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## **AIMMS Function Reference - Model Related Identifiers**

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## Model Related Identifiers

The following collection of predefined identifiers contains information regarding the model associated with the AIMMS project at hand. The identifiers listed here contain either the complete set of model identifiers or the set of all identifiers of a specific type.

- AllAssertions
- AllConstraints
- AllConventions
- AllDatabaseTables
- AllDefinedParameters
- AllDefinedSets
- AllFiles
- AllFunctions
- AllGMPEvents
- AllIdentifiers
- AllIndices
- AllIntegerVariables
- AllMacros
- AllMathematicalPrograms
- AllNonLinearConstraints
- AllParameters
- AllProcedures
- AllQuantities
- AllSections
- AllSets
- AllSolverSessionCompletionObjects
- AllSolverSessions
- AllUpdatableIdentifiers
- AllVariables
- AllVariablesConstraints

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## AllAssertions

The predefined set AllAssertions contains the names of all assertions within an AIMMS model.

```
SET:
  identifier : AllAssertions
  subset of  : AllIdentifiers
  index      : IndexAssertions ;
```

### Definition:

The contents of the set AllAssertions is the collection of all assertion names defined within a particular model.

### Updatability:

The contents of the set can only be modified by adding or deleting assertions in the **Model Explorer**.

### Remarks:

The set AllAssertions or subsets thereof are typically used in the ASSERT statement in an AIMMS model.

### See also:

The sets [AllIdentifiers](#). Assertions are discussed in Section [23.2](#) of the Language Reference.

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## AllConstraints

The predefined set AllConstraints contains the names of all constraints within an AIMMS model.

```
SET:
  identifier : AllConstraints
  subset of  : AllVariablesConstraints
  index      : IndexConstraints ;
```

### Definition:

The contents of the set AllConstraints is the collection of all *symbolic* constraint names defined within a particular model.

### Updatability:

The contents of the set can only be modified by adding or deleting constraints in the **Model Explorer**.

### Remarks:

The set AllConstraints or subsets thereof are typically used in the CONSTRAINTS attribute of MATHEMATICAL PROGRAMS declared within an AIMMS model.

### See also:

The sets [AllIdentifiers](#), [AllVariables](#). Constraints are discussed in Section [14.2](#), mathematical programs in Section [15.1](#) of the Language Reference.

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## AllConventions

The predefined set AllConventions contains the names of all conventions defined within an AIMMS model.

```
SET:
  identifier : AllConventions
  subset of  : AllIdentifiers
  index      : IndexConventions ;
```

### Definition:

The contents of the set AllConventions is the collection of all conventions defined within a particular model.

### Updatability:

The contents of the set can only be modified by adding or deleting conventions in the **Model Explorer**.

### Remarks:

Element parameters into the set AllConventions are typically used in the main model node to allow dynamic selection of the unit convention to which the model is subject.

### See also:

The sets [AllIdentifiers](#), [AllQuantities](#). Conventions are discussed in full detail in Section [30.8](#) of the Language Reference.

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## AllDatabaseTables

The predefined set AllDatabaseTables contains the names of all database tables declared within an AIMMS model.

```
SET:
  identifier : AllDatabaseTables
  subset of  : AllIdentifiers
  index      : IndexDatabaseTables ;
```

### Definition:

The contents of the set AllDatabaseTables is the collection of all database tables declared within a particular model.

### Updatability:

The contents of the set can only be modified by adding or deleting database tables in the **Model Explorer**.

### Remarks:

The set AllDatabaseTables is, in general, of little use within an AIMMS project.

### See also:

The sets [AllIdentifiers](#). Database tables are discussed in Section [25.1](#) of the Language Reference.

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## AllDefinedParameters

The predefined set AllDefinedParameters contains the names of all defined parameters within an AIMMS model.

```
SET:a
  identifier : AllDefinedParameters
  subset of  : AllParameters
  index      : IndexDefinedParameters ;
```

### Definition:

The contents of the set AllDefinedParameters is the collection of all parameters names with a non-empty DEFINITION attribute within a particular model.

### Updatability:

The contents of the set can only be modified by adding or deleting definitions of parameters declared in the **Model Explorer**.

### See also:

The sets [AllParameters](#). Parameters are discussed in Section [4.1](#) of the Language Reference.

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## AllDefinedSets

The predefined set AllDefinedSets contains the names of all defined sets within an AIMMS model.

```
SET:a
  identifier : AllDefinedSets
  subset of  : AllSets
  index      : IndexDefinedSets ;
```

### Definition:

The contents of the set AllDefinedSets is the collection of all set names with a non-empty DEFINITION attribute within a particular model.

### Updatability:

The contents of the set can only be modified by adding or deleting definitions of sets declared in the **Model Explorer**.

### See also:

The sets [AllSets](#). Sets are discussed in Section [3.2](#) of the Language Reference.

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## AllFiles

The predefined set AllFiles contains the names of all files declared within an AIMMS model.

```
SET:
  identifier : AllFiles
  subset of  : AllIdentifiers
  index      : IndexFiles ;
```

### Definition:

The contents of the set AllFiles is the collection of all file identifiers defined within a particular model.

### Updatability:

The contents of the set can only be modified by adding or deleting file identifiers in the **Model Explorer**.

### Remarks:

The set AllFiles is the range of the element parameter [CurrentFile](#).

### See also:

The element parameter [CurrentFile](#). Files are discussed in Section [29.1](#) of the Language Reference.

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## AllFunctions

The predefined set AllFunctions contains the names of all functions defined within an AIMMS model.

```
SET:
  identifier : AllFunctions
  subset of  : AllIdentifiers
  index      : IndexFunctions ;
```

### Definition:

The contents of the set AllFunctions is the collection of all function names defined within a particular model.

### Updatability:

The contents of the set can only be modified by adding or deleting functions in the **Model Explorer**.

### Remarks:

Elements of the set AllFunctions are typically used in conjunction with the APPLY statement, to allow data-driven evaluation of functional expressions.

### See also:

The sets [AllIdentifiers](#). Functions are discussed in Section [10.2](#) of the Language Reference, the APPLY statement in Section [10.3.1](#).

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## AllGMPEvents

The predefined set AllGMPEvents contains all GMP Events.

```
SET:
  identifier : AllGMPEvents
  subset of  : AllSolverSessionCompletionObjects
  index     : IndexGMPEvents ;
```

### Definition:

The set AllGMPEvents contains all GMP events used by the functions `GMP::Event::Create`, `GMP::Event::Delete`, `GMP::Event::Reset`, and `GMP::Event::Set`.

### See also:

The functions `GMP::Event::Create`, `GMP::Event::Delete`, `GMP::Event::Reset`, and `GMP::Event::Set`, and the predeclared identifier `AllSolverSessionCompletionObjects`.

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## AllIdentifiers

The predefined set AllIdentifiers contains the names of all identifiers declared within an AIMMS model.

```
SET:
  identifier : AllIdentifiers
  subset of  : AllSymbols
  index      : IndexIdentifiers, SecondIndexIdentifiers ;
```

### Definition:

The contents of the set AllIdentifiers is the collection of all identifier and section names declared within a particular model.

### Updatability:

The contents of the set can only be modified by adding or deleting identifiers in the **Model Explorer**.

### Remarks:

Subsets of AllIdentifiers are occasionally used in READ, WRITE or DISPLAY statements to indicate the set of identifiers to be read or written, as well as in data control statements such as EMPTY and CLEANUP. It also serves as the root set of the other (typed) identifier sets, which can be used throughout an AIMMS project.

### See also:

The set [AllSymbols](#). Data control statements are discussed in [Section 23.3](#), the READ and WRITE statements in [Section 24.2](#), and the DISPLAY statement in [Section 29.3](#) of the Language Reference. Working with the set AllIdentifiers is described in more detail in [Section 23.4](#).

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## AllIndices

The predefined set AllIndices contains the names of all indices defined within an AIMMS model.

```
SET:a
  identifier : AllIndices
  subset of  : AllIdentifiers
  index      : IndexIndices ;
```

### Definition:

The contents of the set AllIndices is the collection of all indices defined within a particular model.

### Updatability:

The contents of the set can only be modified by adding indices to or deleting indices from sets within the **Model Explorer**.

### See also:

The sets [AllSets](#), [AllIdentifiers](#). Sets and their corresponding indices are discussed in Section [3.2](#) of the Language Reference.

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## AllIntegerVariables

The predefined set AllIntegerVariables contains the names of all integer variables within an AIMMS model.

```
SET:
  identifier : AllIntegerVariables
  subset of  : AllVariables
  index      : IndexIntegerVariables ;
```

### Definition:

The contents of the set AllIntegerVariables is the collection of all *symbolic* variable names with as range a subset of Integers defined within a particular model.

### Updatability:

The contents of the set can only be modified by adding or deleting integer variables in the **Model Explorer**.

### See also:

The sets [AllVariables](#), [Integers](#).

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## AllMacros

The predefined set AllMacros contains the names of all macros within an AIMMS model.

```
SET:
  identifier : AllMacros
  subset of  : AllIdentifiers
  index      : IndexMacros ;
```

### Definition:

The contents of the set AllMacros is the collection of all *symbolic* macro names defined within a particular model.

### Updatability:

The contents of the set can only be modified by adding or deleting macros in the **Model Explorer**.

### Remarks:

The set AllMacros is of little use in typical AIMMS models.

### See also:

Macros are discussed in Section [6.4](#) of the Language Reference.

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## AllMathematicalPrograms

The predefined set AllMathematicalPrograms contains the names of all mathematical programs within an AIMMS model.

```
SET:
  identifier : AllMathematicalPrograms
  subset of  : AllIdentifiers
  index      : IndexMathematicalPrograms ;
```

### Definition:

The contents of the set AllMathematicalPrograms is the collection of all *symbolic* mathematical programs defined within a particular model.

### Updatability:

The contents of the set can only be modified by adding or deleting mathematical in the **Model Explorer**.

### Remarks:

The set AllMathematicalPrograms is of little use in typical AIMMS models.

### See also:

Mathematical programs in Section [15.1](#) of the Language Reference.

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## AllNonLinearConstraints

The predefined set AllNonLinearConstraints contains the names of all non-linear constraints within an AIMMS model.

```
SET:
  identifier : AllNonLinearConstraints
  subset of  : AllConstraints
  index      : IndexNonLinearConstraints ;
```

### Definition:

The contents of the set AllNonLinearConstraints is the collection of all *symbolic* non-linear constraint names defined within a particular model.

### Updatability:

The contents of the set can only be modified by adding or deleting non-linear constraints in the **Model Explorer**.

### See also:

The set [AllConstraints](#).

---

## AllParameters

The predefined set AllParameters contains the names of all parameters within an AIMMS model.

```
SET:
  identifier : AllParameters
  subset of  : AllIdentifiers
  index      : IndexParameters ;
```

### Definition:

The contents of the set AllParameters is the collection of all *symbolic* parameter names declared within a particular model.

### Updatability:

The contents of the set can only be modified by adding or deleting parameters in the **Model Explorer**.

### Remarks:

Subsets of AllParameters are occasionally used in READ, WRITE or DISPLAY statements to indicate the set of parameters to be read or written, as well as in data control statements such as EMPTY and CLEANUP.

### See also:

The sets [AllDefinedParameters](#), [AllIdentifiers](#). Data control statements are discussed in Section [23.3](#), the READ and WRITE statements in Section [24.2](#), and the DISPLAY statement in Section [29.3](#) of the Language Reference.

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## AllProcedures

The predefined set AllProcedures contains the names of all procedures defined within an AIMMS model.

```
SET:
  identifier : AllProcedures
  subset of  : AllIdentifiers
  index      : IndexProcedures ;
```

### Definition:

The contents of the set AllProcedures is the collection of all procedure names defined within a particular model.

### Updatability:

The contents of the set can only be modified by adding or deleting procedures in the **Model Explorer**.

### Remarks:

Elements of the set AllProcedures are typically used in conjunction with the APPLY statement, to allow data-driven procedural execution.

### See also:

The sets [AllIdentifiers](#). Procedures are discussed in [Section 10.1](#) of the Language Reference, the APPLY statement in [Section 10.3.1](#).

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## AllQuantities

The predefined set AllQuantities contains the names of all quantities defined within an AIMMS model.

```
SET:
  identifier : AllQuantities
  subset of  : AllIdentifiers
  index      : IndexQuantities ;
```

### Definition:

The contents of the set AllQuantities is the collection of all quantities defined within a particular model.

### Updatability:

The contents of the set can only be modified by adding or deleting quantities in the **Model Explorer**.

### Remarks:

The set AllQuantities is of little use in most AIMMS projects.

### See also:

The sets [AllIdentifiers](#), [AllConventions](#). Quantities are discussed in full detail in Section [30.2](#) of the Language Reference.

---

## AllSections

The predefined set AllSections contains the names of all sections within an AIMMS model.

```
SET:
  identifier : AllSections
  subset of  : AllIdentifiers
  index      : IndexSections ;
```

### Definition:

The contents of the set AllSections is the collection of all section names defined within a particular model tree.

### Updatability:

The contents of the set can only be modified by adding or deleting sections in the **Model Explorer**.

### Remarks:

Section names contained in AllSections are occasionally used in READ, WRITE or DISPLAY statements to indicate the set of identifiers to be read or written, as well as in data control statements such as EMPTY and CLEANUP.

### See also:

The set [AllIdentifiers](#). Model sections are discussed in [Section 4.2](#) of the User's Guide. Data control statements are discussed in [Section 23.3](#), the READ and WRITE statements in [Section 24.2](#), and the DISPLAY statement in [Section 29.3](#) of the Language Reference.

---

## AllSets

The predefined set AllSets contains the names of all sets within an AIMMS model.

```
SET:
  identifier : AllSets
  subset of  : AllIdentifiers
  index      : IndexSets ;
```

### Definition:

The contents of the set AllSets is the collection of all set names declared within a particular model.

### Updatability:

The contents of the set can only be modified by adding or deleting sets in the **Model Explorer**.

### Remarks:

Subsets of AllSets are occasionally used in READ, WRITE or DISPLAY statements to indicate the set of sets to be read or written, as well as in data control statements such as EMPTY, CLEANUP and CLEANUPDEPENDENTS.

### See also:

The sets [AllDefinedSets](#), [AllIdentifiers](#). Data control statements are discussed in Section [23.3](#), the READ and WRITE statements in Section [24.2](#), and the DISPLAY statement in Section [29.3](#) of the Language Reference.

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## AllSolverSessionCompletionObjects

The predefined set AllSolverSessionCompletionObjects is the root set containing both AllGMPEvents and AllSolverSessions.

```
SET:
  identifier : AllSolverSessionCompletionObjects
  index      : IndexSolverSessionCompletionObjects
  definition  : AllGMPEvents + AllSolverSessions ;
```

### Definition:

The set AllExecutionStatuses is the root set containing both AllGMPEvents and AllSolverSessions.

### See also:

The predeclared identifiers [AllGMPEvents](#) and [AllSolverSessions](#).

---

## AllSolverSessions

The predefined set `AllSolverSessions` contains the names of all solver sessions associated with generated mathematical programs in your model.

```
SET:
  identifier   : AllSolverSessions
  subset of   : AllSolverSessionCompletionObjects
  index       : IndexSolverSessions ;
```

### Definition:

The set `AllSolverSessions` contains the names of all solver sessions associated with generated mathematical programs in your model. Solver sessions are created through the `SOLVE` statement, and the functions `GMP::Instance::Solve` and `GMP::Instance::CreateSolverSession`.

### Updatability:

The contents of `AllSolverSessions` can only be modified programmatically through the `SOLVE` statement, and the functions `GMP::Instance::Solve`, `GMP::Instance::CreateSolverSession` and `GMP::Instance::DeleteSolverSession`.

### See also:

The functions `GMP::Instance::Solve`, `GMP::Instance::CreateSolverSession` and `GMP::Instance::DeleteSolverSession`, and the predeclared identifier `AllSolverSessionCompletionObjects`.

---

## AllUpdatableIdentifiers

The predefined set AllUpdatableIdentifiers contains the names of the identifiers that are, in principle, updatable.

```
SET:
  identifier   : AllUpdatableIdentifiers
  subset of   : AllIdentifiers
  index       : IndexUpdatableIdentifiers
  initial data : ( AllSets - AllDefinedSets ) +
                 ( AllParameters - AllDefinedParameters ) ;
```

### Definition:

The set AllUpdatableIdentifiers contains the names of the model identifiers that are, in principle, considered updatable by AIMMS.

### Updatability:

The contents of AllUpdatableIdentifiers can be modified programmatically from within an AIMMS model. The set cannot be updated from within the end-user interface.

### Remarks:

- The set AllUpdatableIdentifiers determines which identifiers are updatable *in principle*. Which identifiers in AllUpdatableIdentifiers can *actually* be modified within the graphical end-user interface is determined by the set **CurrentInputs**.
- By default, variables are considered not updatable by AIMMS. If you want to allow your end-users to update some or all variables from within the end-user interface, you can accomplish this by adding these variables to both the sets AllUpdatableIdentifiers and **CurrentInputs**.

### See also:

The sets **AllIdentifiers**, **CurrentInputs**.

---

## AllVariables

The predefined set AllVariables contains the names of all variables within an AIMMS model.

```
SET:
  identifier : AllVariables
  subset of  : AllVariablesConstraints
  index      : IndexVariables ;
```

### Definition:

The contents of the set AllVariables is the collection of all *symbolic* variable names defined within a particular model.

### Updatability:

The contents of the set can only be modified by adding or deleting variables in the **Model Explorer**.

### Remarks:

The set AllVariables or subsets thereof are typically used in the VARIABLES attribute of MATHEMATICAL PROGRAMS declared within an AIMMS model.

### See also:

The sets [AllIdentifiers](#), [AllConstraints](#). Variables are discussed in Section [14.1](#), mathematical programs in Section [15.1](#) of the Language Reference.

---

## AllVariablesConstraints

The predefined set AllVariablesConstraints contains the names of all variables and constraints within an AIMMS model.

```
SET:
  identifier : AllVariablesConstraints
  subset of  : AllIdentifiers
  index      : IndexVariablesConstraints ;
```

### Definition:

The contents of the set AllVariablesConstraints is the collection of all *symbolic* variable and constraint names defined within a particular model.

### Updatability:

The contents of the set can only be modified by adding or deleting variables and/or constraints in the **Model Explorer**.

### Remarks:

The set AllVariablesConstraints or subsets thereof are typically used in the index domain of parameters entered in the VIOLATION PENALTIES attribute of a MATHEMATICAL PROGRAM declared within an AIMMS model.

### See also:

The sets [AllIdentifiers](#), [AllVariables](#), [AllConstraints](#). The VIOLATION PENALTIES attribute of a mathematical programs is discussed in Section [15.4](#) of the Language Reference.