Problem_set_control_-parameter().

10.3.3.60 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_pricing_steepest_edge_-float

Definition at line 151 of file ppl_prolog_common.cc.

Referenced by ppl_MIP_Problem_get_control_parameter(), and ppl_MIP_Problem_set_control_-parameter().

10.3.3.61 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_pricing_textbook

Definition at line 153 of file ppl_prolog_common.cc.

Referenced by ppl_MIP_Problem_get_control_parameter(), and ppl_MIP_Problem_set_control_-parameter().

10.3.3.62 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_ray

Definition at line 77 of file ppl_prolog_common.cc.

10.3.3.63 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_saturates

Definition at line 93 of file ppl_prolog_common.cc.

10.3.3.64 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_signed_2_complement

Definition at line 122 of file ppl_prolog_common.cc.

Referenced by term_to_bounded_integer_type_overflow().

10.3.3.65 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_simplex

Definition at line 146 of file ppl_prolog_common.cc.

10.3.3.66 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_slash

Definition at line 62 of file ppl_prolog_common.cc.

10.3.3.67 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_strictly_intersects

Definition at line 91 of file ppl_prolog_common.cc.

10.3.3.68 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_subsumes

Definition at line 96 of file ppl_prolog_common.cc.

10.3.3.69 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_time_out

Definition at line 165 of file ppl_prolog_common.cc.

Referenced by ppl_initialize().

10.3.3.70 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_true

Definition at line 171 of file ppl_prolog_common.cc.

Referenced by term_to_universe_or_empty().

10.3.3.71 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_unbounded

Definition at line 131 of file ppl_prolog_common.cc.

Referenced by ppl_MIP_Problem_solve().

10.3.3.72 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_unfeasible

Definition at line 130 of file ppl_prolog_common.cc.

Referenced by ppl_MIP_Problem_solve(), and ppl_PIP_Problem_solve().

10.3.3.73 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_universe

Definition at line 105 of file ppl_prolog_common.cc.

Referenced by integer_term_to_Coefficient().

10.3.3.74 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_unsigned

Definition at line 121 of file ppl_prolog_common.cc.

Referenced by term_to_bounded_integer_type_overflow().

10.3.3.75 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_where

Definition at line 183 of file ppl_prolog_common.cc.

Referenced by ppl_set_timeout_exception_atom().

10.3.3.76 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::out_of_memory_-exception_atom

Definition at line 48 of file ppl_prolog_common.cc.

Referenced by ppl_initialize().

10.3.3.77 const Prolog_Interface_Atom Parma_Polyhedra_Library::Interfaces::Prolog::prolog_-interface_atoms

Definition at line 185 of file ppl_prolog_common.cc.

Referenced by ppl_initialize().

10.3.3.78 bool Parma_Polyhedra_Library::Interfaces::Prolog::Prolog_interface_initialized = false

Definition at line 1534 of file ppl_prolog_common.cc.

Referenced by ppl_finalize(), and ppl_initialize().

10.3.3.79 Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::timeout_exception_atom

Definition at line 852 of file ppl_prolog_common.cc.

Referenced by ppl_initialize(), ppl_set_timeout_exception_atom(), and ppl_timeout_exception_atom().

11 Class Documentation

11.1 Parma_Polyhedra_Library::Interfaces::Prolog::deterministic_timeout_-exception Class Reference

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

Public Member Functions

- void throw_me () const
- int priority () const

11.1.1 Detailed Description

Definition at line 525 of file ppl_prolog_common.defs.hh.

11.1.2 Member Function Documentation

11.1.2.1 int Parma_Polyhedra_Library::Interfaces::Prolog::deterministic_timeout_-exception::priority () const [inline]

Definition at line 531 of file ppl_prolog_common.defs.hh.

11.1.2.2 void Parma_Polyhedra_Library::Interfaces::Prolog::deterministic_timeout_-exception::throw_me () const [inline]

Definition at line 528 of file ppl_prolog_common.defs.hh.

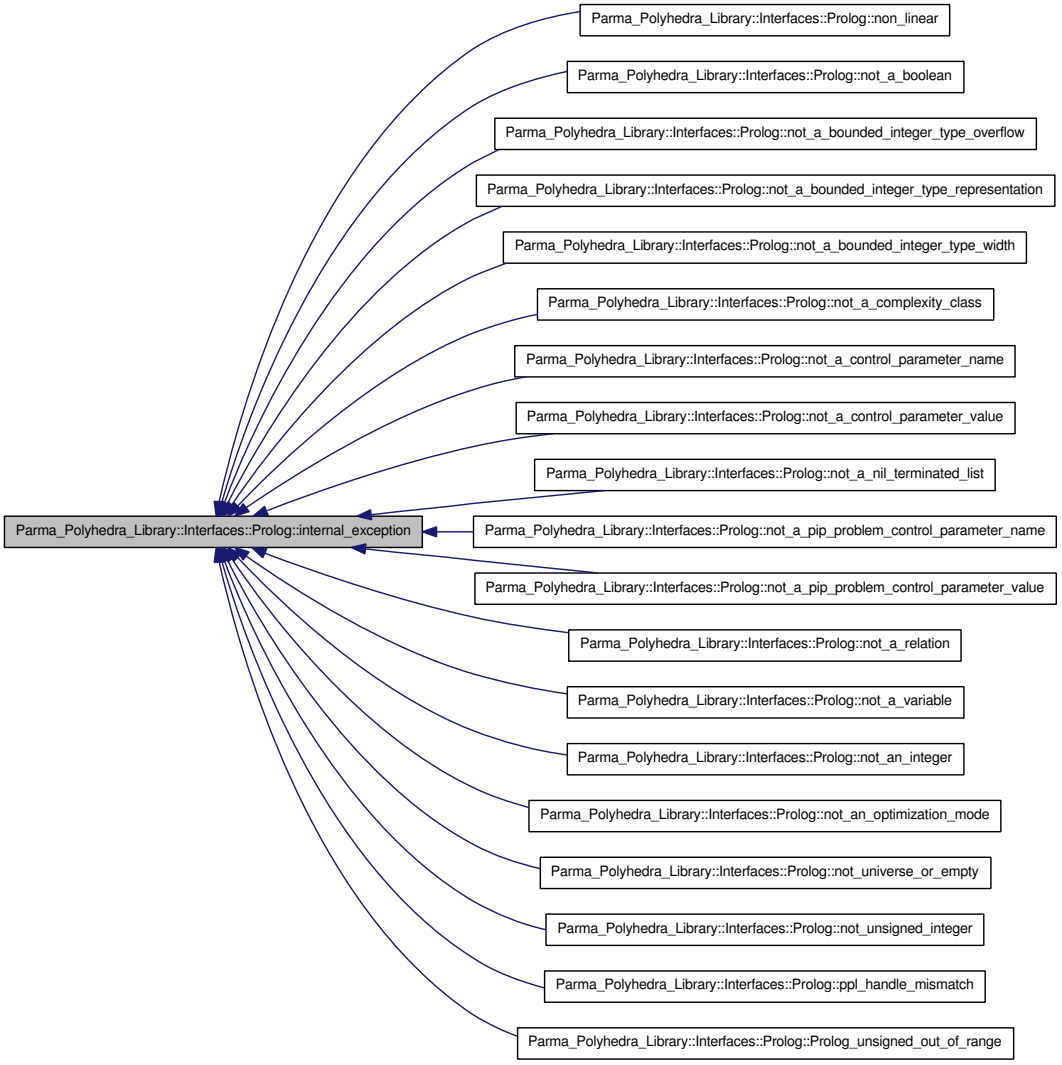
The documentation for this class was generated from the following file:

- ppl_prolog_common.defs.hh

11.2 Parma_Polyhedra_Library::Interfaces::Prolog::internal_exception Class Reference

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

Inheritance diagram for Parma_Polyhedra_Library::Interfaces::Prolog::internal_exception:



Public Member Functions

- internal_exception (Prolog_term_ref term, const char ∗where)
- virtual ∼internal_exception ()
- virtual Prolog_term_ref term () const
- virtual const char ∗ where () const

Private Attributes

- Prolog_term_ref t
- const char ∗ w

11.2.1 Detailed Description

Definition at line 135 of file ppl_prolog_common.defs.hh.

11.2.2 Constructor & Destructor Documentation

11.2.2.1 Parma_Polyhedra_Library::Interfaces::Prolog::internal_exception::internal_exception (Prolog_term_ref *term*, const char ∗ *where*) [inline]

Definition at line 141 of file ppl_prolog_common.defs.hh.

11.2.2.2 virtual Parma_Polyhedra_Library::Interfaces::Prolog::internal_exception::∼internal_-exception () [inline, virtual]

Definition at line 146 of file ppl_prolog_common.defs.hh.

11.2.3 Member Function Documentation

11.2.3.1 virtual Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::internal_-exception::term () const [inline, virtual]

Definition at line 149 of file ppl_prolog_common.defs.hh.

References t.

11.2.3.2 virtual const char∗ Parma_Polyhedra_Library::Interfaces::Prolog::internal_-exception::where () const [inline, virtual]

Definition at line 153 of file ppl_prolog_common.defs.hh.

References w.

11.2.4 Member Data Documentation

11.2.4.1 Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::internal_exception::t [private]

Definition at line 137 of file ppl_prolog_common.defs.hh.

Referenced by term().

11.2.4.2 const char∗ Parma_Polyhedra_Library::Interfaces::Prolog::internal_exception::w [private]

Definition at line 138 of file ppl_prolog_common.defs.hh.

Referenced by where().

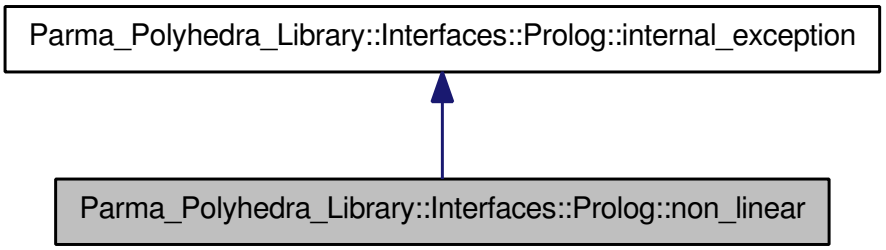
The documentation for this class was generated from the following file:

- ppl_prolog_common.defs.hh

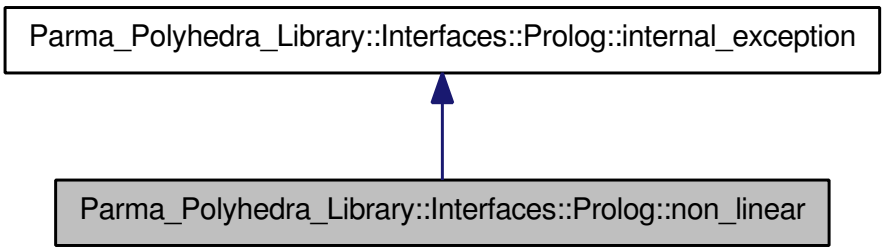
11.3 Parma_Polyhedra_Library::Interfaces::Prolog::non_linear Class Reference

`#include <ppl_prolog_common.defs.hh>`

Inheritance diagram for Parma_Polyhedra_Library::Interfaces::Prolog::non_linear:



Collaboration diagram for Parma_Polyhedra_Library::Interfaces::Prolog::non_linear:



Public Member Functions

- non_linear (Prolog_term_ref term, const char ∗where)

11.3.1 Detailed Description

Definition at line 175 of file ppl_prolog_common.defs.hh.

11.3.2 Constructor & Destructor Documentation

11.3.2.1 Parma_Polyhedra_Library::Interfaces::Prolog::non_linear::non_linear (Prolog_term_ref *term*, const char ∗ *where*) `[inline]`

Definition at line 177 of file ppl_prolog_common.defs.hh.

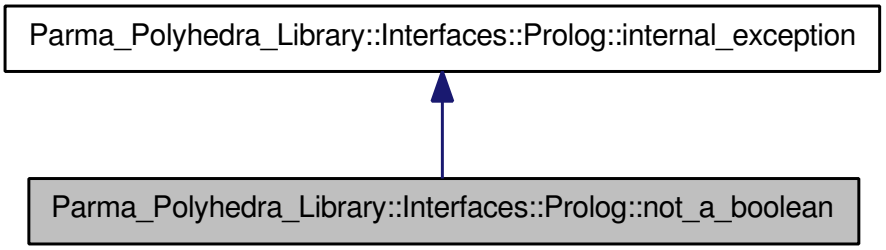
The documentation for this class was generated from the following file:

- ppl_prolog_common.defs.hh

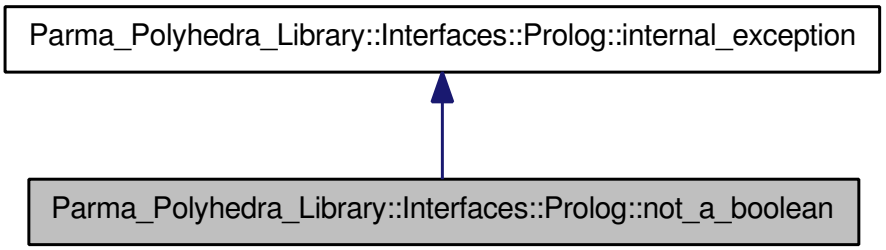
11.4 Parma_Polyhedra_Library::Interfaces::Prolog::not_a_boolean Class Reference

`#include <ppl_prolog_common.defs.hh>`

Inheritance diagram for Parma_Polyhedra_Library::Interfaces::Prolog::not_a_boolean:



Collaboration diagram for Parma_Polyhedra_Library::Interfaces::Prolog::not_a_boolean:



Public Member Functions

- not_a_boolean (Prolog_term_ref term, const char ∗where)

11.4.1 Detailed Description

Definition at line 196 of file ppl_prolog_common.defs.hh.

11.4.2 Constructor & Destructor Documentation

11.4.2.1 Parma_Polyhedra_Library::Interfaces::Prolog::not_a_boolean::not_a_boolean (Prolog_term_ref *term*, const char ∗ *where*) `[inline]`

Definition at line 198 of file ppl_prolog_common.defs.hh.

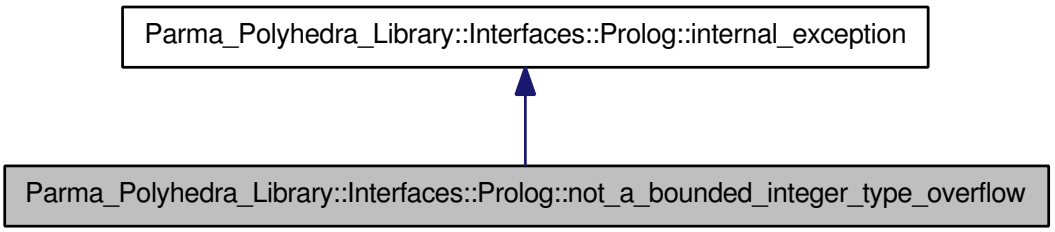
The documentation for this class was generated from the following file:

- ppl_prolog_common.defs.hh

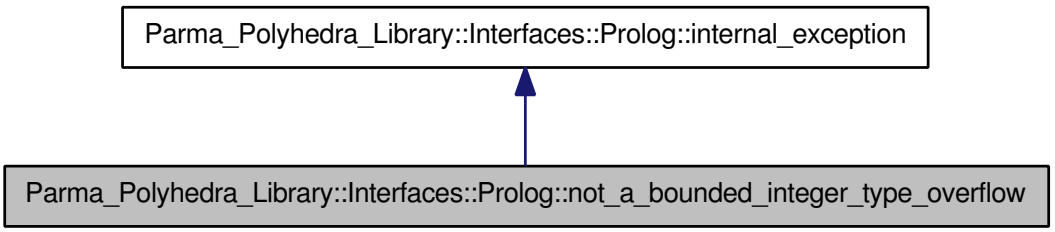
11.5 Parma_Polyhedra_Library::Interfaces::Prolog::not_a_bounded_integer_-type_overflow Class Reference

`#include <ppl_prolog_common.defs.hh>`

Inheritance diagram for Parma_Polyhedra_Library::Interfaces::Prolog::not_a_bounded_integer_type_-overflow:



Collaboration diagram for Parma_Polyhedra_Library::Interfaces::Prolog::not_a_bounded_integer_type_-overflow:



Public Member Functions

- not_a_bounded_integer_type_overflow (Prolog_term_ref term, const char ∗where)

11.5.1 Detailed Description

Definition at line 232 of file ppl_prolog_common.defs.hh.

11.5.2 Constructor & Destructor Documentation

11.5.2.1 Parma_Polyhedra_Library::Interfaces::Prolog::not_a_bounded_integer_type_-overflow::not_a_bounded_integer_type_overflow (Prolog_term_ref *term*, const char ∗ *where*) `[inline]`

Definition at line 234 of file ppl_prolog_common.defs.hh.

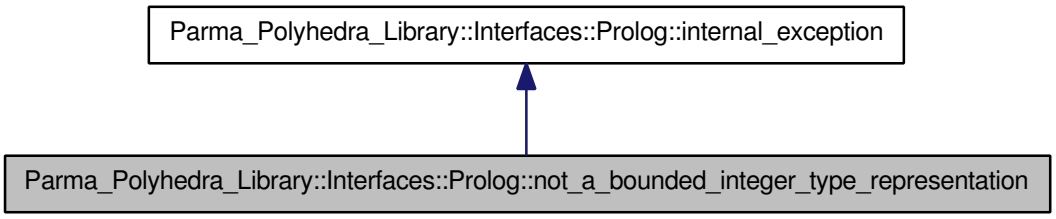
The documentation for this class was generated from the following file:

- ppl_prolog_common.defs.hh

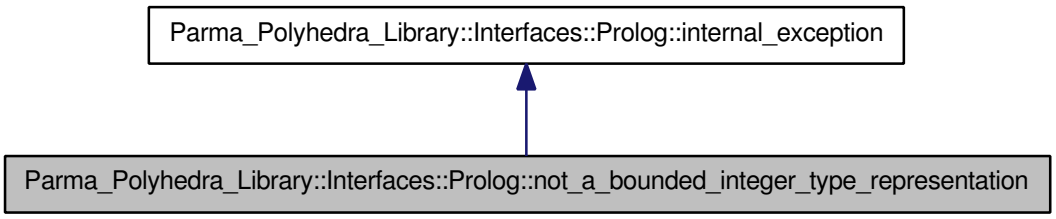
11.6 Parma_Polyhedra_Library::Interfaces::Prolog::not_a_bounded_integer_-type_representation Class Reference

`#include <ppl_prolog_common.defs.hh>`

Inheritance diagram for Parma_Polyhedra_Library::Interfaces::Prolog::not_a_bounded_integer_type_-representation:



Collaboration diagram for Parma_Polyhedra_Library::Interfaces::Prolog::not_a_bounded_integer_type_-representation:



Public Member Functions

- not_a_bounded_integer_type_representation (Prolog_term_ref term, const char ∗where)

11.6.1 Detailed Description

Definition at line 224 of file ppl_prolog_common.defs.hh.

11.6.2 Constructor & Destructor Documentation

11.6.2.1 Parma_Polyhedra_Library::Interfaces::Prolog::not_a_bounded_integer_type_-representation::not_a_bounded_integer_type_representation (Prolog_term_ref *term*, const char ∗ *where*) `[inline]`

Definition at line 226 of file ppl_prolog_common.defs.hh.

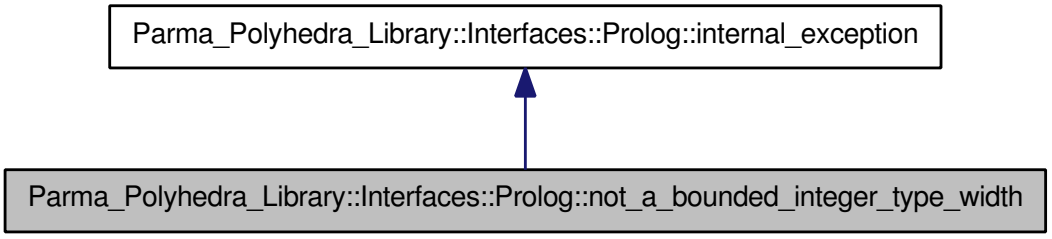
The documentation for this class was generated from the following file:

- ppl_prolog_common.defs.hh

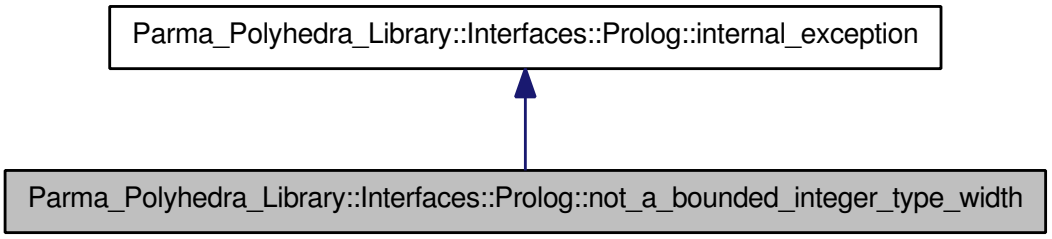
11.7 Parma_Polyhedra_Library::Interfaces::Prolog::not_a_bounded_integer_-type_width Class Reference

`#include <ppl_prolog_common.defs.hh>`

Inheritance diagram for Parma_Polyhedra_Library::Interfaces::Prolog::not_a_bounded_integer_type_-width:



Collaboration diagram for Parma_Polyhedra_Library::Interfaces::Prolog::not_a_bounded_integer_type_-width:



Public Member Functions

- not_a_bounded_integer_type_width (Prolog_term_ref term, const char ∗where)

11.7.1 Detailed Description

Definition at line 217 of file ppl_prolog_common.defs.hh.

11.7.2 Constructor & Destructor Documentation

11.7.2.1 Parma_Polyhedra_Library::Interfaces::Prolog::not_a_bounded_integer_type_-width::not_a_bounded_integer_type_width (Prolog_term_ref *term*, const char ∗ *where*) `[inline]`

Definition at line 219 of file ppl_prolog_common.defs.hh.

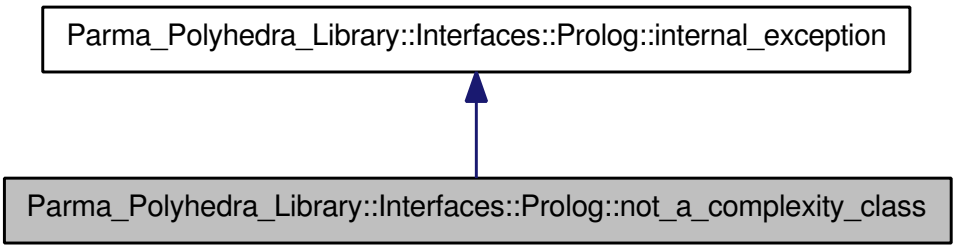
The documentation for this class was generated from the following file:

- ppl_prolog_common.defs.hh

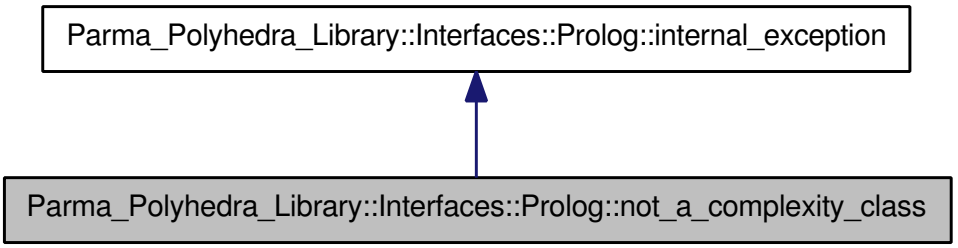
11.8 Parma_Polyhedra_Library::Interfaces::Prolog::not_a_complexity_class Class Reference

`#include <ppl_prolog_common.defs.hh>`

Inheritance diagram for Parma_Polyhedra_Library::Interfaces::Prolog::not_a_complexity_class:



Collaboration diagram for Parma_Polyhedra_Library::Interfaces::Prolog::not_a_complexity_class:



Public Member Functions

- not_a_complexity_class (Prolog_term_ref term, const char ∗where)

11.8.1 Detailed Description

Definition at line 239 of file ppl_prolog_common.defs.hh.

11.8.2 Constructor & Destructor Documentation

11.8.2.1 Parma_Polyhedra_Library::Interfaces::Prolog::not_a_complexity_class::not_a_complexity_class (Prolog_term_ref *term*, const char ∗ *where*) [inline]

Definition at line 241 of file ppl_prolog_common.defs.hh.

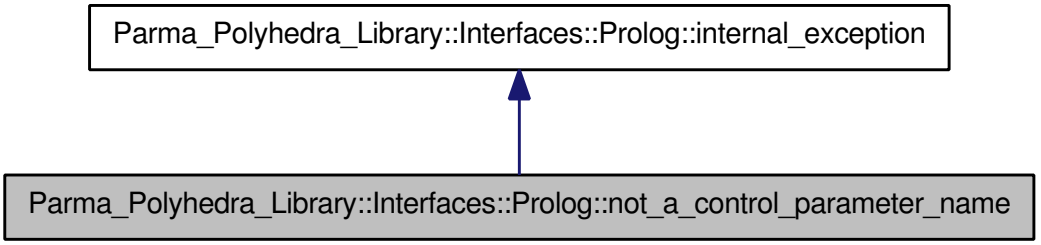
The documentation for this class was generated from the following file:

- ppl_prolog_common.defs.hh

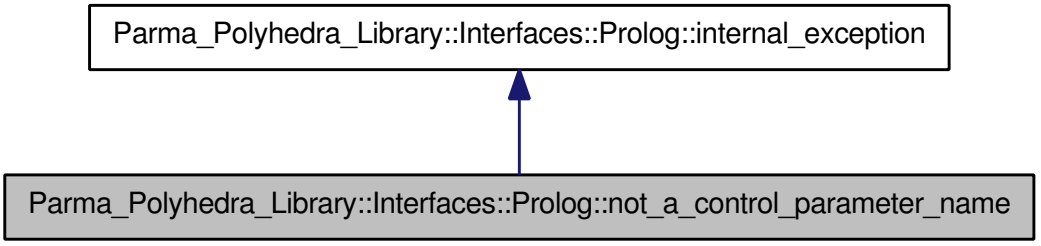
11.9 Parma_Polyhedra_Library::Interfaces::Prolog::not_a_control_parameter_name Class Reference

`#include <ppl_prolog_common.defs.hh>`

Inheritance diagram for Parma_Polyhedra_Library::Interfaces::Prolog::not_a_control_parameter_name:



Collaboration diagram for Parma_Polyhedra_Library::Interfaces::Prolog::not_a_control_parameter_name:



Public Member Functions

- not_a_control_parameter_name (Prolog_term_ref term, const char ∗where)

11.9.1 Detailed Description

Definition at line 246 of file ppl_prolog_common.defs.hh.

11.9.2 Constructor & Destructor Documentation

11.9.2.1 Parma_Polyhedra_Library::Interfaces::Prolog::not_a_control_parameter_name::not_a_control_parameter_name (Prolog_term_ref *term*, const char ∗ *where*) [inline]

Definition at line 248 of file ppl_prolog_common.defs.hh.

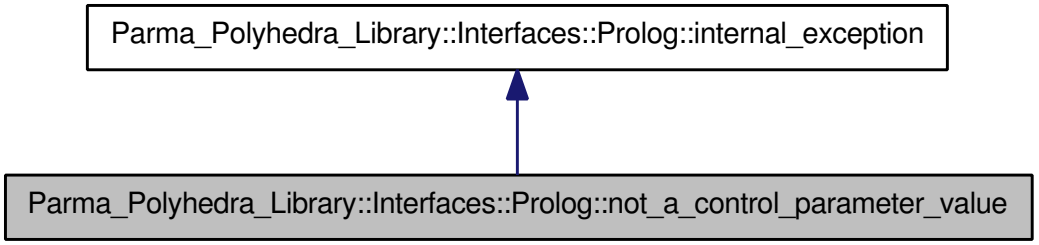
The documentation for this class was generated from the following file:

- ppl_prolog_common.defs.hh

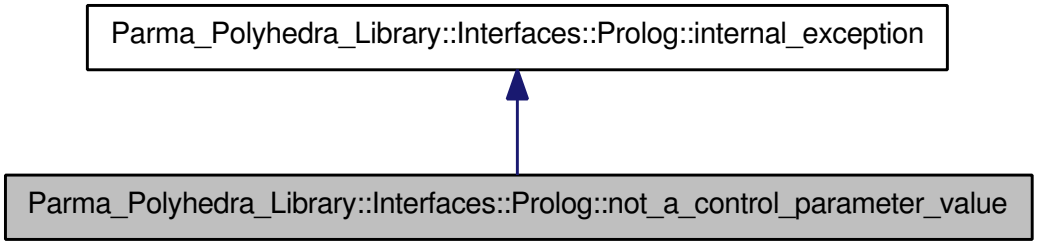
11.10 Parma_Polyhedra_Library::Interfaces::Prolog::not_a_control_-parameter_value Class Reference

`#include <ppl_prolog_common.defs.hh>`

Inheritance diagram for Parma_Polyhedra_Library::Interfaces::Prolog::not_a_control_parameter_value:



Collaboration diagram for Parma_Polyhedra_Library::Interfaces::Prolog::not_a_control_parameter_value:



Public Member Functions

- not_a_control_parameter_value (Prolog_term_ref term, const char ∗where)

11.10.1 Detailed Description

Definition at line 253 of file ppl_prolog_common.defs.hh.

11.10.2 Constructor & Destructor Documentation

11.10.2.1 Parma_Polyhedra_Library::Interfaces::Prolog::not_a_control_parameter_-value::not_a_control_parameter_value (Prolog_term_ref *term*, const char ∗ *where*) [inline]

Definition at line 255 of file ppl_prolog_common.defs.hh.

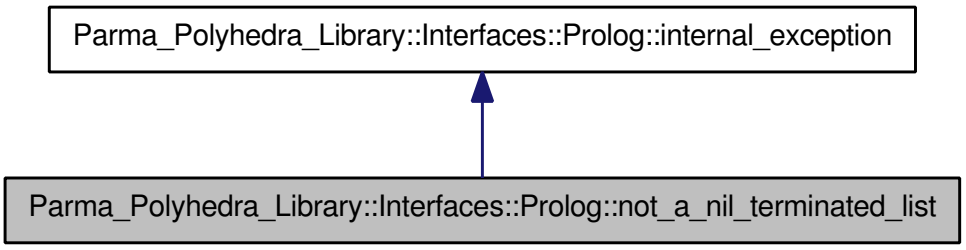
The documentation for this class was generated from the following file:

- ppl_prolog_common.defs.hh

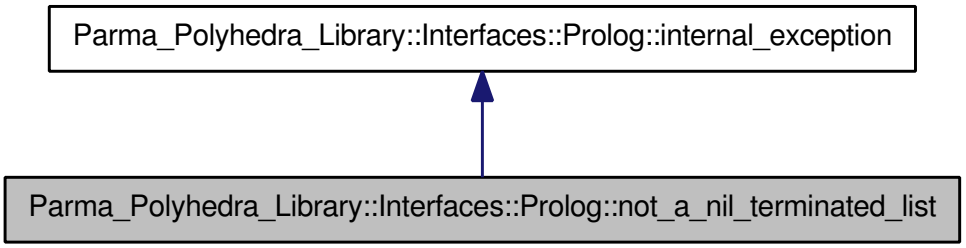
11.11 Parma_Polyhedra_Library::Interfaces::Prolog::not_a_nil_terminated_list Class Reference

`#include <ppl_prolog_common.defs.hh>`

Inheritance diagram for Parma_Polyhedra_Library::Interfaces::Prolog::not_a_nil_terminated_list:



Collaboration diagram for Parma_Polyhedra_Library::Interfaces::Prolog::not_a_nil_terminated_list:



Public Member Functions

- not_a_nil_terminated_list (Prolog_term_ref term, const char *where)

11.11.1 Detailed Description

Definition at line 288 of file ppl_prolog_common.defs.hh.

11.11.2 Constructor & Destructor Documentation

11.11.2.1 Parma_Polyhedra_Library::Interfaces::Prolog::not_a_nil_terminated_list::not_a_nil_terminated_list (Prolog_term_ref *term*, const char * *where*) [inline]

Definition at line 290 of file ppl_prolog_common.defs.hh.

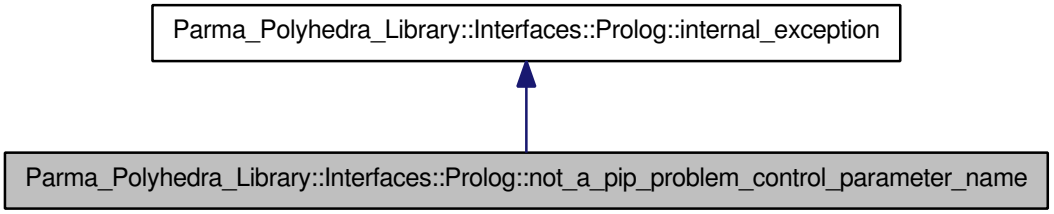
The documentation for this class was generated from the following file:

- ppl_prolog_common.defs.hh

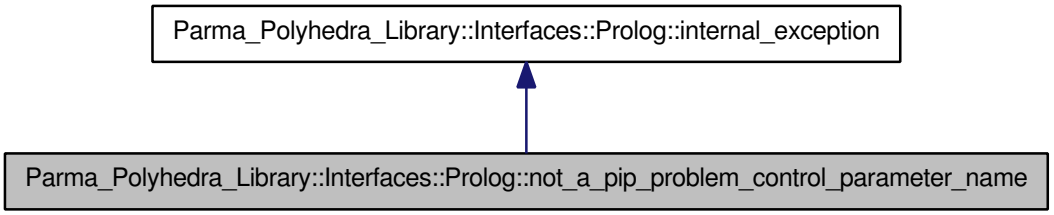
11.12 Parma_Polyhedra_Library::Interfaces::Prolog::not_a_pip_problem_-control_parameter_name Class Reference

`#include <ppl_prolog_common.defs.hh>`

Inheritance diagram for Parma_Polyhedra_Library::Interfaces::Prolog::not_a_pip_problem_control_-parameter_name:



Collaboration diagram for Parma_Polyhedra_Library::Interfaces::Prolog::not_a_pip_problem_control_-parameter_name:



Public Member Functions

- not_a_pip_problem_control_parameter_name (Prolog_term_ref term, const char ∗where)

11.12.1 Detailed Description

Definition at line 260 of file ppl_prolog_common.defs.hh.

11.12.2 Constructor & Destructor Documentation

11.12.2.1 Parma_Polyhedra_Library::Interfaces::Prolog::not_a_pip_problem_control_-parameter_name::not_a_pip_problem_control_parameter_name (Prolog_term_ref *term*, const char ∗ *where*) `[inline]`

Definition at line 262 of file ppl_prolog_common.defs.hh.

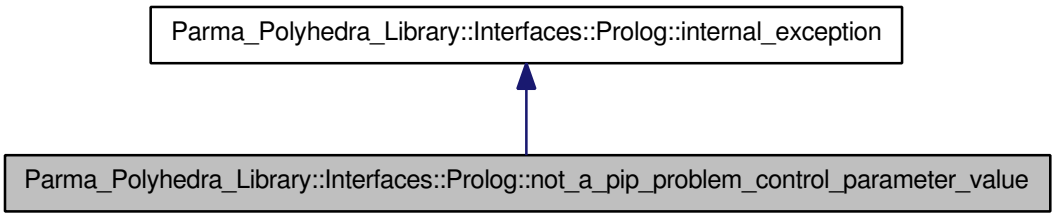
The documentation for this class was generated from the following file:

- ppl_prolog_common.defs.hh

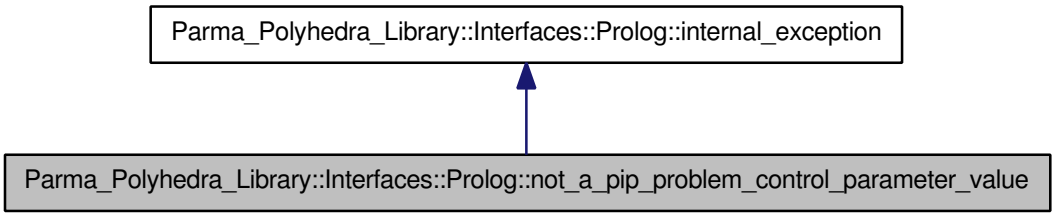
11.13 Parma_Polyhedra_Library::Interfaces::Prolog::not_a_pip_problem_-control_parameter_value Class Reference

`#include <ppl_prolog_common.defs.hh>`

Inheritance diagram for Parma_Polyhedra_Library::Interfaces::Prolog::not_a_pip_problem_control_-parameter_value:



Collaboration diagram for Parma_Polyhedra_Library::Interfaces::Prolog::not_a_pip_problem_control_-parameter_value:



Public Member Functions

- not_a_pip_problem_control_parameter_value (Prolog_term_ref term, const char ∗where)

11.13.1 Detailed Description

Definition at line 267 of file ppl_prolog_common.defs.hh.

11.13.2 Constructor & Destructor Documentation

11.13.2.1 Parma_Polyhedra_Library::Interfaces::Prolog::not_a_pip_problem_control_-parameter_value::not_a_pip_problem_control_parameter_value (Prolog_term_ref *term*, const char ∗ *where*) `[inline]`

Definition at line 269 of file ppl_prolog_common.defs.hh.

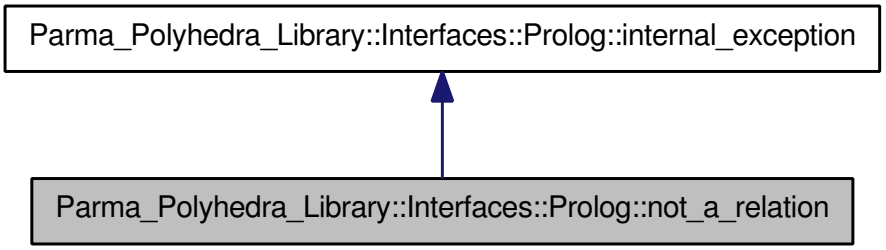
The documentation for this class was generated from the following file:

- ppl_prolog_common.defs.hh

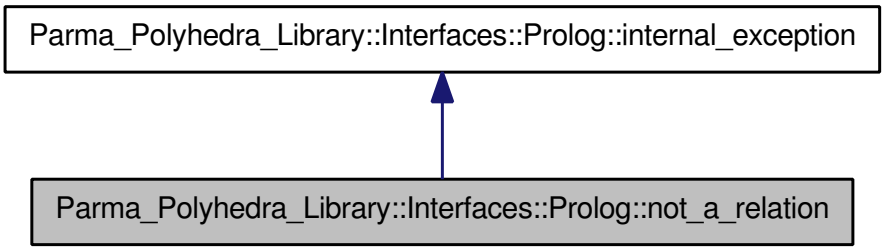
11.14 Parma_Polyhedra_Library::Interfaces::Prolog::not_a_relation Class Reference

`#include <ppl_prolog_common.defs.hh>`

Inheritance diagram for Parma_Polyhedra_Library::Interfaces::Prolog::not_a_relation:



Collaboration diagram for Parma_Polyhedra_Library::Interfaces::Prolog::not_a_relation:



Public Member Functions

- not_a_relation (Prolog_term_ref term, const char ∗where)

11.14.1 Detailed Description

Definition at line 281 of file ppl_prolog_common.defs.hh.

11.14.2 Constructor & Destructor Documentation

11.14.2.1 Parma_Polyhedra_Library::Interfaces::Prolog::not_a_relation::not_a_relation (Prolog_term_ref *term*, const char ∗ *where*) `[inline]`

Definition at line 283 of file ppl_prolog_common.defs.hh.

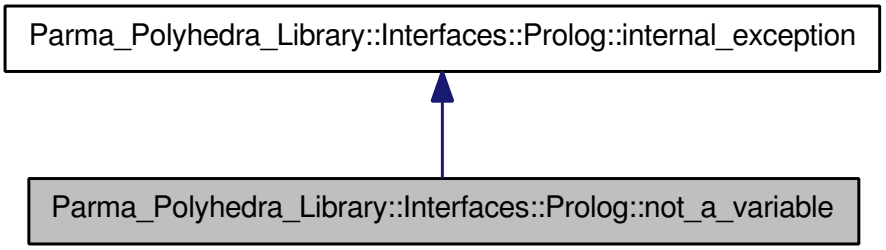
The documentation for this class was generated from the following file:

- ppl_prolog_common.defs.hh

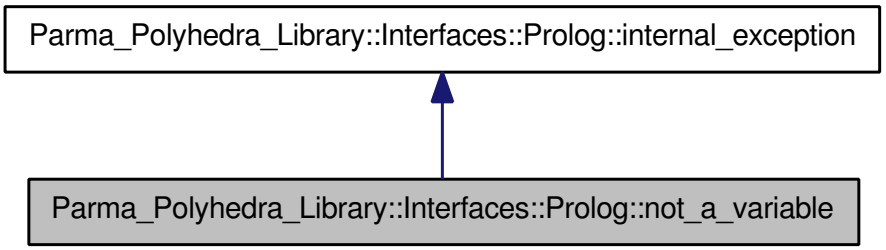
11.15 Parma_Polyhedra_Library::Interfaces::Prolog::not_a_variable Class Reference

`#include <ppl_prolog_common.defs.hh>`

Inheritance diagram for Parma_Polyhedra_Library::Interfaces::Prolog::not_a_variable:



Collaboration diagram for Parma_Polyhedra_Library::Interfaces::Prolog::not_a_variable:



Public Member Functions

- not_a_variable (Prolog_term_ref term, const char ∗where)

11.15.1 Detailed Description

Definition at line 203 of file ppl_prolog_common.defs.hh.

11.15.2 Constructor & Destructor Documentation

11.15.2.1 Parma_Polyhedra_Library::Interfaces::Prolog::not_a_variable::not_a_variable (Prolog_term_ref *term*, const char ∗ *where*) `[inline]`

Definition at line 205 of file ppl_prolog_common.defs.hh.

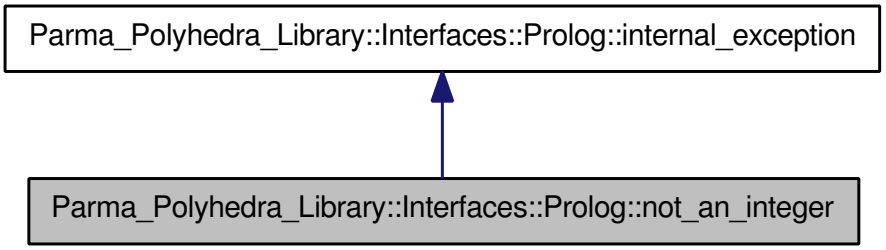
The documentation for this class was generated from the following file:

- ppl_prolog_common.defs.hh

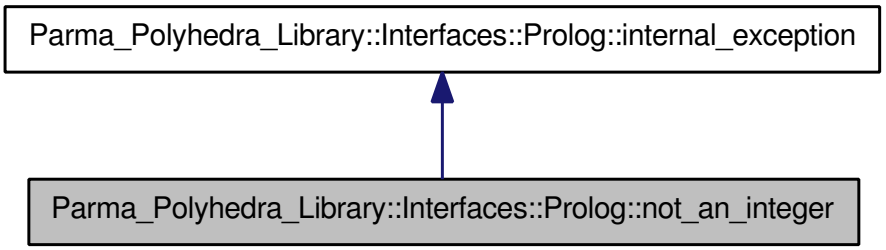
11.16 Parma_Polyhedra_Library::Interfaces::Prolog::not_an_integer Class Reference

`#include <ppl_prolog_common.defs.hh>`

Inheritance diagram for Parma_Polyhedra_Library::Interfaces::Prolog::not_an_integer:



Collaboration diagram for Parma_Polyhedra_Library::Interfaces::Prolog::not_an_integer:



Public Member Functions

- not_an_integer (Prolog_term_ref term, const char ∗where)

11.16.1 Detailed Description

Definition at line 182 of file ppl_prolog_common.defs.hh.

11.16.2 Constructor & Destructor Documentation

11.16.2.1 Parma_Polyhedra_Library::Interfaces::Prolog::not_an_integer::not_an_integer (Prolog_term_ref *term*, const char ∗ *where*) `[inline]`

Definition at line 184 of file ppl_prolog_common.defs.hh.

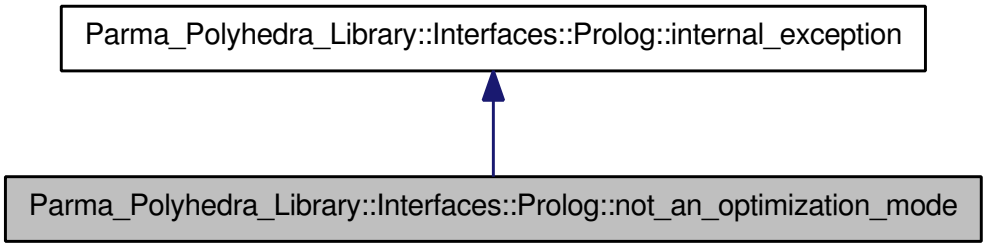
The documentation for this class was generated from the following file:

- ppl_prolog_common.defs.hh

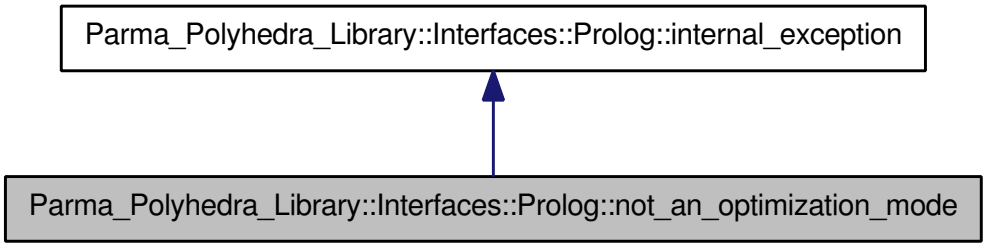
11.17 Parma_Polyhedra_Library::Interfaces::Prolog::not_an_optimization_-mode Class Reference

`#include <ppl_prolog_common.defs.hh>`

Inheritance diagram for Parma_Polyhedra_Library::Interfaces::Prolog::not_an_optimization_mode:



Collaboration diagram for Parma_Polyhedra_Library::Interfaces::Prolog::not_an_optimization_mode:



Public Member Functions

- not_an_optimization_mode (Prolog_term_ref term, const char ∗where)

11.17.1 Detailed Description

Definition at line 210 of file ppl_prolog_common.defs.hh.

11.17.2 Constructor & Destructor Documentation

11.17.2.1 Parma_Polyhedra_Library::Interfaces::Prolog::not_an_optimization_-mode::not_an_optimization_mode (Prolog_term_ref *term*, const char ∗ *where*) [inline]

Definition at line 212 of file ppl_prolog_common.defs.hh.

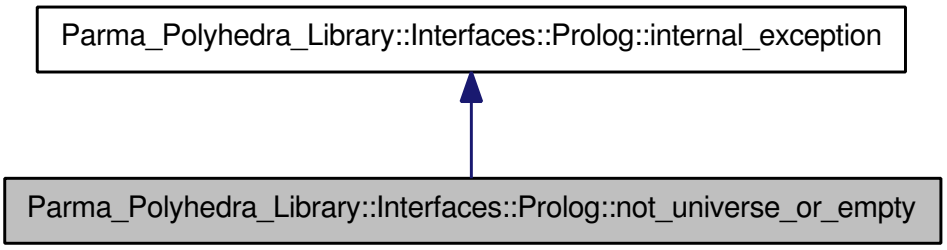
The documentation for this class was generated from the following file:

- ppl_prolog_common.defs.hh

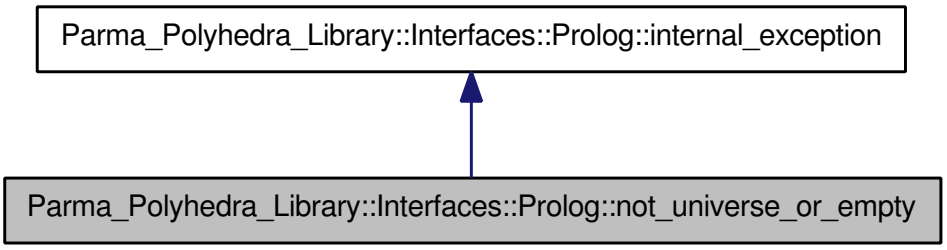
11.18 Parma_Polyhedra_Library::Interfaces::Prolog::not_universe_or_empty Class Reference

`#include <ppl_prolog_common.defs.hh>`

Inheritance diagram for Parma_Polyhedra_Library::Interfaces::Prolog::not_universe_or_empty:



Collaboration diagram for Parma_Polyhedra_Library::Interfaces::Prolog::not_universe_or_empty:



Public Member Functions

- not_universe_or_empty (Prolog_term_ref term, const char *where)

11.18.1 Detailed Description

Definition at line 274 of file ppl_prolog_common.defs.hh.

11.18.2 Constructor & Destructor Documentation

11.18.2.1 Parma_Polyhedra_Library::Interfaces::Prolog::not_universe_or_empty::not_universe_or_empty (Prolog_term_ref *term*, const char * *where*) [inline]

Definition at line 276 of file ppl_prolog_common.defs.hh.

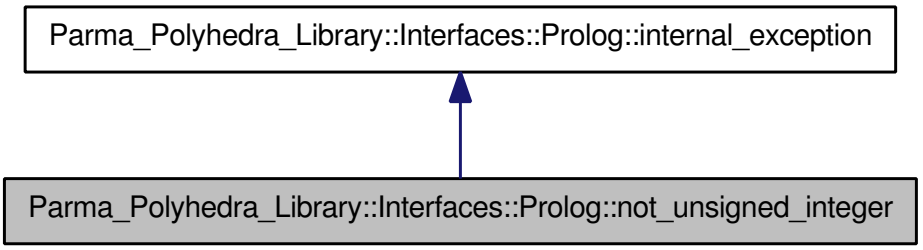
The documentation for this class was generated from the following file:

- ppl_prolog_common.defs.hh

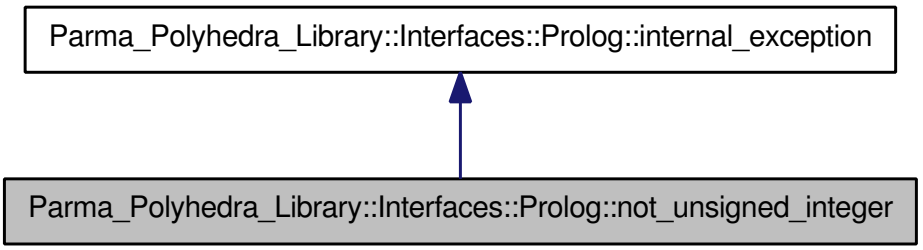
11.19 Parma_Polyhedra_Library::Interfaces::Prolog::not_unsigned_integer Class Reference

`#include <ppl_prolog_common.defs.hh>`

Inheritance diagram for Parma_Polyhedra_Library::Interfaces::Prolog::not_unsigned_integer:



Collaboration diagram for Parma_Polyhedra_Library::Interfaces::Prolog::not_unsigned_integer:



Public Member Functions

- not_unsigned_integer (Prolog_term_ref term, const char *where)

11.19.1 Detailed Description

Definition at line 189 of file ppl_prolog_common.defs.hh.

11.19.2 Constructor & Destructor Documentation

11.19.2.1 Parma_Polyhedra_Library::Interfaces::Prolog::not_unsigned_integer::not_unsigned_integer (Prolog_term_ref *term*, const char * *where*) [inline]

Definition at line 191 of file ppl_prolog_common.defs.hh.

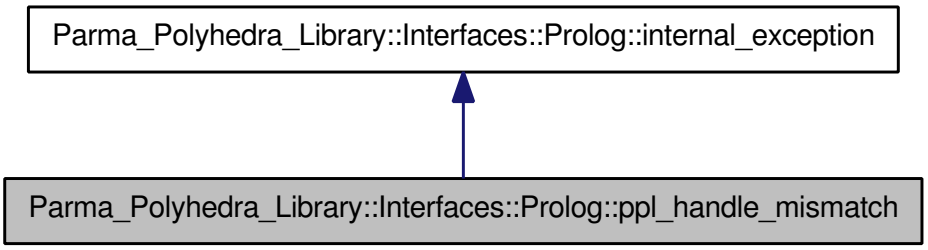
The documentation for this class was generated from the following file:

- ppl_prolog_common.defs.hh

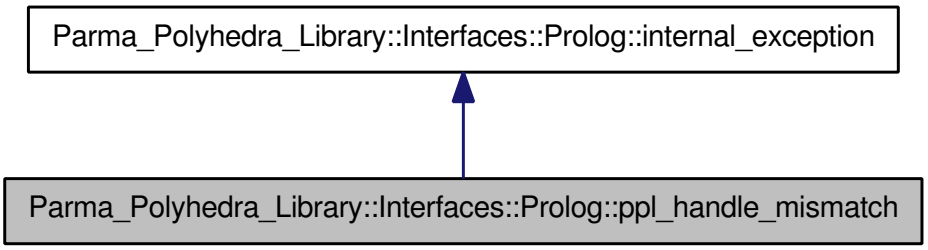
11.20 Parma_Polyhedra_Library::Interfaces::Prolog::ppl_handle_mismatch Class Reference

`#include <ppl_prolog_common.defs.hh>`

Inheritance diagram for Parma_Polyhedra_Library::Interfaces::Prolog::ppl_handle_mismatch:



Collaboration diagram for Parma_Polyhedra_Library::Interfaces::Prolog::ppl_handle_mismatch:



Public Member Functions

- ppl_handle_mismatch (Prolog_term_ref term, const char *where)

11.20.1 Detailed Description

Definition at line 309 of file ppl_prolog_common.defs.hh.

11.20.2 Constructor & Destructor Documentation

11.20.2.1 Parma_Polyhedra_Library::Interfaces::Prolog::ppl_handle_mismatch::ppl_handle_mismatch (Prolog_term_ref *term*, const char * *where*) [inline]

Definition at line 311 of file ppl_prolog_common.defs.hh.

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

- ppl_prolog_common.defs.hh

11.21 Parma_Polyhedra_Library::Interfaces::Prolog::PPL_integer_out_of_range Class Reference

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

Public Member Functions

- PPL_integer_out_of_range (const Parma_Polyhedra_Library::Coefficient &value)
- const Parma_Polyhedra_Library::Coefficient value () const

Private Attributes

- Parma_Polyhedra_Library::Coefficient n

11.21.1 Detailed Description

Definition at line 295 of file ppl_prolog_common.defs.hh.

11.21.2 Constructor & Destructor Documentation

11.21.2.1 Parma_Polyhedra_Library::Interfaces::Prolog::PPL_integer_out_of_range::PPL_integer_out_of_range (const Parma_Polyhedra_Library::Coefficient & *value*) [inline]

Definition at line 300 of file ppl_prolog_common.defs.hh.

11.21.3 Member Function Documentation

11.21.3.1 const Parma_Polyhedra_Library::Coefficient Parma_Polyhedra_Library::Interfaces::Prolog::PPL_integer_out_of_range::value () const [inline]

Definition at line 304 of file ppl_prolog_common.defs.hh.

References n.

11.21.4 Member Data Documentation

11.21.4.1 Parma_Polyhedra_Library::Coefficient Parma_Polyhedra_Library::Interfaces::Prolog::PPL_integer_out_of_range::n [private]

Definition at line 297 of file ppl_prolog_common.defs.hh.

Referenced by value().

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

- ppl_prolog_common.defs.hh

11.22 Parma_Polyhedra_Library::Interfaces::Prolog::Prolog_Interface_Atom Struct Reference

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

Public Attributes

- Prolog_atom * p_atom
- const char * name

11.22.1 Detailed Description

Definition at line 417 of file ppl_prolog_common.defs.hh.

11.22.2 Member Data Documentation

11.22.2.1 const char* Parma_Polyhedra_Library::Interfaces::Prolog::Prolog_Interface_Atom::name

Definition at line 419 of file ppl_prolog_common.defs.hh.

11.22.2.2 Prolog_atom* Parma_Polyhedra_Library::Interfaces::Prolog::Prolog_Interface_Atom::p_atom

Definition at line 418 of file ppl_prolog_common.defs.hh.

Referenced by ppl_initialize().

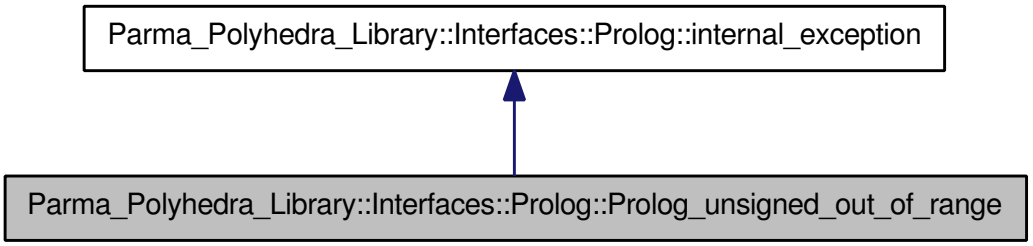
The documentation for this struct was generated from the following file:

- ppl_prolog_common.defs.hh

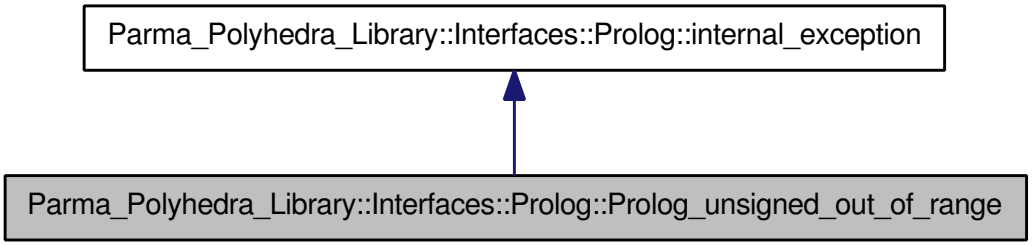
11.23 Parma_Polyhedra_Library::Interfaces::Prolog::Prolog_unsigned_out_of_range Class Reference

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

Inheritance diagram for Parma_Polyhedra_Library::Interfaces::Prolog::Prolog_unsigned_out_of_range:



Collaboration diagram for Parma_Polyhedra_Library::Interfaces::Prolog::Prolog_unsigned_out_of_range:



Public Member Functions

- Prolog_unsigned_out_of_range (Prolog_term_ref term, const char ∗where, unsigned long max)
- unsigned long max () const

Private Attributes

- unsigned long m

11.23.1 Detailed Description

Definition at line 158 of file ppl_prolog_common.defs.hh.

11.23.2 Constructor & Destructor Documentation

11.23.2.1 Parma_Polyhedra_Library::Interfaces::Prolog::Prolog_unsigned_out_of_range::Prolog_unsigned_out_of_range (Prolog_term_ref *term*, const char ∗ *where*, unsigned long *max*) [inline]

Definition at line 163 of file ppl_prolog_common.defs.hh.

11.23.3 Member Function Documentation

11.23.3.1 unsigned long Parma_Polyhedra_Library::Interfaces::Prolog::Prolog_unsigned_out_-of_range::max () const [inline]

Definition at line 170 of file ppl_prolog_common.defs.hh.

References m.

11.23.4 Member Data Documentation

11.23.4.1 unsigned long Parma_Polyhedra_Library::Interfaces::Prolog::Prolog_unsigned_out_-of_range::m [private]

Definition at line 160 of file ppl_prolog_common.defs.hh.

Referenced by max().

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

- ppl_prolog_common.defs.hh

11.24 Parma_Polyhedra_Library::Interfaces::Prolog::timeout_exception Class Reference

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

Public Member Functions

- void throw_me () const
- int priority () const

11.24.1 Detailed Description

Definition at line 511 of file ppl_prolog_common.defs.hh.

11.24.2 Member Function Documentation

11.24.2.1 int Parma_Polyhedra_Library::Interfaces::Prolog::timeout_exception::priority () const [inline]

Definition at line 517 of file ppl_prolog_common.defs.hh.

11.24.2.2 void Parma_Polyhedra_Library::Interfaces::Prolog::timeout_exception::throw_me () const [inline]

Definition at line 514 of file ppl_prolog_common.defs.hh.

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

- ppl_prolog_common.defs.hh

11.25 Parma_Polyhedra_Library::Interfaces::Prolog::unknown_interface_error Class Reference

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

Public Member Functions

- unknown_interface_error (const char ∗s)
- const char ∗ where () const

Private Attributes

- const char ∗ w

11.25.1 Detailed Description

Definition at line 316 of file ppl_prolog_common.defs.hh.

11.25.2 Constructor & Destructor Documentation

11.25.2.1 Parma_Polyhedra_Library::Interfaces::Prolog::unknown_interface_error::unknown_interface_error (const char ∗ *s*) [inline]

Definition at line 321 of file ppl_prolog_common.defs.hh.

11.25.3 Member Function Documentation

11.25.3.1 const char∗ Parma_Polyhedra_Library::Interfaces::Prolog::unknown_interface_error::where () const [inline]

Definition at line 325 of file ppl_prolog_common.defs.hh.

References w.

11.25.4 Member Data Documentation

11.25.4.1 const char∗ Parma_Polyhedra_Library::Interfaces::Prolog::unknown_interface_error::w [private]

Definition at line 318 of file ppl_prolog_common.defs.hh.

Referenced by where().

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

- ppl_prolog_common.defs.hh

12 File Documentation

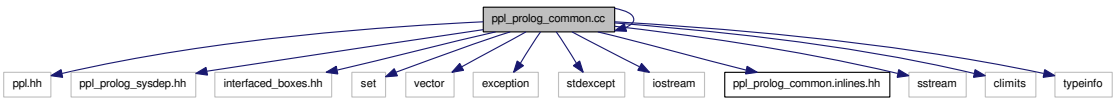
12.1 fdl.dox File Reference

12.2 gpl.dox File Reference

12.3 ppl_prolog_common.cc File Reference

```
#include "ppl_prolog_common.defs.hh"
#include "ppl.hh"
#include "ppl_prolog_sysdep.hh"
#include "interfaced_boxes.hh"
#include <set>
#include <vector>
#include <exception>
#include <stdexcept>
#include <iostream>
#include "ppl_prolog_common.inlines.hh"
#include <sstream>
#include <climits>
#include <typeinfo>
```

Include dependency graph for ppl_prolog_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::Prolog

Functions

- Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::Prolog_atom_term_from_string (const char *s)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const Prolog_unsigned_-out_of_range &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_unsigned_integer &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const non_linear &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_variable &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_an_integer &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const ppl_handle_mismatch &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_an_optimization_-mode &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_complexity_-class &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_control_-parameter_name &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_control_-parameter_value &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_pip_problem_-control_parameter_name &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_pip_problem_-control_parameter_value &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_universe_or_-empty &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_boolean &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_bounded_-integer_type_width &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_bounded_-integer_type_representation &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_bounded_-integer_type_overflow &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_relation &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_nil_-terminated_list &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const PPL_integer_out_of_-range &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const unknown_interface_-error &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const std::overflow_error &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const std::domain_error &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const std::length_error &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const std::invalid_argument &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const std::logic_error &e)

- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const std::bad_alloc &)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const std::exception &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception ()
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const timeout_exception &)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const deterministic_timeout_exception &)
- Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::variable_term (dimension_type varid)
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_to_boolean (Prolog_term_ref t, const char *where)
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_to_universe_or_empty (Prolog_term_ref t, const char *where)
- Parma_Polyhedra_Library::Coefficient Parma_Polyhedra_Library::Interfaces::Prolog::integer_term_to_Coefficient (Prolog_term_ref t)
- Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::Coefficient_to_integer_term (const Coefficient &n)
- bool Parma_Polyhedra_Library::Interfaces::Prolog::unify_long (Prolog_term_ref t, long l)
- bool Parma_Polyhedra_Library::Interfaces::Prolog::unify_ulong (Prolog_term_ref t, unsigned long l)
- Parma_Polyhedra_Library::Linear_Expression Parma_Polyhedra_Library::Interfaces::Prolog::build_linear_expression (Prolog_term_ref t, const char *where)
- Parma_Polyhedra_Library::Constraint Parma_Polyhedra_Library::Interfaces::Prolog::build_constraint (Prolog_term_ref t, const char *where)
- Parma_Polyhedra_Library::Congruence Parma_Polyhedra_Library::Interfaces::Prolog::build_congruence (Prolog_term_ref t, const char *where)
- Parma_Polyhedra_Library::Generator Parma_Polyhedra_Library::Interfaces::Prolog::build_generator (Prolog_term_ref t, const char *where)
- Parma_Polyhedra_Library::Grid_Generator Parma_Polyhedra_Library::Interfaces::Prolog::build_grid_generator (Prolog_term_ref t, const char *where)
- template<typename R >
  Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::get_homogeneous_expression (const R &r)
- Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::get_linear_expression (const Linear_Expression &le)
- Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::constraint_term (const Constraint &c)
- Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::congruence_term (const Congruence &cg)
- Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::generator_term (const Generator &g)
- Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::grid_generator_term (const Grid_Generator &g)
- Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::artificial_parameter_term (const PIP_Tree_Node::Artificial_Parameter &art)
- Parma_Polyhedra_Library::Variable Parma_Polyhedra_Library::Interfaces::Prolog::term_to_Variable (Prolog_term_ref t, const char *where)
- Parma_Polyhedra_Library::Coefficient Parma_Polyhedra_Library::Interfaces::Prolog::term_to_Coefficient (Prolog_term_ref t, const char *where)
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_to_bounded_integer_type_width (Prolog_term_ref t, const char *where)
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_to_bounded_integer_type_representation (Prolog_term_ref t, const char *where)

- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_to_bounded_integer_type_-overflow (Prolog_term_ref t, const char ∗where)
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_to_optimization_mode (Prolog_-term_ref t, const char ∗where)
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_to_control_parameter_name (Prolog_term_ref t, const char ∗where)
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_to_pip_problem_control_-parameter_name (Prolog_term_ref t, const char ∗where)
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_to_control_parameter_value (Prolog_term_ref t, const char ∗where)
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_to_pip_problem_control_-parameter_value (Prolog_term_ref t, const char ∗where)
- void Parma_Polyhedra_Library::Interfaces::Prolog::check_nil_terminating (Prolog_term_ref t, const char ∗where)
- dimension_type Parma_Polyhedra_Library::Interfaces::Prolog::max_representable_dimension (dimension_type d)
- bool Parma_Polyhedra_Library::Interfaces::Prolog::term_to_boundary (Prolog_term_ref t_b, Boundary_Kind kind, bool &finite, bool &closed, Coefficient &n, Coefficient &d)
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_to_relation (Prolog_term_ref t, const char ∗where)
- Parma_Polyhedra_Library::Relation_Symbol Parma_Polyhedra_Library::Interfaces::Prolog::term_-to_relation_symbol (Prolog_term_ref t_r, const char ∗where)
- Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::rational_term (const Rational_-Box::interval_type::boundary_type &q)
- Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::interval_term (const Rational_-Box::interval_type &i)
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_to_complexity_class (Prolog_-term_ref t, const char ∗where)
- Prolog_foreign_return_type ppl_version_major (Prolog_term_ref t_v)
- Prolog_foreign_return_type ppl_version_minor (Prolog_term_ref t_v)
- Prolog_foreign_return_type ppl_version_revision (Prolog_term_ref t_v)
- Prolog_foreign_return_type ppl_version_beta (Prolog_term_ref t_v)
- Prolog_foreign_return_type ppl_version (Prolog_term_ref t_v)
- Prolog_foreign_return_type ppl_banner (Prolog_term_ref t_b)
- Prolog_foreign_return_type ppl_max_space_dimension (Prolog_term_ref t_msd)
- Prolog_foreign_return_type ppl_initialize ()
- Prolog_foreign_return_type ppl_finalize ()
- Prolog_foreign_return_type ppl_set_rounding_for_PPL ()
- Prolog_foreign_return_type ppl_restore_pre_PPL_rounding ()
- Prolog_foreign_return_type ppl_irrational_precision (Prolog_term_ref t_p)
- Prolog_foreign_return_type ppl_set_irrational_precision (Prolog_term_ref t_p)
- Prolog_foreign_return_type ppl_set_timeout_exception_atom (Prolog_term_ref t_tea)
- Prolog_foreign_return_type ppl_timeout_exception_atom (Prolog_term_ref t)
- Prolog_foreign_return_type ppl_set_timeout (Prolog_term_ref t_time)
- Prolog_foreign_return_type ppl_reset_timeout ()
- Prolog_foreign_return_type ppl_set_deterministic_timeout (Prolog_term_ref t_weight)
- Prolog_foreign_return_type ppl_reset_deterministic_timeout ()
- Prolog_foreign_return_type ppl_Coefficient_bits (Prolog_term_ref t_bits)
- Prolog_foreign_return_type ppl_Coefficient_is_bounded ()
- Prolog_foreign_return_type ppl_Coefficient_min (Prolog_term_ref t_min)
- Prolog_foreign_return_type ppl_Coefficient_max (Prolog_term_ref t_max)

- Prolog_foreign_return_type ppl_new_MIP_Problem_from_space_dimension (Prolog_term_ref t_nd, Prolog_term_ref t_mip)
- Prolog_foreign_return_type ppl_new_MIP_Problem (Prolog_term_ref t_nd, Prolog_term_ref t_clist, Prolog_term_ref t_le_expr, Prolog_term_ref t_opt, Prolog_term_ref t_mip)
- Prolog_foreign_return_type ppl_new_MIP_Problem_from_MIP_Problem (Prolog_term_ref t_mip_source, Prolog_term_ref t_mip)
- Prolog_foreign_return_type ppl_MIP_Problem_swap (Prolog_term_ref t_lhs, Prolog_term_ref t_rhs)
- Prolog_foreign_return_type ppl_delete_MIP_Problem (Prolog_term_ref t_mip)
- Prolog_foreign_return_type ppl_MIP_Problem_space_dimension (Prolog_term_ref t_mip, Prolog_term_ref t_sd)
- Prolog_foreign_return_type ppl_MIP_Problem_integer_space_dimensions (Prolog_term_ref t_mip, Prolog_term_ref t_vlist)
- Prolog_foreign_return_type ppl_MIP_Problem_constraints (Prolog_term_ref t_mip, Prolog_term_ref t_clist)
- Prolog_foreign_return_type ppl_MIP_Problem_objective_function (Prolog_term_ref t_mip, Prolog_term_ref t_le_expr)
- Prolog_foreign_return_type ppl_MIP_Problem_optimization_mode (Prolog_term_ref t_mip, Prolog_term_ref t_opt)
- Prolog_foreign_return_type ppl_MIP_Problem_clear (Prolog_term_ref t_mip)
- Prolog_foreign_return_type ppl_MIP_Problem_add_space_dimensions_and_embed (Prolog_term_ref t_mip, Prolog_term_ref t_nnd)
- Prolog_foreign_return_type ppl_MIP_Problem_add_to_integer_space_dimensions (Prolog_term_ref t_mip, Prolog_term_ref t_vlist)
- Prolog_foreign_return_type ppl_MIP_Problem_add_constraint (Prolog_term_ref t_mip, Prolog_term_ref t_c)
- Prolog_foreign_return_type ppl_MIP_Problem_add_constraints (Prolog_term_ref t_mip, Prolog_term_ref t_clist)
- Prolog_foreign_return_type ppl_MIP_Problem_set_objective_function (Prolog_term_ref t_mip, Prolog_term_ref t_le_expr)
- Prolog_foreign_return_type ppl_MIP_Problem_set_optimization_mode (Prolog_term_ref t_mip, Prolog_term_ref t_opt)
- Prolog_foreign_return_type ppl_MIP_Problem_set_control_parameter (Prolog_term_ref t_mip, Prolog_term_ref t_cp_value)
- Prolog_foreign_return_type ppl_MIP_Problem_get_control_parameter (Prolog_term_ref t_mip, Prolog_term_ref t_cp_name, Prolog_term_ref t_cp_value)
- Prolog_foreign_return_type ppl_MIP_Problem_is_satisfiable (Prolog_term_ref t_mip)
- Prolog_foreign_return_type ppl_MIP_Problem_solve (Prolog_term_ref t_mip, Prolog_term_ref t_status)
- Prolog_foreign_return_type ppl_MIP_Problem_feasible_point (Prolog_term_ref t_mip, Prolog_term_ref t_g)
- Prolog_foreign_return_type ppl_MIP_Problem_optimizing_point (Prolog_term_ref t_mip, Prolog_term_ref t_g)
- Prolog_foreign_return_type ppl_MIP_Problem_optimal_value (Prolog_term_ref t_mip, Prolog_term_ref t_n, Prolog_term_ref t_d)
- Prolog_foreign_return_type ppl_MIP_Problem_evaluate_objective_function (Prolog_term_ref t_mip, Prolog_term_ref t_g, Prolog_term_ref t_n, Prolog_term_ref t_d)
- Prolog_foreign_return_type ppl_MIP_Problem_OK (Prolog_term_ref t_mip)
- Prolog_foreign_return_type ppl_MIP_Problem_ascii_dump (Prolog_term_ref t_mip)
- Prolog_foreign_return_type ppl_new_PIP_Problem_from_space_dimension (Prolog_term_ref t_nd, Prolog_term_ref t_pip)

- Prolog_foreign_return_type ppl_new_PIP_Problem (Prolog_term_ref t_dim, Prolog_term_ref t_cs, Prolog_term_ref t_params, Prolog_term_ref t_pip)
- Prolog_foreign_return_type ppl_new_PIP_Problem_from_PIP_Problem (Prolog_term_ref t_pip_source, Prolog_term_ref t_pip)
- Prolog_foreign_return_type ppl_PIP_Problem_swap (Prolog_term_ref t_lhs, Prolog_term_ref t_rhs)
- Prolog_foreign_return_type ppl_delete_PIP_Problem (Prolog_term_ref t_pip)
- Prolog_foreign_return_type ppl_PIP_Problem_space_dimension (Prolog_term_ref t_pip, Prolog_term_ref t_sd)
- Prolog_foreign_return_type ppl_PIP_Problem_parameter_space_dimensions (Prolog_term_ref t_pip, Prolog_term_ref t_vlist)
- Prolog_foreign_return_type ppl_PIP_Problem_constraints (Prolog_term_ref t_pip, Prolog_term_ref t_clist)
- Prolog_foreign_return_type ppl_PIP_Problem_clear (Prolog_term_ref t_pip)
- Prolog_foreign_return_type ppl_PIP_Problem_add_space_dimensions_and_embed (Prolog_term_ref t_pip, Prolog_term_ref t_num_vars, Prolog_term_ref t_num_params)
- Prolog_foreign_return_type ppl_PIP_Problem_add_to_parameter_space_dimensions (Prolog_term_ref t_pip, Prolog_term_ref t_vlist)
- Prolog_foreign_return_type ppl_PIP_Problem_add_constraint (Prolog_term_ref t_pip, Prolog_term_ref t_c)
- Prolog_foreign_return_type ppl_PIP_Problem_add_constraints (Prolog_term_ref t_pip, Prolog_term_ref t_clist)
- Prolog_foreign_return_type ppl_PIP_Problem_get_control_parameter (Prolog_term_ref t_pip, Prolog_term_ref t_cp_name, Prolog_term_ref t_cp_value)
- Prolog_foreign_return_type ppl_PIP_Problem_set_control_parameter (Prolog_term_ref t_pip, Prolog_term_ref t_cp_value)
- Prolog_foreign_return_type ppl_PIP_Problem_has_big_parameter_dimension (Prolog_term_ref t_pip, Prolog_term_ref t_d)
- Prolog_foreign_return_type ppl_PIP_Problem_set_big_parameter_dimension (Prolog_term_ref t_pip, Prolog_term_ref t_d)
- Prolog_foreign_return_type ppl_PIP_Problem_is_satisfiable (Prolog_term_ref t_pip)
- Prolog_foreign_return_type ppl_PIP_Problem_solve (Prolog_term_ref t_pip, Prolog_term_ref t_status)
- Prolog_foreign_return_type ppl_PIP_Problem_solution (Prolog_term_ref t_pip, Prolog_term_ref t_pip_tree)
- Prolog_foreign_return_type ppl_PIP_Problem_optimizing_solution (Prolog_term_ref t_pip, Prolog_term_ref t_pip_tree)
- Prolog_foreign_return_type ppl_PIP_Problem_OK (Prolog_term_ref t_pip)
- Prolog_foreign_return_type ppl_PIP_Problem_ascii_dump (Prolog_term_ref t_pip)
- Prolog_foreign_return_type ppl_PIP_Tree_Node_constraints (Prolog_term_ref t_pip, Prolog_term_ref t_cs)
- Prolog_foreign_return_type ppl_PIP_Tree_Node_is_solution (Prolog_term_ref t_pip)
- Prolog_foreign_return_type ppl_PIP_Tree_Node_is_decision (Prolog_term_ref t_pip)
- Prolog_foreign_return_type ppl_PIP_Tree_Node_is_bottom (Prolog_term_ref t_pip)
- Prolog_foreign_return_type ppl_PIP_Tree_Node_artificials (Prolog_term_ref t_tree_node, Prolog_term_ref t_artlist)
- Prolog_foreign_return_type ppl_PIP_Tree_Node_parametric_values (Prolog_term_ref t_pip, Prolog_term_ref t_var, Prolog_term_ref t_le)
- Prolog_foreign_return_type ppl_PIP_Tree_Node_true_child (Prolog_term_ref t_pip, Prolog_term_ref t_ptree)
- Prolog_foreign_return_type ppl_PIP_Tree_Node_false_child (Prolog_term_ref t_pip, Prolog_term_ref t_ptree)
- Prolog_foreign_return_type ppl_PIP_Tree_Node_OK (Prolog_term_ref t_pip)

Variables

- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::out_of_memory_exception_atom
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_divided_by
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_universe
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_max
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_min
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_unfeasible
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_unbounded
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_optimized
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_pricing
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_pricing_steepest_edge_float
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_pricing_steepest_edge_exact
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_pricing_textbook
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_cutting_strategy
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_cutting_strategy_first
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_cutting_strategy_deepest
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_cutting_strategy_all
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_pivot_row_strategy
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_pivot_row_strategy_first
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_pivot_row_strategy_max_column
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_time_out
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_out_of_memory
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_ppl_overflow_error
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_ppl_domain_error
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_ppl_length_error
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_ppl_invalid_argument
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_ppl_logic_error
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_ppl_representation_error
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_expected
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_found
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_where
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::timeout_exception_atom
- bool Parma_Polyhedra_Library::Interfaces::Prolog::Prolog_interface_initialized = false

12.3.1 Function Documentation

12.3.1.1 Prolog_foreign_return_type ppl_banner (Prolog_term_ref *t_b*)

Definition at line 1774 of file ppl_prolog_common.cc.

References CATCH_ALL.

12.3.1.2 Prolog_foreign_return_type ppl_Coefficient_bits (Prolog_term_ref *t_bits*)

Definition at line 1981 of file ppl_prolog_common.cc.

References CATCH_ALL, and Parma_Polyhedra_Library::Interfaces::Prolog::unify_ulong().

12.3.1.3 Prolog_foreign_return_type ppl_Coefficient_is_bounded ()

Definition at line 1990 of file ppl_prolog_common.cc.

References CATCH_ALL.

12.3.1.4 Prolog_foreign_return_type ppl_Coefficient_max (Prolog_term_ref *t_max*)

Definition at line 2014 of file ppl_prolog_common.cc.

References CATCH_ALL.

12.3.1.5 Prolog_foreign_return_type ppl_Coefficient_min (Prolog_term_ref *t_min*)

Definition at line 1999 of file ppl_prolog_common.cc.

References CATCH_ALL.

12.3.1.6 Prolog_foreign_return_type ppl_delete_MIP_Problem (Prolog_term_ref *t_mip*)

Definition at line 2120 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_UNREGISTER.

12.3.1.7 Prolog_foreign_return_type ppl_delete_PIP_Problem (Prolog_term_ref *t_pip*)

Definition at line 2621 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_UNREGISTER.

12.3.1.8 Prolog_foreign_return_type ppl_finalize ()

Definition at line 1814 of file ppl_prolog_common.cc.

References CATCH_ALL, and Parma_Polyhedra_Library::Interfaces::Prolog::Prolog_interface_-initialized.

12.3.1.9 Prolog_foreign_return_type ppl_initialize ()

Definition at line 1794 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_out_of_memory, Parma_Polyhedra_Library::Interfaces::Prolog::a_time_out, CATCH_ALL, Parma_Polyhedra_Library::Interfaces::Prolog::out_of_memory_exception_atom, Parma_Polyhedra_Library::Interfaces::Prolog::Prolog_Interface_Atom::p_atom, Parma_Polyhedra_Library::Interfaces::Prolog::prolog_interface_atoms, Parma_Polyhedra_Library::Interfaces::Prolog::Prolog_interface_initialized, and Parma_Polyhedra_Library::Interfaces::Prolog::timeout_exception_atom.

12.3.1.10 Prolog_foreign_return_type ppl_irrational_precision (Prolog_term_ref *t_p*)

Definition at line 1851 of file ppl_prolog_common.cc.

References CATCH_ALL, and Parma_Polyhedra_Library::Interfaces::Prolog::unify_ulong().

12.3.1.11 Prolog_foreign_return_type ppl_max_space_dimension (Prolog_term_ref *t_msd*)

Definition at line 1785 of file ppl_prolog_common.cc.

References CATCH_ALL, Parma_Polyhedra_Library::Interfaces::Prolog::max_representable_dimension(), and Parma_Polyhedra_Library::Interfaces::Prolog::unify_ulong().

12.3.1.12 Prolog_foreign_return_type ppl_MIP_Problem_add_constraint (Prolog_term_ref *t_mip*, Prolog_term_ref *t_c*)

Definition at line 2273 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::build_constraint(), CATCH_ALL, and PPL_CHECK.

12.3.1.13 Prolog_foreign_return_type ppl_MIP_Problem_add_constraints (Prolog_term_ref *t_mip*, Prolog_term_ref *t_clist*)

Definition at line 2285 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::build_constraint(), CATCH_ALL, Parma_Polyhedra_Library::Interfaces::Prolog::check_nil_terminating(), and PPL_CHECK.

12.3.1.14 Prolog_foreign_return_type ppl_MIP_Problem_add_space_dimensions_and_embed (Prolog_term_ref *t_mip*, Prolog_term_ref *t_nnd*)

Definition at line 2234 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.3.1.15 Prolog_foreign_return_type ppl_MIP_Problem_add_to_integer_space_dimensions (Prolog_term_ref *t_mip*, Prolog_term_ref *t_vlist*)

Definition at line 2248 of file ppl_prolog_common.cc.

References CATCH_ALL, Parma_Polyhedra_Library::Interfaces::Prolog::check_nil_terminating(), PPL_-CHECK, and Parma_Polyhedra_Library::Interfaces::Prolog::term_to_Variable().

12.3.1.16 Prolog_foreign_return_type ppl_MIP_Problem_ascii_dump (Prolog_term_ref *t_mip*)

Definition at line 2515 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.3.1.17 Prolog_foreign_return_type ppl_MIP_Problem_clear (Prolog_term_ref *t_mip*)

Definition at line 2221 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.3.1.18 Prolog_foreign_return_type ppl_MIP_Problem_constraints (Prolog_term_ref *t_mip*, Prolog_term_ref *t_clist*)

Definition at line 2166 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_nil, CATCH_ALL, Parma_Polyhedra_-Library::Interfaces::Prolog::constraint_term(), and PPL_CHECK.

12.3.1.19 Prolog_foreign_return_type ppl_MIP_Problem_evaluate_objective_function (Prolog_term_ref *t_mip*, Prolog_term_ref *t_g*, Prolog_term_ref *t_n*, Prolog_term_ref *t_d*)

Definition at line 2484 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::build_generator(), CATCH_ALL, and PPL_-CHECK.

12.3.1.20 Prolog_foreign_return_type ppl_MIP_Problem_feasible_point (Prolog_term_ref *t_mip*, Prolog_term_ref *t_g*)

Definition at line 2438 of file ppl_prolog_common.cc.

References CATCH_ALL, Parma_Polyhedra_Library::Interfaces::Prolog::generator_term(), and PPL_-CHECK.

12.3.1.21 Prolog_foreign_return_type ppl_MIP_Problem_get_control_parameter (Prolog_term_ref *t_mip*, Prolog_term_ref *t_cp_name*, Prolog_term_ref *t_cp_value*)

Definition at line 2360 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_pricing, Parma_Polyhedra_Library::Interfaces::Prolog::a_pricing_steepest_edge_exact, Parma_Polyhedra_Library::Interfaces::Prolog::a_pricing_steepest_edge_float, Parma_Polyhedra_Library::Interfaces::Prolog::a_pricing_textbook, CATCH_ALL, PPL_CHECK, and Parma_Polyhedra_Library::Interfaces::Prolog::term_to_control_parameter_name().

12.3.1.22 Prolog_foreign_return_type ppl_MIP_Problem_integer_space_dimensions (Prolog_term_ref *t_mip*, Prolog_term_ref *t_vlist*)

Definition at line 2144 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_nil, CATCH_ALL, PPL_CHECK, and Parma_Polyhedra_Library::Interfaces::Prolog::variable_term().

12.3.1.23 Prolog_foreign_return_type ppl_MIP_Problem_is_satisfiable (Prolog_term_ref *t_mip*)

Definition at line 2397 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.3.1.24 Prolog_foreign_return_type ppl_MIP_Problem_objective_function (Prolog_term_ref *t_mip*, Prolog_term_ref *t_le_expr*)

Definition at line 2186 of file ppl_prolog_common.cc.

References CATCH_ALL, Parma_Polyhedra_Library::Interfaces::Prolog::get_linear_expression(), and PPL_CHECK.

12.3.1.25 Prolog_foreign_return_type ppl_MIP_Problem_OK (Prolog_term_ref *t_mip*)

Definition at line 2503 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.3.1.26 Prolog_foreign_return_type ppl_MIP_Problem_optimal_value (Prolog_term_ref *t_mip*, Prolog_term_ref *t_n*, Prolog_term_ref *t_d*)

Definition at line 2466 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.3.1.27 Prolog_foreign_return_type ppl_MIP_Problem_optimization_mode (Prolog_term_ref *t_mip*, Prolog_term_ref *t_opt*)

Definition at line 2203 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_max, Parma_Polyhedra_Library::Interfaces::Prolog::a_min, CATCH_ALL, and PPL_CHECK.

12.3.1.28 Prolog_foreign_return_type ppl_MIP_Problem_optimizing_point (Prolog_term_ref *t_mip*, Prolog_term_ref *t_g*)

Definition at line 2452 of file ppl_prolog_common.cc.

References CATCH_ALL, Parma_Polyhedra_Library::Interfaces::Prolog::generator_term(), and PPL_CHECK.

12.3.1.29 Prolog_foreign_return_type ppl_MIP_Problem_set_control_parameter (Prolog_term_ref *t_mip*, Prolog_term_ref *t_cp_value*)

Definition at line 2338 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_pricing_steepest_edge_exact, Parma_Polyhedra_Library::Interfaces::Prolog::a_pricing_steepest_edge_float, Parma_Polyhedra_Library::Interfaces::Prolog::a_pricing_textbook, CATCH_ALL, PPL_CHECK, and Parma_Polyhedra_Library::Interfaces::Prolog::term_to_control_parameter_value().

12.3.1.30 Prolog_foreign_return_type ppl_MIP_Problem_set_objective_function (Prolog_term_ref *t_mip*, Prolog_term_ref *t_le_expr*)

Definition at line 2309 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::build_linear_expression(), CATCH_ALL, and PPL_CHECK.

12.3.1.31 Prolog_foreign_return_type ppl_MIP_Problem_set_optimization_mode (Prolog_term_ref *t_mip*, Prolog_term_ref *t_opt*)

Definition at line 2322 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_max, CATCH_ALL, PPL_CHECK, and Parma_Polyhedra_Library::Interfaces::Prolog::term_to_optimization_mode().

12.3.1.32 Prolog_foreign_return_type ppl_MIP_Problem_solve (Prolog_term_ref *t_mip*, Prolog_term_ref *t_status*)

Definition at line 2409 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_optimized, Parma_Polyhedra_Library::Interfaces::Prolog::a_unbounded, Parma_Polyhedra_Library::Interfaces::Prolog::a_unfeasible, CATCH_ALL, and PPL_CHECK.

12.3.1.33 Prolog_foreign_return_type ppl_MIP_Problem_space_dimension (Prolog_term_ref *t_mip*, Prolog_term_ref *t_sd*)

Definition at line 2132 of file ppl_prolog_common.cc.

References CATCH_ALL, PPL_CHECK, and Parma_Polyhedra_Library::Interfaces::Prolog::unify_ulong().

12.3.1.34 Prolog_foreign_return_type ppl_MIP_Problem_swap (Prolog_term_ref *t_lhs*, Prolog_term_ref *t_rhs*)

Definition at line 2106 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.3.1.35 Prolog_foreign_return_type ppl_new_MIP_Problem (Prolog_term_ref *t_nd*, Prolog_term_ref *t_clist*, Prolog_term_ref *t_le_expr*, Prolog_term_ref *t_opt*, Prolog_term_ref *t_mip*)

Definition at line 2048 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_max, Parma_Polyhedra_Library::Interfaces::Prolog::build_constraint(), Parma_Polyhedra_Library::Interfaces::Prolog::build_linear_expression(), CATCH_ALL, Parma_Polyhedra_Library::Interfaces::Prolog::check_nil_terminating(), PPL_REGISTER, and Parma_Polyhedra_Library::Interfaces::Prolog::term_to_optimization_mode().

12.3.1.36 Prolog_foreign_return_type ppl_new_MIP_Problem_from_MIP_Problem (Prolog_term_ref *t_mip_source*, Prolog_term_ref *t_mip*)

Definition at line 2084 of file ppl_prolog_common.cc.

References CATCH_ALL, PPL_CHECK, and PPL_REGISTER.

12.3.1.37 Prolog_foreign_return_type ppl_new_MIP_Problem_from_space_dimension (Prolog_term_ref *t_nd*, Prolog_term_ref *t_mip*)

Definition at line 2030 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_REGISTER.

12.3.1.38 Prolog_foreign_return_type ppl_new_PIP_Problem (Prolog_term_ref *t_dim*, Prolog_term_ref *t_cs*, Prolog_term_ref *t_params*, Prolog_term_ref *t_pip*)

Definition at line 2546 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::build_constraint(), CATCH_ALL, Parma_-Polyhedra_Library::Interfaces::Prolog::check_nil_terminating(), PPL_REGISTER, and Parma_-Polyhedra_Library::Interfaces::Prolog::term_to_Variable().

12.3.1.39 Prolog_foreign_return_type ppl_new_PIP_Problem_from_PIP_Problem (Prolog_term_ref *t_pip_source*, Prolog_term_ref *t_pip*)

Definition at line 2585 of file ppl_prolog_common.cc.

References CATCH_ALL, PPL_CHECK, and PPL_REGISTER.

12.3.1.40 Prolog_foreign_return_type ppl_new_PIP_Problem_from_space_dimension (Prolog_term_ref *t_nd*, Prolog_term_ref *t_pip*)

Definition at line 2528 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_REGISTER.

12.3.1.41 Prolog_foreign_return_type ppl_PIP_Problem_add_constraint (Prolog_term_ref *t_pip*, Prolog_term_ref *t_c*)

Definition at line 2742 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::build_constraint(), CATCH_ALL, and PPL_-CHECK.

12.3.1.42 Prolog_foreign_return_type ppl_PIP_Problem_add_constraints (Prolog_term_ref *t_pip*, Prolog_term_ref *t_clist*)

Definition at line 2754 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::build_constraint(), CATCH_ALL, Parma_-Polyhedra_Library::Interfaces::Prolog::check_nil_terminating(), and PPL_CHECK.

12.3.1.43 Prolog_foreign_return_type ppl_PIP_Problem_add_space_dimensions_and_embed (Prolog_term_ref *t_pip*, Prolog_term_ref *t_num_vars*, Prolog_term_ref *t_num_params*)

Definition at line 2700 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.3.1.44 Prolog_foreign_return_type ppl_PIP_Problem_add_to_parameter_space_dimensions (Prolog_term_ref *t_pip*, Prolog_term_ref *t_vlist*)

Definition at line 2717 of file ppl_prolog_common.cc.

References CATCH_ALL, Parma_Polyhedra_Library::Interfaces::Prolog::check_nil_terminating(), PPL_-CHECK, and Parma_Polyhedra_Library::Interfaces::Prolog::term_to_Variable().

12.3.1.45 Prolog_foreign_return_type ppl_PIP_Problem_ascii_dump (Prolog_term_ref *t_pip*)

Definition at line 2975 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.3.1.46 Prolog_foreign_return_type ppl_PIP_Problem_clear (Prolog_term_ref *t_pip*)

Definition at line 2687 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.3.1.47 Prolog_foreign_return_type ppl_PIP_Problem_constraints (Prolog_term_ref *t_pip*, Prolog_term_ref *t_clist*)

Definition at line 2667 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_nil, CATCH_ALL, Parma_Polyhedra_-Library::Interfaces::Prolog::constraint_term(), and PPL_CHECK.

12.3.1.48 Prolog_foreign_return_type ppl_PIP_Problem_get_control_parameter (Prolog_term_ref *t_pip*, Prolog_term_ref *t_cp_name*, Prolog_term_ref *t_cp_value*)

Definition at line 2778 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_cutting_strategy, Parma_Polyhedra_Library::Interfaces::Prolog::a_cutting_strategy_all, Parma_Polyhedra_Library::Interfaces::Prolog::a_cutting_strategy_deepest, Parma_Polyhedra_Library::Interfaces::Prolog::a_cutting_strategy_first, Parma_Polyhedra_Library::Interfaces::Prolog::a_pivot_row_strategy, Parma_Polyhedra_Library::Interfaces::Prolog::a_pivot_row_strategy_first, Parma_Polyhedra_Library::Interfaces::Prolog::a_pivot_row_strategy_max_column, CATCH_ALL, PPL_CHECK, and Parma_Polyhedra_Library::Interfaces::Prolog::term_to_pip_problem_control_parameter_name().

12.3.1.49 Prolog_foreign_return_type ppl_PIP_Problem_has_big_parameter_dimension (Prolog_term_ref *t_pip*, Prolog_term_ref *t_d*)

Definition at line 2859 of file ppl_prolog_common.cc.

References CATCH_ALL, PPL_CHECK, and Parma_Polyhedra_Library::Interfaces::Prolog::unify_ulong().

12.3.1.50 Prolog_foreign_return_type ppl_PIP_Problem_is_satisfiable (Prolog_term_ref *t_pip*)

Definition at line 2889 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.3.1.51 Prolog_foreign_return_type ppl_PIP_Problem_OK (Prolog_term_ref *t_pip*)

Definition at line 2963 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.3.1.52 Prolog_foreign_return_type ppl_PIP_Problem_optimizing_solution (Prolog_term_ref *t_pip*, Prolog_term_ref *t_pip_tree*)

Definition at line 2945 of file ppl_prolog_common.cc.

References CATCH_ALL, PPL_CHECK, and PPL_WEAK_REGISTER.

12.3.1.53 Prolog_foreign_return_type ppl_PIP_Problem_parameter_space_dimensions (Prolog_term_ref *t_pip*, Prolog_term_ref *t_vlist*)

Definition at line 2645 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_nil, CATCH_ALL, PPL_CHECK, and Parma_Polyhedra_Library::Interfaces::Prolog::variable_term().

12.3.1.54 Prolog_foreign_return_type ppl_PIP_Problem_set_big_parameter_dimension (Prolog_term_ref *t_pip*, Prolog_term_ref *t_d*)

Definition at line 2875 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.3.1.55 Prolog_foreign_return_type ppl_PIP_Problem_set_control_parameter (Prolog_term_ref *t_pip*, Prolog_term_ref *t_cp_value*)

Definition at line 2833 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_cutting_strategy_all, Parma_Polyhedra_Library::Interfaces::Prolog::a_cutting_strategy_deepest, Parma_Polyhedra_Library::Interfaces::Prolog::a_cutting_strategy_first, Parma_Polyhedra_Library::Interfaces::Prolog::a_pivot_row_strategy_first, Parma_Polyhedra_Library::Interfaces::Prolog::a_pivot_row_strategy_max_column, CATCH_ALL, PPL_CHECK, and Parma_Polyhedra_Library::Interfaces::Prolog::term_to_pip_problem_control_parameter_value().

12.3.1.56 Prolog_foreign_return_type ppl_PIP_Problem_solution (Prolog_term_ref *t_pip*, Prolog_term_ref *t_pip_tree*)

Definition at line 2927 of file ppl_prolog_common.cc.

References CATCH_ALL, PPL_CHECK, and PPL_WEAK_REGISTER.

12.3.1.57 Prolog_foreign_return_type ppl_PIP_Problem_solve (Prolog_term_ref *t_pip*, Prolog_term_ref *t_status*)

Definition at line 2901 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_optimized, Parma_Polyhedra_Library::Interfaces::Prolog::a_unfeasible, CATCH_ALL, and PPL_CHECK.

12.3.1.58 Prolog_foreign_return_type ppl_PIP_Problem_space_dimension (Prolog_term_ref *t_pip*, Prolog_term_ref *t_sd*)

Definition at line 2633 of file ppl_prolog_common.cc.

References CATCH_ALL, PPL_CHECK, and Parma_Polyhedra_Library::Interfaces::Prolog::unify_ulong().

12.3.1.59 Prolog_foreign_return_type ppl_PIP_Problem_swap (Prolog_term_ref *t_lhs*, Prolog_term_ref *t_rhs*)

Definition at line 2607 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.3.1.60 Prolog_foreign_return_type ppl_PIP_Tree_Node_artificials (Prolog_term_ref *t_tree_node*, Prolog_term_ref *t_artlist*)

Definition at line 3051 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_nil, Parma_Polyhedra_-Library::Interfaces::Prolog::artificial_parameter_term(), CATCH_ALL, and PPL_CHECK.

12.3.1.61 Prolog_foreign_return_type ppl_PIP_Tree_Node_constraints (Prolog_term_ref *t_pip*, Prolog_term_ref *t_cs*)

Definition at line 2987 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_nil, CATCH_ALL, Parma_Polyhedra_-Library::Interfaces::Prolog::constraint_term(), and PPL_CHECK.

12.3.1.62 Prolog_foreign_return_type ppl_PIP_Tree_Node_false_child (Prolog_term_ref *t_pip*, Prolog_term_ref *t_ptree*)

Definition at line 3109 of file ppl_prolog_common.cc.

References CATCH_ALL, PPL_CHECK, and PPL_WEAK_REGISTER.

12.3.1.63 Prolog_foreign_return_type ppl_PIP_Tree_Node_is_bottom (Prolog_term_ref *t_pip*)

Definition at line 3037 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.3.1.64 Prolog_foreign_return_type ppl_PIP_Tree_Node_is_decision (Prolog_term_ref *t_pip*)

Definition at line 3023 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.3.1.65 Prolog_foreign_return_type ppl_PIP_Tree_Node_is_solution (Prolog_term_ref *t_pip*)

Definition at line 3009 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.3.1.66 Prolog_foreign_return_type ppl_PIP_Tree_Node_OK (Prolog_term_ref *t_pip*)

Definition at line 3129 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.3.1.67 Prolog_foreign_return_type ppl_PIP_Tree_Node_parametric_values (Prolog_term_ref *t_pip*, Prolog_term_ref *t_var*, Prolog_term_ref *t_le*)

Definition at line 3073 of file ppl_prolog_common.cc.

References CATCH_ALL, Parma_Polyhedra_Library::Interfaces::Prolog::get_linear_expression(), PPL_-CHECK, and Parma_Polyhedra_Library::Interfaces::Prolog::term_to_Variable().

12.3.1.68 Prolog_foreign_return_type ppl_PIP_Tree_Node_true_child (Prolog_term_ref *t_pip*, Prolog_term_ref *t_ptree*)

Definition at line 3089 of file ppl_prolog_common.cc.

References CATCH_ALL, PPL_CHECK, and PPL_WEAK_REGISTER.

12.3.1.69 Prolog_foreign_return_type ppl_reset_deterministic_timeout ()

Definition at line 1968 of file ppl_prolog_common.cc.

References CATCH_ALL.

12.3.1.70 Prolog_foreign_return_type ppl_reset_timeout ()

Definition at line 1934 of file ppl_prolog_common.cc.

References CATCH_ALL.

12.3.1.71 Prolog_foreign_return_type ppl_restore_pre_PPL_rounding ()

Definition at line 1842 of file ppl_prolog_common.cc.

References CATCH_ALL.

12.3.1.72 Prolog_foreign_return_type ppl_set_deterministic_timeout (Prolog_term_ref *t_weight*)

Definition at line 1947 of file ppl_prolog_common.cc.

References CATCH_ALL.

12.3.1.73 Prolog_foreign_return_type ppl_set_irrational_precision (Prolog_term_ref *t_p*)

Definition at line 1860 of file ppl_prolog_common.cc.

References CATCH_ALL.

12.3.1.74 Prolog_foreign_return_type ppl_set_rounding_for_PPL ()

Definition at line 1833 of file ppl_prolog_common.cc.

References CATCH_ALL.

12.3.1.75 Prolog_foreign_return_type ppl_set_timeout (Prolog_term_ref *t_time*)

Definition at line 1912 of file ppl_prolog_common.cc.

References CATCH_ALL.

12.3.1.76 Prolog_foreign_return_type ppl_set_timeout_exception_atom (Prolog_term_ref *t_tea*)

Definition at line 1871 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_expected, Parma_Polyhedra_Library::Interfaces::Prolog::a_found, Parma_Polyhedra_Library::Interfaces::Prolog::a_ppl_invalid_argument, Parma_Polyhedra_Library::Interfaces::Prolog::a_where, CATCH_ALL, Parma_Polyhedra_Library::Interfaces::Prolog::Prolog_atom_term_from_string(), and Parma_Polyhedra_Library::Interfaces::Prolog::timeout_exception_atom.

12.3.1.77 Prolog_foreign_return_type ppl_timeout_exception_atom (Prolog_term_ref *t*)

Definition at line 1902 of file ppl_prolog_common.cc.

References CATCH_ALL, and Parma_Polyhedra_Library::Interfaces::Prolog::timeout_exception_atom.

12.3.1.78 Prolog_foreign_return_type ppl_version (Prolog_term_ref *t_v*)

Definition at line 1763 of file ppl_prolog_common.cc.

References CATCH_ALL.

12.3.1.79 Prolog_foreign_return_type ppl_version_beta (Prolog_term_ref *t_v*)

Definition at line 1754 of file ppl_prolog_common.cc.

References CATCH_ALL, and Parma_Polyhedra_Library::Interfaces::Prolog::unify_ulong().

12.3.1.80 Prolog_foreign_return_type ppl_version_major (Prolog_term_ref *t_v*)

Definition at line 1727 of file ppl_prolog_common.cc.

References CATCH_ALL, and Parma_Polyhedra_Library::Interfaces::Prolog::unify_ulong().

12.3.1.81 Prolog_foreign_return_type ppl_version_minor (Prolog_term_ref *t_v*)

Definition at line 1736 of file ppl_prolog_common.cc.

References CATCH_ALL, and Parma_Polyhedra_Library::Interfaces::Prolog::unify_ulong().

12.3.1.82 Prolog_foreign_return_type ppl_version_revision (Prolog_term_ref *t_v*)

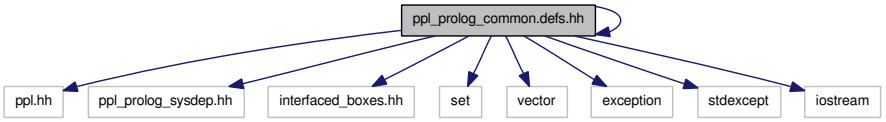
Definition at line 1745 of file ppl_prolog_common.cc.

References CATCH_ALL, and Parma_Polyhedra_Library::Interfaces::Prolog::unify_ulong().

12.4 ppl_prolog_common.defs.hh File Reference

```
#include "ppl.hh"
#include "ppl_prolog_sysdep.hh"
#include "interfaced_boxes.hh"
#include <set>
#include <vector>
#include <exception>
#include <stdexcept>
#include <iostream>
#include "ppl_prolog_common.inlines.hh"
```

Include dependency graph for ppl_prolog_common.defs.hh:



This graph shows which files directly or indirectly include this file:

Classes

- class Parma_Polyhedra_Library::Interfaces::Prolog::internal_exception
- class Parma_Polyhedra_Library::Interfaces::Prolog::Prolog_unsigned_out_of_range
- class Parma_Polyhedra_Library::Interfaces::Prolog::non_linear
- class Parma_Polyhedra_Library::Interfaces::Prolog::not_an_integer
- class Parma_Polyhedra_Library::Interfaces::Prolog::not_unsigned_integer
- class Parma_Polyhedra_Library::Interfaces::Prolog::not_a_boolean
- class Parma_Polyhedra_Library::Interfaces::Prolog::not_a_variable
- class Parma_Polyhedra_Library::Interfaces::Prolog::not_an_optimization_mode
- class Parma_Polyhedra_Library::Interfaces::Prolog::not_a_bounded_integer_type_width
- class Parma_Polyhedra_Library::Interfaces::Prolog::not_a_bounded_integer_type_representation
- class Parma_Polyhedra_Library::Interfaces::Prolog::not_a_bounded_integer_type_overflow
- class Parma_Polyhedra_Library::Interfaces::Prolog::not_a_complexity_class
- class Parma_Polyhedra_Library::Interfaces::Prolog::not_a_control_parameter_name
- class Parma_Polyhedra_Library::Interfaces::Prolog::not_a_control_parameter_value
- class Parma_Polyhedra_Library::Interfaces::Prolog::not_a_pip_problem_control_parameter_name
- class Parma_Polyhedra_Library::Interfaces::Prolog::not_a_pip_problem_control_parameter_value
- class Parma_Polyhedra_Library::Interfaces::Prolog::not_universe_or_empty
- class Parma_Polyhedra_Library::Interfaces::Prolog::not_a_relation
- class Parma_Polyhedra_Library::Interfaces::Prolog::not_a_nil_terminated_list
- class Parma_Polyhedra_Library::Interfaces::Prolog::PPL_integer_out_of_range
- class Parma_Polyhedra_Library::Interfaces::Prolog::ppl_handle_mismatch
- class Parma_Polyhedra_Library::Interfaces::Prolog::unknown_interface_error
- struct Parma_Polyhedra_Library::Interfaces::Prolog::Prolog_Interface_Atom
- class Parma_Polyhedra_Library::Interfaces::Prolog::timeout_exception
- class Parma_Polyhedra_Library::Interfaces::Prolog::deterministic_timeout_exception

Namespaces

- namespace Parma_Polyhedra_Library
- namespace Parma_Polyhedra_Library::Interfaces
- namespace Parma_Polyhedra_Library::Interfaces::Prolog

Defines

- #define PPL_NO_AUTOMATIC_INITIALIZATION
- #define PROLOG_TRACK_ALLOCATION 0
- #define NOISY_PROLOG_TRACK_ALLOCATION 0
- #define PPL_REGISTER(x)
- #define PPL_WEAK_REGISTER(x)
- #define PPL_UNREGISTER(x)
- #define PPL_CHECK(x)
- #define CATCH_ALL

Enumerations

- enum Parma_Polyhedra_Library::Interfaces::Prolog::Boundary_Kind { Parma_Polyhedra_Library::Interfaces::Prolog::LOWER_BOUNDARY, Parma_Polyhedra_Library::Interfaces::Prolog::UPPER_BOUNDARY }

Functions

- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const Prolog_unsigned_out_of_range &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_unsigned_integer &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_boolean &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const non_linear &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_variable &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_an_integer &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const ppl_handle_mismatch &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_an_optimization_mode &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_complexity_class &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_bounded_integer_type_width &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_bounded_integer_type_representation &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_bounded_integer_type_overflow &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_control_parameter_name &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_control_parameter_value &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_pip_problem_control_parameter_name &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_pip_problem_control_parameter_value &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_universe_or_empty &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_relation &e)

- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const not_a_nil_-terminated_list &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const PPL_integer_out_of_-range &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const unknown_interface_-error &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const std::overflow_error &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const std::domain_error &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const std::length_error &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const std::invalid_argument &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const std::logic_error &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const std::bad_alloc &)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const std::exception &e)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception ()
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const timeout_exception &)
- void Parma_Polyhedra_Library::Interfaces::Prolog::handle_exception (const deterministic_-timeout_exception &)
- Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::variable_term (dimension_type varid)
- template<typename U >
  U Parma_Polyhedra_Library::Interfaces::Prolog::term_to_unsigned (Prolog_term_ref t, const char *where)
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_to_boolean (Prolog_term_ref t, const char *where)
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_to_universe_or_empty (Prolog_-term_ref t, const char *where)
- Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::interval_term (const Parma_-Polyhedra_Library::Rational_Box::interval_type &i)
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_to_complexity_class (Prolog_-term_ref t, const char *where)
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_to_bounded_integer_type_width (Prolog_term_ref t, const char *where)
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_to_bounded_integer_type_-representation (Prolog_term_ref t, const char *where)
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_to_bounded_integer_type_-overflow (Prolog_term_ref t, const char *where)
- template<typename T >
  T * Parma_Polyhedra_Library::Interfaces::Prolog::term_to_handle (Prolog_term_ref t, const char *where)
- bool Parma_Polyhedra_Library::Interfaces::Prolog::term_to_boundary (Prolog_term_ref t_b, Boundary_Kind kind, bool &finite, bool &closed, Parma_Polyhedra_Library::Coefficient &n, Parma_Polyhedra_Library::Coefficient &d)
- Parma_Polyhedra_Library::Relation_Symbol Parma_Polyhedra_Library::Interfaces::Prolog::term_-to_relation_symbol (Prolog_term_ref t_r, const char *where)
- Parma_Polyhedra_Library::Coefficient Parma_Polyhedra_Library::Interfaces::Prolog::integer_-term_to_Coefficient (Prolog_term_ref t)
- Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::Coefficient_to_integer_term (const Parma_Polyhedra_Library::Coefficient &n)
- bool Parma_Polyhedra_Library::Interfaces::Prolog::unify_long (Prolog_term_ref t, long l)

- bool Parma_Polyhedra_Library::Interfaces::Prolog::unify_ulong (Prolog_term_ref t, unsigned long l)
- Parma_Polyhedra_Library::Linear_Expression Parma_Polyhedra_Library::Interfaces::Prolog::build_linear_expression (Prolog_term_ref t, const char *where)
- Parma_Polyhedra_Library::Constraint Parma_Polyhedra_Library::Interfaces::Prolog::build_constraint (Prolog_term_ref t, const char *where)
- Parma_Polyhedra_Library::Congruence Parma_Polyhedra_Library::Interfaces::Prolog::build_congruence (Prolog_term_ref t, const char *where)
- Parma_Polyhedra_Library::Generator Parma_Polyhedra_Library::Interfaces::Prolog::build_generator (Prolog_term_ref t, const char *where)
- Parma_Polyhedra_Library::Grid_Generator Parma_Polyhedra_Library::Interfaces::Prolog::build_grid_generator (Prolog_term_ref t, const char *where)
- Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::get_linear_expression (const Parma_Polyhedra_Library::Linear_Expression &le)
- Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::constraint_term (const Parma_Polyhedra_Library::Constraint &c)
- Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::congruence_term (const Parma_Polyhedra_Library::Congruence &cg)
- Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::generator_term (const Parma_Polyhedra_Library::Generator &g)
- Prolog_term_ref Parma_Polyhedra_Library::Interfaces::Prolog::grid_generator_term (const Parma_Polyhedra_Library::Grid_Generator &g)
- Parma_Polyhedra_Library::Variable Parma_Polyhedra_Library::Interfaces::Prolog::term_to_Variable (Prolog_term_ref t, const char *where)
- Parma_Polyhedra_Library::Coefficient Parma_Polyhedra_Library::Interfaces::Prolog::term_to_Coefficient (Prolog_term_ref t, const char *where)
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_to_optimization_mode (Prolog_term_ref t, const char *where)
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_to_control_parameter_name (Prolog_term_ref t, const char *where)
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_to_control_parameter_value (Prolog_term_ref t, const char *where)
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_to_pip_problem_control_parameter_name (Prolog_term_ref t, const char *where)
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::term_to_pip_problem_control_parameter_value (Prolog_term_ref t, const char *where)
- void Parma_Polyhedra_Library::Interfaces::Prolog::check_nil_terminating (Prolog_term_ref t, const char *where)
- Prolog_foreign_return_type ppl_version_major (Prolog_term_ref t_v)
- Prolog_foreign_return_type ppl_version_minor (Prolog_term_ref t_v)
- Prolog_foreign_return_type ppl_version_revision (Prolog_term_ref t_v)
- Prolog_foreign_return_type ppl_version_beta (Prolog_term_ref t_v)
- Prolog_foreign_return_type ppl_version (Prolog_term_ref t_v)
- Prolog_foreign_return_type ppl_banner (Prolog_term_ref t_b)
- Prolog_foreign_return_type ppl_max_space_dimension (Prolog_term_ref t_msd)
- Prolog_foreign_return_type ppl_initialize ()
- Prolog_foreign_return_type ppl_finalize ()
- Prolog_foreign_return_type ppl_set_rounding_for_PPL ()
- Prolog_foreign_return_type ppl_restore_pre_PPL_rounding ()
- Prolog_foreign_return_type ppl_irrational_precision (Prolog_term_ref t_p)
- Prolog_foreign_return_type ppl_set_irrational_precision (Prolog_term_ref t_p)

- Prolog_foreign_return_type ppl_set_timeout_exception_atom (Prolog_term_ref t_tea)
- Prolog_foreign_return_type ppl_timeout_exception_atom (Prolog_term_ref t)
- Prolog_foreign_return_type ppl_set_timeout (Prolog_term_ref t_time)
- Prolog_foreign_return_type ppl_reset_timeout ()
- Prolog_foreign_return_type ppl_set_deterministic_timeout (Prolog_term_ref t_weight)
- Prolog_foreign_return_type ppl_reset_deterministic_timeout ()
- Prolog_foreign_return_type ppl_Coefficient_bits (Prolog_term_ref t_bits)
- Prolog_foreign_return_type ppl_Coefficient_is_bounded ()
- Prolog_foreign_return_type ppl_Coefficient_min (Prolog_term_ref t_min)
- Prolog_foreign_return_type ppl_Coefficient_max (Prolog_term_ref t_max)
- Prolog_foreign_return_type ppl_new_MIP_Problem_from_space_dimension (Prolog_term_ref t_nd, Prolog_term_ref t_mip)
- Prolog_foreign_return_type ppl_new_MIP_Problem (Prolog_term_ref t_nd, Prolog_term_ref t_clist, Prolog_term_ref t_le_expr, Prolog_term_ref t_opt, Prolog_term_ref t_mip)
- Prolog_foreign_return_type ppl_new_MIP_Problem_from_MIP_Problem (Prolog_term_ref t_mip_source, Prolog_term_ref t_mip)
- Prolog_foreign_return_type ppl_MIP_Problem_swap (Prolog_term_ref t_lhs, Prolog_term_ref t_rhs)
- Prolog_foreign_return_type ppl_delete_MIP_Problem (Prolog_term_ref t_mip)
- Prolog_foreign_return_type ppl_MIP_Problem_space_dimension (Prolog_term_ref t_mip, Prolog_term_ref t_sd)
- Prolog_foreign_return_type ppl_MIP_Problem_integer_space_dimensions (Prolog_term_ref t_mip, Prolog_term_ref t_vlist)
- Prolog_foreign_return_type ppl_MIP_Problem_constraints (Prolog_term_ref t_mip, Prolog_term_ref t_clist)
- Prolog_foreign_return_type ppl_MIP_Problem_objective_function (Prolog_term_ref t_mip, Prolog_term_ref t_le_expr)
- Prolog_foreign_return_type ppl_MIP_Problem_optimization_mode (Prolog_term_ref t_mip, Prolog_term_ref t_opt)
- Prolog_foreign_return_type ppl_MIP_Problem_get_control_parameter (Prolog_term_ref t_mip, Prolog_term_ref t_cp_name, Prolog_term_ref t_cp_value)
- Prolog_foreign_return_type ppl_MIP_Problem_clear (Prolog_term_ref t_mip)
- Prolog_foreign_return_type ppl_MIP_Problem_add_space_dimensions_and_embed (Prolog_term_ref t_mip, Prolog_term_ref t_nnd)
- Prolog_foreign_return_type ppl_MIP_Problem_add_to_integer_space_dimensions (Prolog_term_ref t_mip, Prolog_term_ref t_vlist)
- Prolog_foreign_return_type ppl_MIP_Problem_add_constraint (Prolog_term_ref t_mip, Prolog_term_ref t_c)
- Prolog_foreign_return_type ppl_MIP_Problem_add_constraints (Prolog_term_ref t_mip, Prolog_term_ref t_clist)
- Prolog_foreign_return_type ppl_MIP_Problem_set_objective_function (Prolog_term_ref t_mip, Prolog_term_ref t_le_expr)
- Prolog_foreign_return_type ppl_MIP_Problem_set_optimization_mode (Prolog_term_ref t_mip, Prolog_term_ref t_opt)
- Prolog_foreign_return_type ppl_MIP_Problem_set_control_parameter (Prolog_term_ref t_mip, Prolog_term_ref t_cp_value)
- Prolog_foreign_return_type ppl_MIP_Problem_is_satisfiable (Prolog_term_ref t_mip)
- Prolog_foreign_return_type ppl_MIP_Problem_solve (Prolog_term_ref t_mip, Prolog_term_ref t_status)
- Prolog_foreign_return_type ppl_MIP_Problem_feasible_point (Prolog_term_ref t_mip, Prolog_term_ref t_g)

- Prolog_foreign_return_type ppl_MIP_Problem_optimizing_point (Prolog_term_ref t_mip, Prolog_term_ref t_g)
- Prolog_foreign_return_type ppl_MIP_Problem_optimal_value (Prolog_term_ref t_mip, Prolog_term_ref t_n, Prolog_term_ref t_d)
- Prolog_foreign_return_type ppl_MIP_Problem_evaluate_objective_function (Prolog_term_ref t_mip, Prolog_term_ref t_g, Prolog_term_ref t_n, Prolog_term_ref t_d)
- Prolog_foreign_return_type ppl_MIP_Problem_OK (Prolog_term_ref t_mip)
- Prolog_foreign_return_type ppl_MIP_Problem_ascii_dump (Prolog_term_ref t_mip)
- Prolog_foreign_return_type ppl_new_PIP_Problem_from_space_dimension (Prolog_term_ref t_nd, Prolog_term_ref t_pip)
- Prolog_foreign_return_type ppl_new_PIP_Problem_from_PIP_Problem (Prolog_term_ref t_pip_source, Prolog_term_ref t_pip)
- Prolog_foreign_return_type ppl_new_PIP_Problem (Prolog_term_ref t_dim, Prolog_term_ref t_cs, Prolog_term_ref t_params, Prolog_term_ref t_pip)
- Prolog_foreign_return_type ppl_PIP_Problem_swap (Prolog_term_ref t_lhs, Prolog_term_ref t_rhs)
- Prolog_foreign_return_type ppl_delete_PIP_Problem (Prolog_term_ref t_pip)
- Prolog_foreign_return_type ppl_PIP_Problem_space_dimension (Prolog_term_ref t_pip, Prolog_term_ref t_sd)
- Prolog_foreign_return_type ppl_PIP_Problem_parameter_space_dimensions (Prolog_term_ref t_pip, Prolog_term_ref t_vlist)
- Prolog_foreign_return_type ppl_PIP_Problem_constraints (Prolog_term_ref t_pip, Prolog_term_ref t_cs)
- Prolog_foreign_return_type ppl_PIP_Problem_get_control_parameter (Prolog_term_ref t_pip, Prolog_term_ref t_cp_name, Prolog_term_ref t_cp_value)
- Prolog_foreign_return_type ppl_PIP_Problem_clear (Prolog_term_ref t_pip)
- Prolog_foreign_return_type ppl_PIP_Problem_add_space_dimensions_and_embed (Prolog_term_ref t_pip, Prolog_term_ref t_num_vars, Prolog_term_ref t_num_params)
- Prolog_foreign_return_type ppl_PIP_Problem_add_to_parameter_space_dimensions (Prolog_term_ref t_pip, Prolog_term_ref t_vlist)
- Prolog_foreign_return_type ppl_PIP_Problem_add_constraint (Prolog_term_ref t_pip, Prolog_term_ref t_c)
- Prolog_foreign_return_type ppl_PIP_Problem_add_constraints (Prolog_term_ref t_pip, Prolog_term_ref t_clist)
- Prolog_foreign_return_type ppl_PIP_Problem_set_control_parameter (Prolog_term_ref t_pip, Prolog_term_ref t_cp_value)
- Prolog_foreign_return_type ppl_PIP_Problem_is_satisfiable (Prolog_term_ref t_pip)
- Prolog_foreign_return_type ppl_PIP_Problem_solve (Prolog_term_ref t_pip, Prolog_term_ref t_status)
- Prolog_foreign_return_type ppl_PIP_Problem_solution (Prolog_term_ref t_pip, Prolog_term_ref t_pip_tree)
- Prolog_foreign_return_type ppl_PIP_Problem_optimizing_solution (Prolog_term_ref t_pip, Prolog_term_ref t_pip_tree)
- Prolog_foreign_return_type ppl_PIP_Problem_has_big_parameter_dimension (Prolog_term_ref t_pip, Prolog_term_ref t_d)
- Prolog_foreign_return_type ppl_PIP_Problem_set_big_parameter_dimension (Prolog_term_ref t_pip, Prolog_term_ref t_d)
- Prolog_foreign_return_type ppl_PIP_Problem_OK (Prolog_term_ref t_pip)
- Prolog_foreign_return_type ppl_PIP_Problem_ascii_dump (Prolog_term_ref t_pip)
- Prolog_foreign_return_type ppl_PIP_Tree_Node_constraints (Prolog_term_ref t_tree_node, Prolog_term_ref t_clist)
- Prolog_foreign_return_type ppl_PIP_Tree_Node_is_solution (Prolog_term_ref t_tree_node)

- Prolog_foreign_return_type ppl_PIP_Tree_Node_is_decision (Prolog_term_ref t_tree_node)
- Prolog_foreign_return_type ppl_PIP_Tree_Node_is_bottom (Prolog_term_ref t_tree_node)
- Prolog_foreign_return_type ppl_PIP_Tree_Node_artificials (Prolog_term_ref t_tree_node, Prolog_term_ref t_artlist)
- Prolog_foreign_return_type ppl_PIP_Tree_Node_OK (Prolog_term_ref t_pip_tree)
- Prolog_foreign_return_type ppl_PIP_Tree_Node_parametric_values (Prolog_term_ref t_pip_sol, Prolog_term_ref t_var, Prolog_term_ref t_pvalue_list)
- Prolog_foreign_return_type ppl_PIP_Tree_Node_true_child (Prolog_term_ref t_pip_dec, Prolog_term_ref t_pip_tree)
- Prolog_foreign_return_type ppl_PIP_Tree_Node_false_child (Prolog_term_ref t_pip_dec, Prolog_term_ref t_pip_tree)

Variables

- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_nil
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_dollar_VAR
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_plus
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_minus
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_asterisk
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_slash
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_less_than
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_equal_less_than
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_equal
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_greater_than_equal
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_greater_than
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_is_congruent_to
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_modulo
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_line
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_ray
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_point
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_closure_point
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_grid_line
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_parameter
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_grid_point
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_is_disjoint
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_strictly_intersects
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_is_included
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_saturates
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_subsumes
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_c
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_empty
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_o
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_i
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_minf
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_pinf
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_polynomial
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_simplex
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_any
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_bits_8
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_bits_16

- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_bits_32
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_bits_64
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_bits_128
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_unsigned
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_signed_2_complement
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_overflow_wraps
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_overflow_undefined
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_overflow_impossible
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_true
- Prolog_atom Parma_Polyhedra_Library::Interfaces::Prolog::a_false
- const Prolog_Interface_Atom Parma_Polyhedra_Library::Interfaces::Prolog::prolog_interface_atoms [ ]

12.4.1 Define Documentation

12.4.1.1 #define CATCH_ALL

Definition at line 539 of file ppl_prolog_common.defs.hh.

Referenced by ppl_banner(), ppl_Coefficient_bits(), ppl_Coefficient_is_bounded(), ppl_Coefficient_max(), ppl_Coefficient_min(), ppl_delete_MIP_Problem(), ppl_delete_PIP_Problem(), ppl_finalize(), ppl_initialize(), ppl_irrational_precision(), ppl_max_space_dimension(), 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_ascii_dump(), ppl_MIP_Problem_clear(), ppl_MIP_Problem_constraints(), ppl_MIP_Problem_evaluate_objective_function(), 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_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_control_parameter(), ppl_MIP_Problem_set_objective_function(), ppl_MIP_Problem_set_optimization_mode(), ppl_MIP_Problem_solve(), ppl_MIP_Problem_space_dimension(), ppl_MIP_Problem_swap(), ppl_new_MIP_Problem(), ppl_new_MIP_Problem_from_MIP_Problem(), ppl_new_MIP_Problem_from_space_dimension(), ppl_new_PIP_Problem(), 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_ascii_dump(), ppl_PIP_Problem_clear(), ppl_PIP_Problem_constraints(), ppl_PIP_Problem_get_control_parameter(), ppl_PIP_Problem_has_big_parameter_dimension(), ppl_PIP_Problem_is_satisfiable(), ppl_PIP_Problem_OK(), ppl_PIP_Problem_optimizing_solution(), ppl_PIP_Problem_parameter_space_dimensions(), ppl_PIP_Problem_set_big_parameter_dimension(), ppl_PIP_Problem_set_control_parameter(), ppl_PIP_Problem_solution(), ppl_PIP_Problem_solve(), ppl_PIP_Problem_space_dimension(), ppl_PIP_Problem_swap(), ppl_PIP_Tree_Node_artificials(), ppl_PIP_Tree_Node_constraints(), ppl_PIP_Tree_Node_false_child(), ppl_PIP_Tree_Node_is_bottom(), ppl_PIP_Tree_Node_is_decision(), ppl_PIP_Tree_Node_is_solution(), ppl_PIP_Tree_Node_OK(), ppl_PIP_Tree_Node_parametric_values(), ppl_PIP_Tree_Node_true_child(), ppl_reset_deterministic_timeout(), ppl_reset_timeout(), ppl_restore_pre_PPL_rounding(), ppl_set_deterministic_timeout(), ppl_set_irrational_precision(), ppl_set_rounding_for_PPL(), ppl_set_timeout(), ppl_set_timeout_exception_atom(), ppl_timeout_exception_atom(), ppl_version(), ppl_version_beta(), ppl_version_major(), ppl_version_minor(), and ppl_version_revision().

12.4.1.2 #define NOISY_PROLOG_TRACK_ALLOCATION 0

Definition at line 44 of file ppl_prolog_common.defs.hh.

12.4.1.3 #define PPL_CHECK(x)

Definition at line 131 of file ppl_prolog_common.defs.hh.

Referenced by 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_ascii_dump(), ppl_MIP_Problem_clear(), ppl_MIP_Problem_constraints(), ppl_MIP_Problem_evaluate_objective_function(), 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_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_control_parameter(), ppl_MIP_Problem_set_objective_function(), ppl_MIP_Problem_set_optimization_mode(), ppl_MIP_Problem_solve(), ppl_MIP_Problem_space_dimension(), ppl_MIP_Problem_swap(), ppl_new_MIP_Problem_from_MIP_Problem(), ppl_new_PIP_Problem_from_PIP_Problem(), 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_ascii_dump(), ppl_PIP_Problem_clear(), ppl_PIP_Problem_constraints(), ppl_PIP_Problem_get_control_parameter(), ppl_PIP_Problem_has_big_parameter_dimension(), ppl_PIP_Problem_is_satisfiable(), ppl_PIP_Problem_OK(), ppl_PIP_Problem_optimizing_solution(), ppl_PIP_Problem_parameter_space_dimensions(), ppl_PIP_Problem_set_big_parameter_dimension(), ppl_PIP_Problem_set_control_parameter(), ppl_PIP_Problem_solution(), ppl_PIP_Problem_solve(), ppl_PIP_Problem_space_dimension(), ppl_PIP_Problem_swap(), ppl_PIP_Tree_Node_artificials(), ppl_PIP_Tree_Node_constraints(), ppl_PIP_Tree_Node_false_child(), ppl_PIP_Tree_Node_is_bottom(), ppl_PIP_Tree_Node_is_decision(), ppl_PIP_Tree_Node_is_solution(), ppl_PIP_Tree_Node_OK(), ppl_PIP_Tree_Node_parametric_values(), and ppl_PIP_Tree_Node_true_child().

12.4.1.4 #define PPL_NO_AUTOMATIC_INITIALIZATION

Definition at line 27 of file ppl_prolog_common.defs.hh.

12.4.1.5 #define PPL_REGISTER(x)

Definition at line 128 of file ppl_prolog_common.defs.hh.

Referenced by ppl_new_MIP_Problem(), ppl_new_MIP_Problem_from_MIP_Problem(), ppl_new_MIP_Problem_from_space_dimension(), ppl_new_PIP_Problem(), ppl_new_PIP_Problem_from_PIP_Problem(), and ppl_new_PIP_Problem_from_space_dimension().

12.4.1.6 #define PPL_UNREGISTER(x)

Definition at line 130 of file ppl_prolog_common.defs.hh.

Referenced by ppl_delete_MIP_Problem(), and ppl_delete_PIP_Problem().

12.4.1.7 #define PPL_WEAK_REGISTER(x)

Definition at line 129 of file ppl_prolog_common.defs.hh.

Referenced by ppl_PIP_Problem_optimizing_solution(), ppl_PIP_Problem_solution(), ppl_PIP_Tree_-Node_false_child(), and ppl_PIP_Tree_Node_true_child().

12.4.1.8 #define PROLOG_TRACK_ALLOCATION 0

Definition at line 41 of file ppl_prolog_common.defs.hh.

12.4.2 Function Documentation

12.4.2.1 Prolog_foreign_return_type ppl_banner (Prolog_term_ref *t_b*)

Definition at line 1774 of file ppl_prolog_common.cc.

References CATCH_ALL.

12.4.2.2 Prolog_foreign_return_type ppl_Coefficient_bits (Prolog_term_ref *t_bits*)

Definition at line 1981 of file ppl_prolog_common.cc.

References CATCH_ALL, and Parma_Polyhedra_Library::Interfaces::Prolog::unify_ulong().

12.4.2.3 Prolog_foreign_return_type ppl_Coefficient_is_bounded ()

Definition at line 1990 of file ppl_prolog_common.cc.

References CATCH_ALL.

12.4.2.4 Prolog_foreign_return_type ppl_Coefficient_max (Prolog_term_ref *t_max*)

Definition at line 2014 of file ppl_prolog_common.cc.

References CATCH_ALL.

12.4.2.5 Prolog_foreign_return_type ppl_Coefficient_min (Prolog_term_ref *t_min*)

Definition at line 1999 of file ppl_prolog_common.cc.

References CATCH_ALL.

12.4.2.6 Prolog_foreign_return_type ppl_delete_MIP_Problem (Prolog_term_ref *t_mip*)

Definition at line 2120 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_UNREGISTER.

12.4.2.7 Prolog_foreign_return_type ppl_delete_PIP_Problem (Prolog_term_ref *t_pip*)

Definition at line 2621 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_UNREGISTER.

12.4.2.8 Prolog_foreign_return_type ppl_finalize ()

Definition at line 1814 of file ppl_prolog_common.cc.

References CATCH_ALL, and Parma_Polyhedra_Library::Interfaces::Prolog::Prolog_interface_-initialized.

12.4.2.9 Prolog_foreign_return_type ppl_initialize ()

Definition at line 1794 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_out_of_memory, Parma_-Polyhedra_Library::Interfaces::Prolog::a_time_out, CATCH_ALL, Parma_-Polyhedra_Library::Interfaces::Prolog::out_of_memory_exception_atom, Parma_-Polyhedra_Library::Interfaces::Prolog::Prolog_Interface_Atom::p_atom, Parma_-Polyhedra_Library::Interfaces::Prolog::prolog_interface_atoms, Parma_Polyhedra_-Library::Interfaces::Prolog::Prolog_interface_initialized, and Parma_Polyhedra_-Library::Interfaces::Prolog::timeout_exception_atom.

12.4.2.10 Prolog_foreign_return_type ppl_irrational_precision (Prolog_term_ref *t_p*)

Definition at line 1851 of file ppl_prolog_common.cc.

References CATCH_ALL, and Parma_Polyhedra_Library::Interfaces::Prolog::unify_ulong().

12.4.2.11 Prolog_foreign_return_type ppl_max_space_dimension (Prolog_term_ref *t_msd*)

Definition at line 1785 of file ppl_prolog_common.cc.

References CATCH_ALL, Parma_Polyhedra_Library::Interfaces::Prolog::max_representable_-dimension(), and Parma_Polyhedra_Library::Interfaces::Prolog::unify_ulong().

12.4.2.12 Prolog_foreign_return_type ppl_MIP_Problem_add_constraint (Prolog_term_ref *t_mip*, Prolog_term_ref *t_c*)

Definition at line 2273 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::build_constraint(), CATCH_ALL, and PPL_-CHECK.

12.4.2.13 Prolog_foreign_return_type ppl_MIP_Problem_add_constraints (Prolog_term_ref *t_mip*, Prolog_term_ref *t_clist*)

Definition at line 2285 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::build_constraint(), CATCH_ALL, Parma_-Polyhedra_Library::Interfaces::Prolog::check_nil_terminating(), and PPL_CHECK.

12.4.2.14 Prolog_foreign_return_type ppl_MIP_Problem_add_space_dimensions_and_embed (Prolog_term_ref *t_mip*, Prolog_term_ref *t_nnd*)

Definition at line 2234 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.4.2.15 Prolog_foreign_return_type ppl_MIP_Problem_add_to_integer_space_dimensions (Prolog_term_ref *t_mip*, Prolog_term_ref *t_vlist*)

Definition at line 2248 of file ppl_prolog_common.cc.

References CATCH_ALL, Parma_Polyhedra_Library::Interfaces::Prolog::check_nil_terminating(), PPL_-CHECK, and Parma_Polyhedra_Library::Interfaces::Prolog::term_to_Variable().

12.4.2.16 Prolog_foreign_return_type ppl_MIP_Problem_ascii_dump (Prolog_term_ref *t_mip*)

Definition at line 2515 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.4.2.17 Prolog_foreign_return_type ppl_MIP_Problem_clear (Prolog_term_ref *t_mip*)

Definition at line 2221 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.4.2.18 Prolog_foreign_return_type ppl_MIP_Problem_constraints (Prolog_term_ref *t_mip*, Prolog_term_ref *t_clist*)

Definition at line 2166 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_nil, CATCH_ALL, Parma_Polyhedra_Library::Interfaces::Prolog::constraint_term(), and PPL_CHECK.

12.4.2.19 Prolog_foreign_return_type ppl_MIP_Problem_evaluate_objective_function (Prolog_term_ref *t_mip*, Prolog_term_ref *t_g*, Prolog_term_ref *t_n*, Prolog_term_ref *t_d*)

Definition at line 2484 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::build_generator(), CATCH_ALL, and PPL_CHECK.

12.4.2.20 Prolog_foreign_return_type ppl_MIP_Problem_feasible_point (Prolog_term_ref *t_mip*, Prolog_term_ref *t_g*)

Definition at line 2438 of file ppl_prolog_common.cc.

References CATCH_ALL, Parma_Polyhedra_Library::Interfaces::Prolog::generator_term(), and PPL_CHECK.

12.4.2.21 Prolog_foreign_return_type ppl_MIP_Problem_get_control_parameter (Prolog_term_ref *t_mip*, Prolog_term_ref *t_cp_name*, Prolog_term_ref *t_cp_value*)

Definition at line 2360 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_pricing, Parma_Polyhedra_Library::Interfaces::Prolog::a_pricing_steepest_edge_exact, Parma_Polyhedra_Library::Interfaces::Prolog::a_pricing_steepest_edge_float, Parma_Polyhedra_Library::Interfaces::Prolog::a_pricing_textbook, CATCH_ALL, PPL_CHECK, and Parma_Polyhedra_Library::Interfaces::Prolog::term_to_control_parameter_name().

12.4.2.22 Prolog_foreign_return_type ppl_MIP_Problem_integer_space_dimensions (Prolog_term_ref *t_mip*, Prolog_term_ref *t_vlist*)

Definition at line 2144 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_nil, CATCH_ALL, PPL_CHECK, and Parma_Polyhedra_Library::Interfaces::Prolog::variable_term().

12.4.2.23 Prolog_foreign_return_type ppl_MIP_Problem_is_satisfiable (Prolog_term_ref *t_mip*)

Definition at line 2397 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.4.2.24 Prolog_foreign_return_type ppl_MIP_Problem_objective_function (Prolog_term_ref *t_mip*, Prolog_term_ref *t_le_expr*)

Definition at line 2186 of file ppl_prolog_common.cc.

References CATCH_ALL, Parma_Polyhedra_Library::Interfaces::Prolog::get_linear_expression(), and PPL_CHECK.

12.4.2.25 Prolog_foreign_return_type ppl_MIP_Problem_OK (Prolog_term_ref *t_mip*)

Definition at line 2503 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.4.2.26 Prolog_foreign_return_type ppl_MIP_Problem_optimal_value (Prolog_term_ref *t_mip*, Prolog_term_ref *t_n*, Prolog_term_ref *t_d*)

Definition at line 2466 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.4.2.27 Prolog_foreign_return_type ppl_MIP_Problem_optimization_mode (Prolog_term_ref *t_mip*, Prolog_term_ref *t_opt*)

Definition at line 2203 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_max, Parma_Polyhedra_Library::Interfaces::Prolog::a_min, CATCH_ALL, and PPL_CHECK.

12.4.2.28 Prolog_foreign_return_type ppl_MIP_Problem_optimizing_point (Prolog_term_ref *t_mip*, Prolog_term_ref *t_g*)

Definition at line 2452 of file ppl_prolog_common.cc.

References CATCH_ALL, Parma_Polyhedra_Library::Interfaces::Prolog::generator_term(), and PPL_-CHECK.

12.4.2.29 Prolog_foreign_return_type ppl_MIP_Problem_set_control_parameter (Prolog_term_ref *t_mip*, Prolog_term_ref *t_cp_value*)

Definition at line 2338 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_pricing_steepest_edge_exact, Parma_-Polyhedra_Library::Interfaces::Prolog::a_pricing_steepest_edge_float, Parma_Polyhedra_-Library::Interfaces::Prolog::a_pricing_textbook, CATCH_ALL, PPL_CHECK, and Parma_Polyhedra_-Library::Interfaces::Prolog::term_to_control_parameter_value().

12.4.2.30 Prolog_foreign_return_type ppl_MIP_Problem_set_objective_function (Prolog_term_ref *t_mip*, Prolog_term_ref *t_le_expr*)

Definition at line 2309 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::build_linear_expression(), CATCH_ALL, and PPL_CHECK.

12.4.2.31 Prolog_foreign_return_type ppl_MIP_Problem_set_optimization_mode (Prolog_term_ref *t_mip*, Prolog_term_ref *t_opt*)

Definition at line 2322 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_max, CATCH_ALL, PPL_CHECK, and Parma_Polyhedra_Library::Interfaces::Prolog::term_to_optimization_mode().

12.4.2.32 Prolog_foreign_return_type ppl_MIP_Problem_solve (Prolog_term_ref *t_mip*, Prolog_term_ref *t_status*)

Definition at line 2409 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_optimized, Parma_Polyhedra_-Library::Interfaces::Prolog::a_unbounded, Parma_Polyhedra_Library::Interfaces::Prolog::a_unfeasible, CATCH_ALL, and PPL_CHECK.

12.4.2.33 Prolog_foreign_return_type ppl_MIP_Problem_space_dimension (Prolog_term_ref *t_mip*, Prolog_term_ref *t_sd*)

Definition at line 2132 of file ppl_prolog_common.cc.

References CATCH_ALL, PPL_CHECK, and Parma_Polyhedra_Library::Interfaces::Prolog::unify_-ulong().

12.4.2.34 Prolog_foreign_return_type ppl_MIP_Problem_swap (Prolog_term_ref *t_lhs*, Prolog_term_ref *t_rhs*)

Definition at line 2106 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.4.2.35 Prolog_foreign_return_type ppl_new_MIP_Problem (Prolog_term_ref *t_nd*, Prolog_term_ref *t_clist*, Prolog_term_ref *t_le_expr*, Prolog_term_ref *t_opt*, Prolog_term_ref *t_mip*)

Definition at line 2048 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_max, Parma_Polyhedra_-Library::Interfaces::Prolog::build_constraint(), Parma_Polyhedra_Library::Interfaces::Prolog::build_-linear_expression(), CATCH_ALL, Parma_Polyhedra_Library::Interfaces::Prolog::check_nil_-terminating(), PPL_REGISTER, and Parma_Polyhedra_Library::Interfaces::Prolog::term_to_-optimization_mode().

12.4.2.36 Prolog_foreign_return_type ppl_new_MIP_Problem_from_MIP_Problem (Prolog_term_ref *t_mip_source*, Prolog_term_ref *t_mip*)

Definition at line 2084 of file ppl_prolog_common.cc.

References CATCH_ALL, PPL_CHECK, and PPL_REGISTER.

12.4.2.37 Prolog_foreign_return_type ppl_new_MIP_Problem_from_space_dimension (Prolog_term_ref *t_nd*, Prolog_term_ref *t_mip*)

Definition at line 2030 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_REGISTER.

12.4.2.38 Prolog_foreign_return_type ppl_new_PIP_Problem (Prolog_term_ref *t_dim*, Prolog_term_ref *t_cs*, Prolog_term_ref *t_params*, Prolog_term_ref *t_pip*)

Definition at line 2546 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::build_constraint(), CATCH_ALL, Parma_-Polyhedra_Library::Interfaces::Prolog::check_nil_terminating(), PPL_REGISTER, and Parma_-Polyhedra_Library::Interfaces::Prolog::term_to_Variable().

12.4.2.39 Prolog_foreign_return_type ppl_new_PIP_Problem_from_PIP_Problem (Prolog_term_ref *t_pip_source*, Prolog_term_ref *t_pip*)

Definition at line 2585 of file ppl_prolog_common.cc.

References CATCH_ALL, PPL_CHECK, and PPL_REGISTER.

12.4.2.40 Prolog_foreign_return_type ppl_new_PIP_Problem_from_space_dimension (Prolog_term_ref *t_nd*, Prolog_term_ref *t_pip*)

Definition at line 2528 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_REGISTER.

12.4.2.41 Prolog_foreign_return_type ppl_PIP_Problem_add_constraint (Prolog_term_ref *t_pip*, Prolog_term_ref *t_c*)

Definition at line 2742 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::build_constraint(), CATCH_ALL, and PPL_-CHECK.

12.4.2.42 Prolog_foreign_return_type ppl_PIP_Problem_add_constraints (Prolog_term_ref *t_pip*, Prolog_term_ref *t_clist*)

Definition at line 2754 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::build_constraint(), CATCH_ALL, Parma_-Polyhedra_Library::Interfaces::Prolog::check_nil_terminating(), and PPL_CHECK.

12.4.2.43 Prolog_foreign_return_type ppl_PIP_Problem_add_space_dimensions_and_embed (Prolog_term_ref *t_pip*, Prolog_term_ref *t_num_vars*, Prolog_term_ref *t_num_params*)

Definition at line 2700 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.4.2.44 Prolog_foreign_return_type ppl_PIP_Problem_add_to_parameter_space_dimensions (Prolog_term_ref *t_pip*, Prolog_term_ref *t_vlist*)

Definition at line 2717 of file ppl_prolog_common.cc.

References CATCH_ALL, Parma_Polyhedra_Library::Interfaces::Prolog::check_nil_terminating(), PPL_-CHECK, and Parma_Polyhedra_Library::Interfaces::Prolog::term_to_Variable().

12.4.2.45 Prolog_foreign_return_type ppl_PIP_Problem_ascii_dump (Prolog_term_ref *t_pip*)

Definition at line 2975 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.4.2.46 Prolog_foreign_return_type ppl_PIP_Problem_clear (Prolog_term_ref *t_pip*)

Definition at line 2687 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.4.2.47 Prolog_foreign_return_type ppl_PIP_Problem_constraints (Prolog_term_ref *t_pip*, Prolog_term_ref *t_cs*)

Definition at line 2667 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_nil, CATCH_ALL, Parma_Polyhedra_-Library::Interfaces::Prolog::constraint_term(), and PPL_CHECK.

12.4.2.48 Prolog_foreign_return_type ppl_PIP_Problem_get_control_parameter (Prolog_term_ref *t_pip*, Prolog_term_ref *t_cp_name*, Prolog_term_ref *t_cp_value*)

Definition at line 2778 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_cutting_strategy, Parma_Polyhedra_-Library::Interfaces::Prolog::a_cutting_strategy_all, Parma_Polyhedra_Library::Interfaces::Prolog::a_-cutting_strategy_deepest, Parma_Polyhedra_Library::Interfaces::Prolog::a_cutting_strategy_-first, Parma_Polyhedra_Library::Interfaces::Prolog::a_pivot_row_strategy, Parma_-Polyhedra_Library::Interfaces::Prolog::a_pivot_row_strategy_first, Parma_Polyhedra_-Library::Interfaces::Prolog::a_pivot_row_strategy_max_column, CATCH_ALL, PPL_CHECK, and Parma_Polyhedra_Library::Interfaces::Prolog::term_to_pip_problem_control_parameter_name().

12.4.2.49 Prolog_foreign_return_type ppl_PIP_Problem_has_big_parameter_dimension (Prolog_term_ref *t_pip*, Prolog_term_ref *t_d*)

Definition at line 2859 of file ppl_prolog_common.cc.

References CATCH_ALL, PPL_CHECK, and Parma_Polyhedra_Library::Interfaces::Prolog::unify_-ulong().

12.4.2.50 Prolog_foreign_return_type ppl_PIP_Problem_is_satisfiable (Prolog_term_ref *t_pip*)

Definition at line 2889 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.4.2.51 Prolog_foreign_return_type ppl_PIP_Problem_OK (Prolog_term_ref *t_pip*)

Definition at line 2963 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.4.2.52 Prolog_foreign_return_type ppl_PIP_Problem_optimizing_solution (Prolog_term_ref *t_pip*, Prolog_term_ref *t_pip_tree*)

Definition at line 2945 of file ppl_prolog_common.cc.

References CATCH_ALL, PPL_CHECK, and PPL_WEAK_REGISTER.

12.4.2.53 Prolog_foreign_return_type ppl_PIP_Problem_parameter_space_dimensions (Prolog_term_ref *t_pip*, Prolog_term_ref *t_vlist*)

Definition at line 2645 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_nil, CATCH_ALL, PPL_CHECK, and Parma_Polyhedra_Library::Interfaces::Prolog::variable_term().

12.4.2.54 Prolog_foreign_return_type ppl_PIP_Problem_set_big_parameter_dimension (Prolog_term_ref *t_pip*, Prolog_term_ref *t_d*)

Definition at line 2875 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.4.2.55 Prolog_foreign_return_type ppl_PIP_Problem_set_control_parameter (Prolog_term_ref *t_pip*, Prolog_term_ref *t_cp_value*)

Definition at line 2833 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_cutting_strategy_all, Parma_Polyhedra_Library::Interfaces::Prolog::a_cutting_strategy_deepest, Parma_Polyhedra_Library::Interfaces::Prolog::a_cutting_strategy_first, Parma_Polyhedra_Library::Interfaces::Prolog::a_pivot_row_strategy_first, Parma_Polyhedra_Library::Interfaces::Prolog::a_pivot_row_strategy_max_column, CATCH_ALL, PPL_CHECK, and Parma_Polyhedra_Library::Interfaces::Prolog::term_to_pip_problem_control_parameter_value().

12.4.2.56 Prolog_foreign_return_type ppl_PIP_Problem_solution (Prolog_term_ref *t_pip*, Prolog_term_ref *t_pip_tree*)

Definition at line 2927 of file ppl_prolog_common.cc.

References CATCH_ALL, PPL_CHECK, and PPL_WEAK_REGISTER.

12.4.2.57 Prolog_foreign_return_type ppl_PIP_Problem_solve (Prolog_term_ref *t_pip*, Prolog_term_ref *t_status*)

Definition at line 2901 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_optimized, Parma_Polyhedra_Library::Interfaces::Prolog::a_unfeasible, CATCH_ALL, and PPL_CHECK.

12.4.2.58 Prolog_foreign_return_type ppl_PIP_Problem_space_dimension (Prolog_term_ref *t_pip*, Prolog_term_ref *t_sd*)

Definition at line 2633 of file ppl_prolog_common.cc.

References CATCH_ALL, PPL_CHECK, and Parma_Polyhedra_Library::Interfaces::Prolog::unify_ulong().

12.4.2.59 Prolog_foreign_return_type ppl_PIP_Problem_swap (Prolog_term_ref *t_lhs*, Prolog_term_ref *t_rhs*)

Definition at line 2607 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.4.2.60 Prolog_foreign_return_type ppl_PIP_Tree_Node_artificials (Prolog_term_ref *t_tree_node*, Prolog_term_ref *t_artlist*)

Definition at line 3051 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_nil, Parma_Polyhedra_Library::Interfaces::Prolog::artificial_parameter_term(), CATCH_ALL, and PPL_CHECK.

12.4.2.61 Prolog_foreign_return_type ppl_PIP_Tree_Node_constraints (Prolog_term_ref *t_tree_node*, Prolog_term_ref *t_clist*)

Definition at line 2987 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_nil, CATCH_ALL, Parma_Polyhedra_Library::Interfaces::Prolog::constraint_term(), and PPL_CHECK.

12.4.2.62 Prolog_foreign_return_type ppl_PIP_Tree_Node_false_child (Prolog_term_ref *t_pip_dec*, Prolog_term_ref *t_pip_tree*)

Definition at line 3109 of file ppl_prolog_common.cc.

References CATCH_ALL, PPL_CHECK, and PPL_WEAK_REGISTER.

12.4.2.63 Prolog_foreign_return_type ppl_PIP_Tree_Node_is_bottom (Prolog_term_ref *t_tree_node*)

Definition at line 3037 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.4.2.64 Prolog_foreign_return_type ppl_PIP_Tree_Node_is_decision (Prolog_term_ref *t_tree_node*)

Definition at line 3023 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.4.2.65 Prolog_foreign_return_type ppl_PIP_Tree_Node_is_solution (Prolog_term_ref *t_tree_node*)

Definition at line 3009 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.4.2.66 Prolog_foreign_return_type ppl_PIP_Tree_Node_OK (Prolog_term_ref *t_pip_tree*)

Definition at line 3129 of file ppl_prolog_common.cc.

References CATCH_ALL, and PPL_CHECK.

12.4.2.67 Prolog_foreign_return_type ppl_PIP_Tree_Node_parametric_values (Prolog_term_ref *t_pip_sol*, Prolog_term_ref *t_var*, Prolog_term_ref *t_pvalue_list*)

Definition at line 3073 of file ppl_prolog_common.cc.

References CATCH_ALL, Parma_Polyhedra_Library::Interfaces::Prolog::get_linear_expression(), PPL_-CHECK, and Parma_Polyhedra_Library::Interfaces::Prolog::term_to_Variable().

12.4.2.68 Prolog_foreign_return_type ppl_PIP_Tree_Node_true_child (Prolog_term_ref *t_pip_dec*, Prolog_term_ref *t_pip_tree*)

Definition at line 3089 of file ppl_prolog_common.cc.

References CATCH_ALL, PPL_CHECK, and PPL_WEAK_REGISTER.

12.4.2.69 Prolog_foreign_return_type ppl_reset_deterministic_timeout ()

Definition at line 1968 of file ppl_prolog_common.cc.

References CATCH_ALL.

12.4.2.70 Prolog_foreign_return_type ppl_reset_timeout ()

Definition at line 1934 of file ppl_prolog_common.cc.

References CATCH_ALL.

12.4.2.71 Prolog_foreign_return_type ppl_restore_pre_PPL_rounding ()

Definition at line 1842 of file ppl_prolog_common.cc.

References CATCH_ALL.

12.4.2.72 Prolog_foreign_return_type ppl_set_deterministic_timeout (Prolog_term_ref *t_weight*)

Definition at line 1947 of file ppl_prolog_common.cc.

References CATCH_ALL.

12.4.2.73 Prolog_foreign_return_type ppl_set_irrational_precision (Prolog_term_ref *t_p*)

Definition at line 1860 of file ppl_prolog_common.cc.

References CATCH_ALL.

12.4.2.74 Prolog_foreign_return_type ppl_set_rounding_for_PPL ()

Definition at line 1833 of file ppl_prolog_common.cc.

References CATCH_ALL.

12.4.2.75 Prolog_foreign_return_type ppl_set_timeout (Prolog_term_ref *t_time*)

Definition at line 1912 of file ppl_prolog_common.cc.

References CATCH_ALL.

12.4.2.76 Prolog_foreign_return_type ppl_set_timeout_exception_atom (Prolog_term_ref *t_tea*)

Definition at line 1871 of file ppl_prolog_common.cc.

References Parma_Polyhedra_Library::Interfaces::Prolog::a_expected, Parma_Polyhedra_Library::Interfaces::Prolog::a_found, Parma_Polyhedra_Library::Interfaces::Prolog::a_ppl_invalid_argument, Parma_Polyhedra_Library::Interfaces::Prolog::a_where, CATCH_ALL, Parma_Polyhedra_Library::Interfaces::Prolog::Prolog_atom_term_from_string(), and Parma_Polyhedra_Library::Interfaces::Prolog::timeout_exception_atom.

12.4.2.77 Prolog_foreign_return_type ppl_timeout_exception_atom (Prolog_term_ref *t*)

Definition at line 1902 of file ppl_prolog_common.cc.

References CATCH_ALL, and Parma_Polyhedra_Library::Interfaces::Prolog::timeout_exception_atom.

12.4.2.78 Prolog_foreign_return_type ppl_version (Prolog_term_ref *t_v*)

Definition at line 1763 of file ppl_prolog_common.cc.

References CATCH_ALL.

12.4.2.79 Prolog_foreign_return_type ppl_version_beta (Prolog_term_ref *t_v*)

Definition at line 1754 of file ppl_prolog_common.cc.

References CATCH_ALL, and Parma_Polyhedra_Library::Interfaces::Prolog::unify_ulong().

12.4.2.80 Prolog_foreign_return_type ppl_version_major (Prolog_term_ref *t_v*)

Definition at line 1727 of file ppl_prolog_common.cc.

References CATCH_ALL, and Parma_Polyhedra_Library::Interfaces::Prolog::unify_ulong().

12.4.2.81 Prolog_foreign_return_type ppl_version_minor (Prolog_term_ref *t_v*)

Definition at line 1736 of file ppl_prolog_common.cc.

References CATCH_ALL, and Parma_Polyhedra_Library::Interfaces::Prolog::unify_ulong().

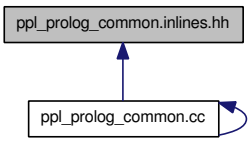
12.4.2.82 Prolog_foreign_return_type ppl_version_revision (Prolog_term_ref *t_v*)

Definition at line 1745 of file ppl_prolog_common.cc.

References CATCH_ALL, and Parma_Polyhedra_Library::Interfaces::Prolog::unify_ulong().

12.5 ppl_prolog_common.inlines.hh File Reference

This graph shows which files directly or indirectly include this file:



12.6 Prolog_interface.dox File Reference

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