

GAMS Java API documentation
version 24.0

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Chapter 1

GAMS Java API

Version

24.0

1.1 Overview

GAMS Java API provides a Java programming interface to the General Algebraic Model System (GAMS). GAMS Java API objects allow a convenient way to exchange input data and model results with in-memory representation of data (GAMSDatabase), and to create and run GAMS models (GAMSJob) that can be customized by GAMS options (GAMSOPTIONS). Furthermore, they introduce a way to solve a sequence of closely related model instances in a more efficient way (GAMSModelInstance).

The underlying GAMS engine relies to some extent on file based communication (e.g. the listing file) and other unmanaged resources. The use of external resources in the Java environment requires special attention. Hence, some objects need to be properly disposed before the Java garbage collector does its job.

A GAMS program can include other source files (e.g. \$include), load data from GDX files (e.g. \$GDXIN or execute_load), and create PUT files. All these files can be specified with a (relative) path and therefore an anchor into the file system is required. The base object GAMSWorkspace manages the anchor to the file system.

This version of the GAMS Java API does not provide support for the following GAMS components: Acronyms, Domain checking, structured access to listing file, and proper support for solver options.

1.2 Getting started

A Java program that uses GAMS Java API requires at least Java SE 5 to compile and run.

For all platforms, assume GAMS system has been installed at [GAMSDIR] directory, called GAMS directory. The directory [GAMSDIR] denotes the path setting according to your GAMS installation on targeted platforms. For instance

- on Windows-based platforms with GAMS distribution 24.0 (32 bits) installed, [GAMSDIR] denotes

```
C:\GAMS\win32\24.0
```

- on Unix-based platforms with GAMS distribution 24.0 (64 bits) installed, [GAMSDIR] denotes

```
/usr/gams/gams24.0_linux_x64_64_sfx
```

All GAMS Java API classes are contained within one single jar file `GAMSJavaAPI.jar` with a namespace `com.gams.api`. The jar file is distributed with the current GAMS distribution and located at

- on Windows-based platforms:

```
[GAMSDIR]\apifiles\Java\api\GAMSJavaAPI.jar
```

- on Unix-based platforms:

```
[GAMSDIR]/apifiles/Java/api/GAMSJavaAPI.jar
```

1.2.1 Compiling a Program

To compile a Java program, one usually provide the following information to Java compiler:

- the directory(ies) containing all required Java classes files
- the name of the Java source file

It is optional to tell the compile where to place the generated classed file after compilation.

A Java program that uses GAMS Java API requires class files that are contained in `GAMSJavaAPI.jar` for compilation.

1.2.1.1 Compiling a Program from Command Line

To compile a Java program that uses GAMS Java API, for instance `HelloAPI.java`, at the command line:

```
javac -cp [CLASSESPATHS] -d [TARGETDIR] HelloAPI.java
```

where

[CLASSESPATHS] is a location of '`GAMSJavaAPI.jar`', as it contains classes files that are used by '`HelloAPI.java`'.

On Windows-based platform, [CLASSESPATHS] denotes

```
[GAMSDIR]\apifiles\Java\api\GAMSJavaAPI.jar
```

On Unix-based platforms, `<code>[CLASSESPATHS]</code>` denotes

```
[GAMSDIR]/apifiles/Java/api/GAMSJavaAPI.jar
```

[TARGETDIR] is the directory to place the generated classe file.

Note that `-d [TARGETDIR]` is optional. In case `-d [TARGETDIR]` is omitted and the compilation is successful, the class file will be generated and located under the current directory.

To compile other programs, change the arguments accordingly.

1.2.1.2 Compiling a Program from Java IDE

In case of compiling a program under a Java IDE (for instance, eclipse, NetBeans, or IntelliJ), the location of the jar file `GAMSJavaAPI.jar` must be added into the Java build path of the IDE's project properties.

1.2.2 Running a Program

To run a Java program, one usually provide the following information to Java Virtual Machine:

- the directory(ies) containing all required Java classes
- the directory(ies) containing all required shared libraries
- the name of an entry point class (in most case containing main method)

A Java program that uses GAMS Java API requires a number of shared libraries for establishing a connection with GAMS software components during the run time. These shared libraries are platform dependent and they are located at [GAMSDIR] directory and [GAMSDIR]/apifiles/Java/api directory. Therefore, you must set up the execution environment properly before running a program.

1.2.2.1 Setting Up Your Environment

Before running a program:

- On Window-based platforms, [GAMSDIR] must be added into the environment variable PATH. This PATH variable is likely to be set in case you installed GAMS in the advanced mode, as the installer asked if you would like to add the directory to PATH environment variable. To add [GAMSDIR] into the variable PATH,
 - For Windows 2000, XP, Vista, or Windows 7:
 - > right-click on 'My Computer'
 - > choose 'Properties' (alternatively, click on 'System' icon in the control panel)
 - > click on 'Advanced' tab (or 'Advance system settings')
 - > click on 'Environment Variables'
 - > edit 'Path' by adding [GAMSDIR] to the variable using a semi-colon as a separator.
 - For any Window-based platform via command prompt:


```
set PATH=%PATH%; [GAMSDIR]
```
- On Unix-based platforms, [GAMSDIR] must be added into the environment variable LD_LIBRARY_PATH (or DYLD_LIBRARY_PATH on Mac OS family).
 - For Bourne shell and its derivatives:


```
export LD_LIBRARY_PATH=${LD_LIBRARY_PATH}: [GAMSDIR]
```
 - For C Shell :


```
setenv LD_LIBRARY_PATH ${LD_LIBRARY_PATH}: [GAMSDIR]
```
 - On Mac OS family, replace LD_LIBRARY_PATH by DYLD_LIBRARY_PATH.

1.2.2.2 Running a Program from Command Line

To run a Java program that uses GAMS Java API, for instance HelloAPI.class containing in [TARGETDIR] directory, at the command line type

```
java -cp [CLASSESPATHS] -Djava.library.path=[LIBRARYPATHS] HelloAPI
```

where

[CLASSESPATHS] is the list of two paths, a path containing 'HelloAPI.class' and a path of GAMSJavaAPI.jar, separated by path separator on the targeted platform.
 On Windows-based platform, [CLASSESPATHS] denotes
 [TARGETDIR];[GAMSDIR]\apifiles\Java\api\GAMSJavaAPI.jar
 On Unix-based platform, [CLASSESPATHS] denotes
 [TARGETDIR]:[GAMSDIR]/apifiles/Java/api/GAMSJavaAPI.jar

[LIBRARYPATHS] is the list of paths containing all required shared libraries.
 On Windows-based platform, [LIBRARYPATHS] denotes
 [GAMSDIR]\apifiles\Java\api
 On Unix-based platform, [LIBRARYPATHS] denotes
 [GAMSDIR]/apifiles/Java/api

HelloAPI is the name of an entry point class containing main method

Please note that it is possible to add [CLASSESPATH] to your CLASSPATH environment variable of the operating system as an alternative to specify -cp [CLASSESPATH].

For most operations performed by GAMS Java API such as gdx or options operations, it is important to set [LIBRARYPATHS] to the directory containing corresponding shared libraries ([GAMSDIR]/apifiles/Java/api by default) when running a program. Otherwise, an exception will be raised during the run-time as the java run time system fails to load the required libraries. In case [LIBRARYPATHS] contains a shared library whose version is different from those found in [GAMSDIR] directory, an exception will also be raised during the run-time.

To run other programs, change the arguments accordingly.

1.2.2.3 Running a Program from Java IDE

In case of running a program under a Java IDE (for instance, eclipse, NetBeans, or IntelliJ), it is possible to set the java library path `-Djava.library.path` via the properties of the IDE project itself. For all cases, it is recommended to configure the IDE to pass the following argument to Java Virtual Machine:

```
-Djava.library.path=[LIBRARYPATHS]
```

where `[LIBRARYPATHS]` describes the list of paths containing all required shared libraries and can potentially be replaced by the corresponding IDE specific variables.

1.3 Examples

GAMS provides several examples to demonstrate how to use GAMS Java API. These examples are contained in the `apifiles/Java` directory under the GAMS directory `[GAMSDIR]`.

For instance, `Transport1.java` under the directory `[GAMSDIR]/apifiles/Java` demonstrates how to retrieve GAMS transport model from GAMS Model Library, execute the model with various GAMS options, and extract results after execution.

To compile `Transport1.java` at the command line:

```
javac -cp [CLASSESPATHS] -d [TARGETDIR] Transport1.java
```

where

`[CLASSESPATHS]` is an absolute path of `GAMSJavaAPI.jar`, separated by path separator on the targeted platform.
 On Windows-based platform, `[CLASSESPATHS]` denotes `[GAMSDIR]\apifiles\Java\api\GAMSJavaAPI.jar`
 On Unix-based platforms, `<code>[CLASSESPATHS]</code>` denotes `[GAMSDIR]/apifiles/Java/api/GAMSJavaAPI.jar`

`[TARGETDIR]` is the destination directory to place the generated classed file. The class file will be located under the directory structure mapped to package `com.gams.examples`.
 On Windows-based platform, `[CLASSESPATHS]` denotes `[TARGETDIR]\com\gams\examples`
 On Unix-based platforms, `<code>[CLASSESPATHS]</code>` denotes `[TARGETDIR]/com/gams/examples`

To run `Transport1.class` at the command line:

```
java -cp [CLASSESPATHS] -Djava.library.path=[LIBRARYPATHS] com.gams.examples.Transport1
```

where

`[CLASSESPATHS]` is the list of two paths, a path containing `'Transport1.class'` and an absolute path of `'GAMSJavaAPI.jar'` (in this case `[TARGETDIR]` from the compilation), separated by path separator on the targeted platform.
 On Windows-based platform, `[CLASSESPATHS]` denotes `[TARGETDIR];[GAMSDIR]\apifiles\Java\api\GAMSJavaAPI.jar`
 On Unix-based platforms, `<code>[CLASSESPATHS]</code>` denotes `[TARGETDIR]:[GAMSDIR]/apifiles/Java/api/GAMSJavaAPI.jar`

`[LIBRARYPATHS]` is the list of all paths containing all required shared libraries, where paths are separated by path separator on the targeted platform.
 On Windows-based platform, `[LIBRARYPATHS]` denotes `[GAMSDIR]\apifiles\Java\api`
 On Unix-based platform, `[LIBRARYPATHS]` denotes `[GAMSDIR]/apifiles/Java/api`

To compile and run other examples under the directory `[GAMSDIR]/apifiles/Java`, adjust the arguments accordingly.

1.4 Release Notes

Version 24.0.1 (December 2012)

This release contains a beta version of the object-oriented Java API that can be used to control GAMS from a Java program. It allows the seamless integration of GAMS into Java by providing appropriate classes for the interaction with GAMS. GAMS Java API objects allow a convenient way to exchange input data and model results with in-memory representation of data (GAMSDatabase), and to create and run GAMS models (GAMSJob) that can be customized by GAMS options (GAMSOPTIONS). Furthermore, they introduce a way to solve a sequence of closely related model instances in the more efficient way (GAMSModelInstance).

- A Java program that uses object-oriented Java API requires at least Java SE 5 to compile and run.
- All classes are distributed within one single jar file `GAMSJavaAPI.jar` with a namespace `com.gams.-api`, located under the `[GAMSDIR]/apifiles/Java/api/` directory.
- Java program examples are distributed with namespace `com.gams.examples`, located under `[GAMSDIR]/apifiles/Java/` directory.
- Installation and detailed documents can be found in `[GAMSDIR]/apifiles/readme.txt` and `[GAMSDIR]/docs/API/GAMS_java.pdf`.
- Javadoc for `GAMSJavaAPI.jar` can be found under `[GAMSDIR]/apifiles/java/api/javadoc` directory.

Version 24.0.2 (February 2013)

- added new function `GAMSSymbol.copySymbol`.

Chapter 2

Hierarchical Index

2.1 Class Hierarchy

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

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com.gams.api.GAMSGlobals	31
com.gams.api.GAMSGlobals.ArchType	35
com.gams.api.GAMSGlobals.DataType	36
com.gams.api.GAMSGlobals.EquType	37
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com.gams.api.GAMSGlobals.ModelStat	42
com.gams.api.GAMSGlobals.OSType	45
com.gams.api.GAMSGlobals.SolveStat	46
com.gams.api.GAMSGlobals.SpecialValues	48
com.gams.api.GAMSGlobals.UpdateAction	50
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com.gams.api.GAMSModelInstanceOpt	85
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com.gams.api.GAMSOptions	88
com.gams.api.GAMSOptions.EAction	127
com.gams.api.GAMSOptions.ECase	127
com.gams.api.GAMSOptions.ECharSet	128
com.gams.api.GAMSOptions.EDFormat	128
com.gams.api.GAMSOptions.EExecMode	129
com.gams.api.GAMSOptions.EFileCase	129
com.gams.api.GAMSOptions.EForceWork	130
com.gams.api.GAMSOptions.EgdxCompress	130
com.gams.api.GAMSOptions.EgdxConvert	131
com.gams.api.GAMSOptions.EHoldFixed	131
com.gams.api.GAMSOptions.EInteractiveSolver	131
com.gams.api.GAMSOptions.EKeep	132
com.gams.api.GAMSOptions.ESavePoint	132
com.gams.api.GAMSOptions.ESolPrint	133
com.gams.api.GAMSOptions.ESolveLink	133
com.gams.api.GAMSOptions.EStepSum	134
com.gams.api.GAMSOptions.EStringChk	134
com.gams.api.GAMSOptions.ESys11	135
com.gams.api.GAMSOptions.ESysOut	135
com.gams.api.GAMSOptions.ETFormat	136

com.gams.api.GAMSOptions.EZeroResRep	136
com.gams.api.GAMSSymbolRecord	150
com.gams.api.GAMSEquationRecord	25
com.gams.api.GAMSPParameterRecord	137
com.gams.api.GAMSSetRecord	138
com.gams.api.GAMSVariableRecord	153
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com.gams.api.GAMSDatabase	14
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com.gams.api.GAMSEquation	24
com.gams.api.GAMSPParameter	137
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Chapter 3

Class Index

3.1 Class List

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

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Chapter 4

Class Documentation

4.1 com.gams.api.GAMSCheckpoint Class Reference

An instance of [GAMSCheckpoint](#) captures the state of a [GAMSJob](#) after the [GAMSJob.run](#) method has been carried out, and can be created via the call of [methods](#).

Public Member Functions

- [GAMSWorkspace cpWorkspace](#) ()
Get the [GAMSWorkspace](#).
- [String cpName](#) ()
Get the checkpoint name.
- [String cpFileName](#) ()
Get the checkpoint file name (extension .g00)
- [GAMSModelInstance addModelInstance](#) ()
Create model instance.
- [GAMSModelInstance addModelInstance](#) (String modelInstanceName)
Create model instance.

4.1.1 Detailed Description

An instance of [GAMSCheckpoint](#) captures the state of a [GAMSJob](#) after the [GAMSJob.run](#) method has been carried out, and can be created via the call of [methods](#).

Another [GAMSJob](#) can continue (or restart) from a [GAMSCheckpoint](#). A [GAMSCheckpoint](#) constructed with a file name will create a file (extension .g00) for permanent storage when supplied as parameter on the [GAMSJob.run](#) method. Moreover, a [GAMSModelInstance](#) is also initialized from a checkpoint that contains the model definition of the model instance.

4.1.2 Member Function Documentation

4.1.2.1 [GAMSModelInstance](#) com.gams.api.GAMSCheckpoint.addModelInstance ()

Create model instance.

The name of a [GAMSModelInstance](#) object is generated automatically.

Returns

Reference to [GAMSModelInstance](#) object

4.1.2.2 **GAMSModelInstance** `com.gams.api.GAMSCheckpoint.addModelInstance (String modelName)`

Create model instance.

Parameters

<i>modelName</i>	the name of GAMSModelInstance instance.
------------------	---------------------------------------------------------

Returns

Reference to [GAMSModelInstance](#) instance

4.1.2.3 **String** `com.gams.api.GAMSCheckpoint.cpFileName ()`

Get the checkpoint file name (extension .g00)

Returns

The file name of [GAMSCheckpoint](#) instance

4.1.2.4 **String** `com.gams.api.GAMSCheckpoint.cpName ()`

Get the checkpoint name.

Returns

The name of [GAMSCheckpoint](#) instance

4.1.2.5 **GAMSWorkspace** `com.gams.api.GAMSCheckpoint.cpWorkspace ()`

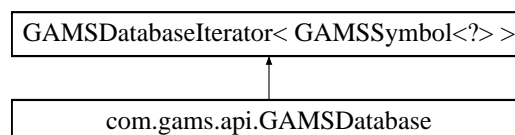
Get the [GAMSWorkspace](#).

Returns

Reference to [GAMSWorkspace](#) instance

4.2 **com.gams.api.GAMSDatabase** Class Reference

Inheritance diagram for `com.gams.api.GAMSDatabase`:



Public Member Functions

- **String** `getName ()`
Get [GAMSDatabase](#) name.
- **void** `export ()`

- Write database into a GDX file.*

 - void [export](#) (String filePath)
- Write database into a GDX file.*

 - [GAMSEquation addEquation](#) (String identifier, int dimension, GAMSGlobals.EquType equType, String explanatoryText)

Add equation symbol to database.
- [GAMSSet addSet](#) (String identifier, int dimension, String explanatoryText)

Add set symbol to database.
- [GAMSPParameter addParameter](#) (String identifier, int dimension, String explanatoryText)

Add parameter symbol to database.
- [GAMSVariable addVariable](#) (String identifier, int dimension, GAMSGlobals.VarType varType, String explanatoryText)

Add variable symbol to database.
- [GAMSSymbol<?> getSymbol](#) (String symbolIdentifier)

Get GAMSSymbol by name.
- [GAMSEquation getEquation](#) (String identifier)

Get GAMSEquation by name.
- [GAMSPParameter getParameter](#) (String identifier)

Get GAMSPParameter by name.
- [GAMSSet getSet](#) (String identifier)

Get GAMSSet by name.
- [GAMSVariable getVariable](#) (String variableName)

Get GAMSVariable by name.
- void [compact](#) ()

Dispose temporary external resources in database (advanced use)
- int [getNumberOfSymbols](#) ()

Get the number of GAMSymbols in [GAMSDatabase](#).
- void [clear](#) ()

Clear all symbols in [GAMSDatabase](#).
- [Iterator< GAMSSymbol<?> > iterator](#) ()

Returns an iterator over a set of elements of type T.
- boolean [hasNext](#) ()

Checks if the iteration has more elements.
- [GAMSSymbol<?> next](#) ()

Return the next element T in the iteration.
- void [remove](#) ()

Removes from the underlying collection the last element returned by this iterator (optional operation).
- boolean [isDisposed](#) ()

inquire if this database has already been disposed
- void [dispose](#) ()

Free unmanaged resources.

Protected Member Functions

- void [finalize](#) ()

Destructor.

4.2.1 Detailed Description

An instance of [GAMSDatabase](#) communicates data between the Java world and the GAMS world. A [GAMSDatabase](#) consists of a collection of symbols that allows to iterate conveniently through the symbols in a [GAMSDatabase](#). The symbol types available for a [GAMSDatabase](#) correspond to the symbols types known from the GAMS language (Set, Parameter, Variable, and Equation) are represented in Java by a derived class (correspondingly [GAMSSet](#), [GAMSPParameter](#), [GAMSVariable](#), and [GAMSEquation](#)) of [GAMSSymbol](#) class. Besides the type, a [GAMSSymbol](#) has a name (this has to match the name inside the GAMS model), a dimension (currently up to 20, see also [GAMSGlobals.MAXDIM](#)) and explanatory text.

Variables and equations also have a subtype: e.g. Binary, Positive, etc. for variables (see [GAMSGlobals.VarType](#)) and e.g. E, G etc. for equations (see [GAMSGlobals.EquType](#)).

A [GAMSDatabase](#) can be created empty, or initialized from existing GDX files or from another [GAMSDatabase](#) (copy). Symbols can be added at any time (e.g. with [GAMSDatabase.addParameter](#) method), but once a symbol is part of a [GAMSDatabase](#), it cannot be removed. Only its associated data ([GAMSSymbolRecord](#)) can be purged (see [GAMSSymbol.clear\(\)](#) method) or individually removed (with [GAMSSymbol.deleteRecord\(String\[\]\)](#) method). Individual data elements are accessed record by record. A record is identified by the keys (a vector of strings). The record data varies by symbol type. For example, a parameter record has a Value property, a variable has the properties Level, Lower, Upper, Marginal, and Scale. Adding a record with keys that already exist results in an exception. Similar, the unsuccessful search for a record also results in an exception.

[GAMSSymbol](#) implements the Java `java.lang.Iterable` interface to conveniently iterate through the records of a symbol. There are also sliced access methods to symbol records that allow to iterate through all records with a fixed index at some positions. [GAMSDatabase](#) instances can be exported as GDX files for permanent storage. They also manage external resources and need to be properly disposed before the Java garbage collector reclaims the instance (see [GAMSDatabase.dispose\(\)](#)).

[GAMSJob.OutDB\(\)](#) and [GAMSModelInstance.SyncDB\(\)](#) provide instances of [GAMSDatabase](#) to communicate results from a GAMS run or a solve. These databases should only be used in the context of the base object ([GAMSJob](#) or [GAMSModelInstance](#)). If a copy of such a database is required the [GAMSDatabase](#) constructor that initializes a [GAMSDatabase](#) from another database should be used. For instance:

```
GAMSDatabase db = GAMSJob.OutDB();
GAMSDatabase newdb = workspace.addDatabase(db);
```

[GAMSDatabase](#) instances often provide the input data for a [GAMSJob](#). Such instances are listed in the run methods in [GAMSJob](#), e.g., [GAMSJob.run\(\)](#). Inside the GAMS model source the [GAMSDatabase](#) is accessible through a GDX file. The GAMS model source requires a particular file name to connect to the proper GDX file (e.g. \$GDXIN filename). A [GAMSDatabase](#) can be created with a given name which can be then used inside the model, for instance

```
GAMSDatabase db = workspace.addDatabase("SupplyData");
```

and then inside the GAMS model source:

```
$GDXIN SupplyData
```

or an automatically generated name can be used. This name can be passed down to the GAMS model by using the Defines list of a [GAMSOPTIONS](#) instance:

```
GAMSDatabase db = workspace.addDatabase();
GAMSOPTIONS opt = workspace.addOptions();
opt.defines("SupplyDataFileName", db.getName());
...
gamsjob.run(opt, db);
```

Inside the GAMS model source the name is accessed as follows:

```
$GDXIN %SupplyDataFileName%
```

One has to act with some caution when it comes to ordered sets which e.g. allow lag and lead. By not enforcing the "domain checking" for the [GAMSDatabase](#) class we have aggravated the potential problems for ordered sets. For GAMS, the labels of set elements are just strings, so the order of a set is determined by the appearance of its elements. For example, if one has 'set k / 2,3,4,1,5 /', the order of k is exactly given by this sequence. So the lag (k-1) of k=4 is 3 and the lead (k+1) of k=4 is 1.

GAMS performs arithmetic with an extended number range. GAMS has special values for infinity (+INF, -INF), epsilon (EPS), not available (NA), and undefined (UNDEF). When GAMS evaluates expressions with these special values, the calculating engine ensures the correctness of the result (e.g. $5 * \text{eps} = \text{eps}$ or $5 + \text{eps} = 5$). The GAMS model CRAZY in the GAMS Model Library documents the results of the arithmetic operations with respect to special values.

In the GAMS Java API we map the IEEE standard values for +/-infinity (Double.POSITIVE_INFINITY and Double.NEGATIVE_INFINITY) and NA (Double.NaN) to the corresponding GAMS values. The special value for UNDEF gets unfiltered through the GAMS Java API. The internal double value of UNDEF is 1.0E300 (or better use [GAMSGlobals.SpecialValues.UNDEFINED](#)).

Special attention needs to be given to the value of 0. Since GAMS is a sparse system it does not store (parameter) records with a true 0. If a record with numerical value of 0 is needed, EPS can help. For example:

```
set j /1*10 /;
parameter b(j);
b(j) = 1; b('5') = 0;
scalar s,c;
s = sum(j, b(j));
c = card(b);
display s,c;
```

will result in

```
----          3 PARAMETER s          =          9.000
              PARAMETER c          =          9.000
```

but

```
b(j) = 1; b('5') = EPS;
```

will result in

```
----          3 PARAMETER s          =          9.000
              PARAMETER c          =         10.000
```

What are the consequences for the GAMS Java API? If we read parameter b in case of $b('5')=0$, the [GAMSDatabase](#) will not have a record for b('5'). In case of $b('5')=\text{EPS}$, the [GAMSDatabase](#) will have a record with value Double.MIN_VALUE. Unlike the IEEE values (e.g. Double.POSITIVE_INFINITY), arithmetic operations in Java will modify Double.MIN_NORMAL (e.g. $5 * \text{Double.POSITIVE_INFINITY} = \text{Double.POSITIVE_INFINITY}$ but $5 * \text{Double.MIN_NORMAL} \neq \text{Double.MIN_NORMAL}$). The same rules apply for preparing input data for GAMS in a [GAMSDatabase](#). If a value of Double.MIN_NORMAL is written, GAMS will see the special value EPS (see [GAMSGlobals.SpecialValues](#)). All other small values (including 0) will be communicated unfiltered to GAMS. As mentioned before, zeros will not be entered as data records in GAMS. The compiler control \$on/offEPS can help to automatically map zeros to EPS.

There is one oddity concerning values smaller than $1e-250$ on GAMS input. Consider the following example:

```
GAMSParameter b = db.addParameter("b",1,"");
for(int i=1; i < 11; i++)
    b.addRecord( String.valueOf(i) ).setValue( 1 );
b.findRecord("5").setValue( 1E-251 );
job.run(db);
```

with GAMS code:

```

$load j b
scalar card_b;
card_b = card(b);
display card_b;
b(j) = 2*b(j);
card_b = card(b);
display card_b;

```

A record with values smaller than 1E-250 exists on input in GAMS, but as soon as the record gets updated by GAMS and is still smaller than 1E-250, the record gets removed.

The ordering of a set in GAMS can be non-intuitive: Consider "set i /5/, j /1*5/;". Elements '5' gets internal number 1, '1' get 2, '2' gets 3 and so on. The last element of j '5' has already the internal number 1. The sequence of internal numbers in j is not ascending and hence GAMS considers set j as not sorted, i.e. one can't use the ord() function nor the lag or lead (-, -, +, ++) operators. If 'j' would have been defined before 'i' in this example, the "set not ordered" problem would have been avoided.

Please note that the [GAMSDatabase](#) actually does not implement a relational model for database management. It should be seen as a data storage or data container.

See Also

[GAMSEquation](#)
[GAMSGlobals](#)
[GAMSJob](#)
[GAMSSymbol](#)
[GAMSOPTIONS](#)
[GAMSParameter](#)
[GAMSSet](#)
[GAMSVariable](#)

4.2.2 Member Function Documentation

4.2.2.1 [GAMSEquation](#) com.gams.api.GAMSDatabase.addEquation (*String identifier*, *int dimension*, [GAMSGlobals.EquType](#) *equType*, *String explanatoryText*)

Add equation symbol to database.

Parameters

<i>identifier</i>	Equation name
<i>dimension</i>	Equation dimension
<i>equType</i>	Equation subtype (E: Equal, G: Greater or Equal than Inequality, L: Less or Equal than Inequality, N: Non-binding equation, X: External equation, C: Cone Equation)
<i>explanatoryText</i>	Explanatory text of equation

Returns

Reference to a [GAMSEquation](#) instance

Exceptions

GAMSEException	If either GAMSSet instance could not be successfully added to the database, or this GAMSDatabase instance has already been disposed therefore resources are no longer available.
--------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

See Also

[GAMSGlobals.EquType](#)

4.2.2.2 **GAMSPParameter** com.gams.api.GAMSDatabase.addParameter (*String identifier*, *int dimension*, *String explanatoryText*)

Add parameter symbol to database.

Parameters

<i>identifier</i>	Parameter name
<i>dimension</i>	Parameter dimension
<i>explanatoryText</i>	Explanatory text of parameter

Returns

Reference to a [GAMSEquation](#) instance

Exceptions

GAMSEException	If either GAMSPParameter instance could not be successfully added to the database, or this GAMSDatabase instance has already been disposed, therefore resources are no longer available.
--------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

4.2.2.3 **GAMSSet** com.gams.api.GAMSDatabase.addSet (*String identifier*, *int dimension*, *String explanatoryText*)

Add set symbol to database.

Parameters

<i>identifier</i>	Set name
<i>dimension</i>	Set dimension
<i>explanatoryText</i>	explanatory text of set

Returns

Reference to a [GAMSSet](#) instance

Exceptions

GAMSEException	If either GAMSSet instance could not be successfully added to the database, or this GAMSDatabase instance has already been disposed therefore resources are no longer available.
--------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

4.2.2.4 **GAMSVariable** com.gams.api.GAMSDatabase.addVariable (*String identifier*, *int dimension*, *GAMSGlobals.VarType varType*, *String explanatoryText*)

Add variable symbol to database.

Parameters

<i>identifier</i>	Variable name
<i>dimension</i>	Variable dimension
<i>varType</i>	Variable subtype (BINARY, INTEGER, POSITIVE, NEGATIVE, FREE, SOS1, SOS2, SEMICONT, SEMIINT)
<i>explanatoryText</i>	Explanatory text to variable

Returns

Reference to a [GAMSVariable](#) instance

Exceptions

GAMSEException	If either GAMSVariable instance could not be successfully added to the database, or this GAMSDatabase instance has already been disposed therefore resources are no longer available.
--------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

See Also

[GAMSGlobals.VarType](#)

4.2.2.5 void com.gams.api.GAMSDatabase.clear ()

Clear all symbols in [GAMSDatabase](#).

Exceptions

GAMSEException	If either there is a GAMSSymbol that could not be cleared , or this GAMSDatabase instance has already been disposed therefore resources are no longer available.
--------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

4.2.2.6 void com.gams.api.GAMSDatabase.compact ()

Dispose temporary external resources in database (advanced use)

Exceptions

GAMSEException	If this GAMSDatabase instance has already been disposed therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.2.2.7 void com.gams.api.GAMSDatabase.dispose ()

Free unmanaged resources.

4.2.2.8 void com.gams.api.GAMSDatabase.export ()

Write database into a GDX file.

The file is written to the working directory using the name of the database.

Exceptions

GAMSEException	If this GAMSDatabase instance has already been disposed therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.2.2.9 void com.gams.api.GAMSDatabase.export (String filePath)

Write database into a GDX file.

Parameters

<i>filePath</i>	The path used to write the GDX file. A relative path is relative to the GAMS working directory. If not present or null given, the file is written to the working directory using the name of the database.
-----------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Exceptions

GAMSEException	If this GAMSDatabase instance has already been disposed therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.2.2.10 void com.gams.api.GAMSDatabase.finalize () [protected]

Destructor.

4.2.2.11 [GAMSEquation](#) com.gams.api.GAMSDatabase.getEquation (String *identifier*)

Get [GAMSEquation](#) by name.

Parameters

<i>identifier</i>	Name of the equation to retrieve
-------------------	----------------------------------

Returns

Reference to a [GAMSEquation](#) instance

Exceptions

GAMSEException	If either a GAMSEquation with the given name could not be found in GAMSDatabase , or this GAMSDatabase instance has already been disposed, therefore resources are no longer available.
--------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

4.2.2.12 String com.gams.api.GAMSDatabase.getName ()

Get [GAMSDatabase](#) name.

Returns

name of [GAMSDatabase](#) instance

4.2.2.13 int com.gams.api.GAMSDatabase.getNumberOfSymbols ()

Get the number of GAMSymbols in [GAMSDatabase](#).

Returns

the number of GAMSsymbols

Exceptions

GAMSEException	If this GAMSDatabase instance has already been disposed therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.2.2.14 **GAMSPParameter** `com.gams.api.GAMSDatabase.getParameter (String identifier)`

Get [GAMSPParameter](#) by name.

Parameters

<i>identifier</i>	Name of the parameter to retrieve
-------------------	-----------------------------------

Returns

Reference to a [GAMSPParameter](#) instance

Exceptions

GAMSEException	If either a GAMSPParameter with the given name could not be found in GAMSDatabase , or this GAMSDatabase instance has already been disposed therefore resources are no longer available.
--------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

4.2.2.15 **GAMSSet** `com.gams.api.GAMSDatabase.getSet (String identifier)`

Get [GAMSSet](#) by name.

Parameters

<i>identifier</i>	Name of the set to retrieve
-------------------	-----------------------------

Returns

Reference to a [GAMSSet](#) instance

Exceptions

GAMSEException	If either a GAMSSet with the given name could not be found in GAMSDatabase , or this GAMSDatabase instance has already been disposed therefore resources are no longer available.
--------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

4.2.2.16 **GAMSSymbol**<?> `com.gams.api.GAMSDatabase.getSymbol (String symbolIdentifier)`

Get [GAMSSymbol](#) by name.

Parameters

<i>symbolIdentifier</i>	Name of the symbol to retrieve
-------------------------	--------------------------------

Returns

Reference a [GAMSSymbol](#) instance

Exceptions

GAMSEException	If either a GAMSSymbol with the given name could not be found in GAMSDatabase , or this GAMSDatabase instance has already been disposed therefore resources are no longer available.
--------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

4.2.2.17 `GAMSVariable com.gams.api.GAMSDatabase.getVariable (String variableName)`

Get [GAMSVariable](#) by name.

Parameters

<i>variableName</i>	Name of the variable to retrieve
---------------------	----------------------------------

Returns

reference to a [GAMSVariable](#) instance

Exceptions

GAMSEException	If either a GAMSVariable with the given name could not be found in GAMSDatabase , or this GAMSDatabase instance has already been disposed therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

4.2.2.18 `boolean com.gams.api.GAMSDatabase.hasNext ()`

Checks if the iteration has more elements.

Returns

true Checks if the iteration has more elements.

Exceptions

GAMSEException	If this GAMSDatabase instance has already been disposed therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.2.2.19 `boolean com.gams.api.GAMSDatabase.isDisposed ()`

inquire if this database has already been disposed

Returns

true if disposed, false otherwise

4.2.2.20 `Iterator<GAMSSymbol<?>> com.gams.api.GAMSDatabase.iterator ()`

Returns an iterator over a set of elements of type T.

Returns

an iterator over a set of elements of type T.

Exceptions

GAMSEException	If this GAMSDatabase instance has already been disposed therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.2.2.21 `GAMSSymbol<?> com.gams.api.GAMSDatabase.next ()`

Return the next element T in the iteration.

Returns

element T

Exceptions

GAMSEException	If either there is no next GAMSSymbol in the iteration, or this GAMSDatabase instance has already been disposed therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

4.2.2.22 `void com.gams.api.GAMSDatabase.remove ()`

Removes from the underlying collection the last element returned by this iterator (optional operation).

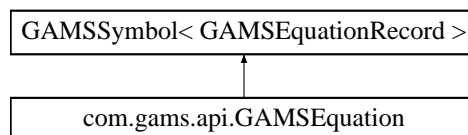
Exceptions

GAMSEException	If either there is no GAMSSymbol to remove, or this GAMSDatabase instance has already been disposed therefore resources are no longer available, or an element could not be successfully removed from the database.
--------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

4.3 `com.gams.api.GAMSEquation` Class Reference

This is the representation of an equation symbol in GAMS.

Inheritance diagram for `com.gams.api.GAMSEquation`:



Public Member Functions

- `GAMSGlobals.EquType` [getEquType](#) ()
Get GAMS equation type.

Protected Member Functions

- [GAMSEquationRecord](#) **CheckAndReturnRecord** (long symIterPtr)

4.3.1 Detailed Description

This is the representation of an equation symbol in GAMS.

It exists in a [GAMSDatabase](#) and contains [GAMSEquationRecords](#) which one can iterate through.

4.3.2 Member Function Documentation

4.3.2.1 GAMSGlobals.EquType com.gams.api.GAMSEquation.getEquType ()

Get GAMS equation type.

Returns

SubType of this [GAMSEquation](#) object

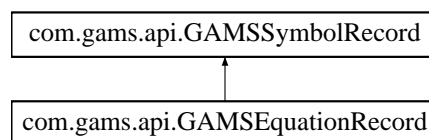
See Also

[GAMSGlobals.EquType](#)

4.4 com.gams.api.GAMSEquationRecord Class Reference

This is the representation of a single record of a [GAMSEquation](#) instance.

Inheritance diagram for com.gams.api.GAMSEquationRecord:



Public Member Functions

- double [getLevel](#) ()
Get the level of this [GAMSEquationRecord](#) instance.
- void [setLevel](#) (double value)
Set the the level of this [GAMSEquationRecord](#) instance.
- double [getMarginal](#) ()
Get the marginal of this [GAMSEquationRecord](#) instance.
- void [setMarginal](#) (double value)
Set the marginal of this [GAMSEquationRecord](#) instance.
- double [getUpper](#) ()
Get the upper bound of this [GAMSEquationRecord](#) instance.
- void [setUpper](#) (double value)
Set the lower bound of this [GAMSEquationRecord](#) instance.
- double [getLower](#) ()
Get the lower bound of this [GAMSEquationRecord](#).
- void [setLower](#) (double value)
Set the lower bound of this [GAMSEquationRecord](#) instance.
- double [getScale](#) ()
Get the scale factor of this [GAMSEquationRecord](#) instance.
- void [setScale](#) (double value)
Set the scale factor of this [GAMSEquationRecord](#) instance.

Additional Inherited Members

4.4.1 Detailed Description

This is the representation of a single record of a [GAMSEquation](#) instance.

4.4.2 Member Function Documentation

4.4.2.1 `double com.gams.api.GAMSEquationRecord.getLevel ()`

Get the level of this [GAMSEquationRecord](#) instance.

Returns

the level value

Exceptions

GAMSEException	If this GAMSDatabase instance has already been disposed therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.4.2.2 `double com.gams.api.GAMSEquationRecord.getLower ()`

Get the lower bound of this [GAMSEquationRecord](#).

Returns

the lower bound value

Exceptions

GAMSEException	If the GAMSDatabase instance of this symbol has already been disposed, therefore resources are no longer available.
--------------------------------	-------------------------------------------------------------------------------------------------------------------------------------

4.4.2.3 `double com.gams.api.GAMSEquationRecord.getMarginal ()`

Get the marginal of this [GAMSEquationRecord](#) instance.

Returns

the marginal value

Exceptions

GAMSEException	If the GAMSDatabase instance of this symbol has already been disposed, therefore resources are no longer available.
--------------------------------	-------------------------------------------------------------------------------------------------------------------------------------

4.4.2.4 `double com.gams.api.GAMSEquationRecord.getScale ()`

Get the scale factor of this [GAMSEquationRecord](#) instance.

Returns

the scale factor value

Exceptions

GAMSEException	If the GAMSDatabase instance of this symbol has already been disposed, therefore resources are no longer available.
--------------------------------	-------------------------------------------------------------------------------------------------------------------------------------

4.4.2.5 double com.gams.api.GAMSEquationRecord.getUpper ()

Get the upper bound of this [GAMSEquationRecord](#) instance.

Returns

the upper bound value

Exceptions

GAMSEException	If the GAMSDatabase instance of this symbol has already been disposed, therefore resources are no longer available.
--------------------------------	-------------------------------------------------------------------------------------------------------------------------------------

4.4.2.6 void com.gams.api.GAMSEquationRecord.setLevel (double value)

Set the the level of this [GAMSEquationRecord](#) instance.

Parameters

<i>value</i>	the level value
--------------	-----------------

Exceptions

GAMSEException	If the GAMSDatabase instance of this symbol has already been disposed, therefore resources are no longer available.
--------------------------------	-------------------------------------------------------------------------------------------------------------------------------------

4.4.2.7 void com.gams.api.GAMSEquationRecord.setLower (double value)

Set the lower bound of this [GAMSEquationRecord](#) instance.

Parameters

<i>value</i>	the lower bound value
--------------	-----------------------

Exceptions

GAMSEException	If the GAMSDatabase instance of this symbol has already been disposed, therefore resources are no longer available.
--------------------------------	-------------------------------------------------------------------------------------------------------------------------------------

4.4.2.8 void com.gams.api.GAMSEquationRecord.setMarginal (double value)

Set the marginal of this [GAMSEquationRecord](#) instance.

Parameters

<i>value</i>	the marginal value
--------------	--------------------

Exceptions

GAMSEException	If the GAMSDatabase instance of this symbol has already been disposed, therefore resources are no longer available.
--------------------------------	-------------------------------------------------------------------------------------------------------------------------------------

4.4.2.9 void com.gams.api.GAMSEquationRecord.setScale (double value)

Set the scale factor of this [GAMSEquationRecord](#) instance.

Parameters

<i>value</i>	the scale factor value
--------------	------------------------

Exceptions

GAMSEException	If the GAMSDatabase instance of this symbol has already been disposed, therefore resources are no longer available.
--------------------------------	-------------------------------------------------------------------------------------------------------------------------------------

4.4.2.10 void com.gams.api.GAMSEquationRecord.setUpper (double value)

Set the lower bound of this [GAMSEquationRecord](#) instance.

Parameters

<i>value</i>	the upper bound value
--------------	-----------------------

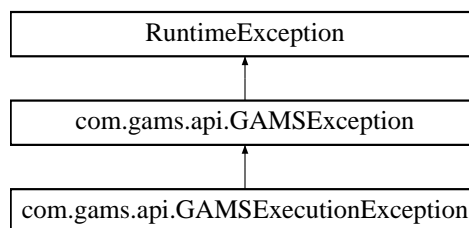
Exceptions

GAMSEException	If the GAMSDatabase instance of this symbol has already been disposed, therefore resources are no longer available.
--------------------------------	-------------------------------------------------------------------------------------------------------------------------------------

4.5 com.gams.api.GAMSEException Class Reference

[GAMSEException](#) contains the information described the cause of exception during the execution of GAMS Java API.

Inheritance diagram for com.gams.api.GAMSEException:



Public Member Functions

- [GAMSEException](#) ()
Constructs a new [GAMSEException](#).
- [GAMSEException](#) (String message)
Constructs a new [GAMSEException](#) with the specified detail message.
- String [getMessage](#) ()
Returns the detailed message string of this [GAMSEException](#).

4.5.1 Detailed Description

[GAMSEException](#) contains the information described the cause of exception during the execution of GAMS Java API.

[GAMSExecutionException](#) extends Java RuntimeException therefore, it can be thrown during the normal operation of the Java Virtual Machine.

4.5.2 Constructor & Destructor Documentation

4.5.2.1 com.gams.api.GAMSExecutionException.GAMSExecutionException ()

Constructs a new [GAMSExecutionException](#).

4.5.2.2 com.gams.api.GAMSExecutionException.GAMSExecutionException (String message)

Constructs a new [GAMSExecutionException](#) with the specified detail message.

Parameters

<i>message</i>	the detail message.
----------------	---------------------

4.5.3 Member Function Documentation

4.5.3.1 String com.gams.api.GAMSExecutionException.getMessage ()

Returns the detailed message string of this [GAMSExecutionException](#).

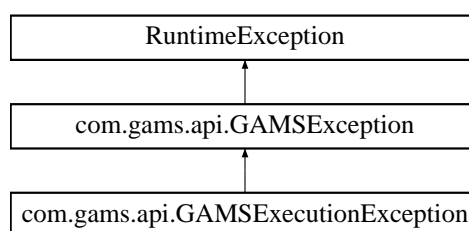
Returns

the detailed message string of this [GAMSExecutionException](#) instance.

4.6 com.gams.api.GAMSExecutionException Class Reference

[GAMSExecutionException](#) contains the exit code unsuccessfully returned by GAMS process.

Inheritance diagram for com.gams.api.GAMSExecutionException:



Public Member Functions

- [GAMSExecutionException](#) (int code)
Constructs a new [GAMSExecutionException](#) with the specified exit code.
- int [getExitCode](#) ()
Get the error exit code returned by executing GAMS process.
- String [getExitCodeString](#) ()
Get the string describing the error exit code returned by GAMS process.
- String [getMessage](#) ()
Returns the detailed message of this [GAMSExecutionException](#).

4.6.1 Detailed Description

[GAMSExecutionException](#) contains the exit code unsuccessfully returned by GAMS process.

For instance, within [GAMSJob.run](#) method, this exception will be thrown if GAMS process terminates with an error (exit code that is not '0').

[GAMSExecutionException](#) extends [GAMSException](#) which subclasses Java Runtime Exception; therefore, it can be thrown during the normal operation of the Java Virtual Machine.

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.6.2 Constructor & Destructor Documentation

4.6.2.1 `com.gams.api.GAMSExecutionException.GAMSExecutionException (int code)`

Constructs a new [GAMSExecutionException](#) with the specified exit code.

Parameters

<i>code</i>	the detail message.
-------------	---------------------

4.6.3 Member Function Documentation

4.6.3.1 `int com.gams.api.GAMSExecutionException.getExitCode ()`

Get the error exit code returned by executing GAMS process.

Returns

the int value of the exit code.

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.6.3.2 `String com.gams.api.GAMSExecutionException.getExitCodeString ()`

Get the string describing the error exit code returned by GAMS process.

Returns

the string describing the exit code

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.6.3.3 `String com.gams.api.GAMSExecutionException.getMessage ()`

Returns the detailed message of this [GAMSExecutionException](#).

Returns

the detailed message of this [GAMSExecutionException](#) instance.

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.7 com.gams.api.GAMSGlobals Class Reference

[GAMSGlobals](#) defines constants that are used by com.gams.api package.

Classes

- enum [ArchType](#)
GAMS enumerated type of architecture.
- enum [DataType](#)
GAMS Data Types.
- enum [EquType](#)
Equation SubType.
- enum [ExitCodeMessage](#)
The possible return codes of the GAMS compiler and execution system (cmexRC).
- enum [ModelStat](#)
Model Solution Status.
- enum [OSType](#)
GAMS enumerated type of operating system.
- enum [SolveStat](#)
Solver termination condition.
- enum [SpecialValues](#)
Special GAMS Values.
- enum [UpdateAction](#)
What field to update.
- enum [VarType](#)
Variable SubType.

Static Public Member Functions

- static [OSType](#) [getOSType](#) ()
Get the enumerated type of operating system.
- static [ArchType](#) [getArchType](#) ()
Get the enumerated type of architecture.
- static void [setScratchFilePrefix](#) (String str)
Set a file prefix name.
- static void [setWorkingDirectory](#) (String str)
Set a file prefix name.

Static Public Attributes

- static final int `MAXDIM` = 20
Maximum dimension allowed, currently 20.
- static final int `STR_LEN` = 256
Maximum length of String allowed, currently 256.
- static final int `MAX_NO_IDIR` = 40
Maximum input directories allowed, currently 40.
- static final String `EMPTY_STRING` = new String()
Immutable Java object represented an empty String.
- static final String `GAMS_CALLSTR` = "gams"
GAMS Call string ("gams")
- static final String `CHECKPOINT_FILE_EXTENSION` = ".g00"
GAMS Checkpoint file extension (".g00")
- static final String `GAMS_FILE_EXTENSION` = ".gms"
GAMS file extension (".gms")
- static final String `GDX_FILE_EXTENSION` = ".gdx"
GDX file extension (".gdx")
- static final String `LOG_FILE_EXTENSION` = ".log"
GAMS default log file extension (".log")
- static final String `OPT_FILE_EXTENSION` = ".opt"
OPT file extension (".opt")
- static final String `OUTPUT_FILE_EXTENSION` = ".lst"
GAMS default listing file extension (".lst")
- static final String `PARAMETER_FILE_EXTENSION` = ".pf"
GAMS parameter file extension (".pf")
- static final String `JOB_NAME_PREFIX` = "gjo"
Prefix file name for a `GAMSJob` ("gjo")
- static final String `DB_NAME_PREFIX` = "gdb"
Prefix file name for a `GAMSDatabase` ("gdb")
- static final String `CP_NAME_PREFIX` = "gcp"
Prefix file name for a `GAMSCheckpoint` ("gcp")
- static final String `MI_NAME_PREFIX` = "gmi"
Prefix file name for a `GAMSModelInstance` ("gmi")
- static final String `WINDOW_EXEC_EXTENSION` = ".exe"
Default windows execution file extension (".exe")
- static final String `FILE_SEPARATOR` = System.getProperty("file.separator")
Platform dependent file separator ("\" on windows and "/" on UNIX)
- static final String `PATH_SEPARATOR` = System.getProperty("path.separator")
Platform dependent path separator (";" on windows and ":" on UNIX)
- static final String `LINE_SEPARATOR` = System.getProperty("line.separator")
Platform dependent line separator (e.g.
- static final String `OS_NAME` = System.getProperty("os.name").toLowerCase()
Operating system name.
- static String `scratchFilePrefix` = "_gams_java_"
A (modifiable) file prefix used for automatically generating files.
- static String `workingDirectory` = System.getProperty("user.dir")
A (modifiable) working directory, default value: java user's current working directory `System.getProperty("user.dir")`

4.7.1 Detailed Description

[GAMSGlobals](#) defines constants that are used by com.gams.api package.

These constants include equation subtype, variable subtype, solver termination conditions, model solution status, and update action.

4.7.2 Member Function Documentation

4.7.2.1 static `ArchType` com.gams.api.GAMSGlobals.getArchType () [static]

Get the enumerated type of architecture.

See Also

[GAMSGlobals.ArchType](#)

4.7.2.2 static `OSType` com.gams.api.GAMSGlobals.getOSType () [static]

Get the enumerated type of operating system.

See Also

[GAMSGlobals.OSType](#)

4.7.2.3 static void com.gams.api.GAMSGlobals.setScratchFilePrefix (`String str`) [static]

Set a file prefix name.

4.7.2.4 static void com.gams.api.GAMSGlobals.setWorkingDirectory (`String str`) [static]

Set a file prefix name.

4.7.3 Member Data Documentation

4.7.3.1 final `String` com.gams.api.GAMSGlobals.CHECKPOINT_FILE_EXTENSION = ".g00" [static]

GAMS Checkpoint file extension (".g00")

4.7.3.2 final `String` com.gams.api.GAMSGlobals.CP_NAME_PREFIX = "gcp" [static]

Prefix file name for a [GAMSCheckpoint](#) ("gcp")

4.7.3.3 final `String` com.gams.api.GAMSGlobals.DB_NAME_PREFIX = "gdb" [static]

Prefix file name for a [GAMSDatabase](#) ("gdb")

4.7.3.4 final `String` com.gams.api.GAMSGlobals.EMPTY_STRING = new String() [static]

Immutable Java object represented an empty String.

4.7.3.5 `final String com.gams.api.GAMSGlobals.FILE_SEPARATOR = System.getProperty("file.separator")` `[static]`

Platform dependent file separator ("\" on windows and "/" on UNIX)

4.7.3.6 `final String com.gams.api.GAMSGlobals.GAMS_CALLSTR = "gams"` `[static]`

GAMS Call string ("gams")

4.7.3.7 `final String com.gams.api.GAMSGlobals.GAMS_FILE_EXTENSION = ".gms"` `[static]`

GAMS file extension (".gms")

4.7.3.8 `final String com.gams.api.GAMSGlobals.GDX_FILE_EXTENSION = ".gdx"` `[static]`

GDX file extension (".gdx")

4.7.3.9 `final String com.gams.api.GAMSGlobals.JOB_NAME_PREFIX = "gjo"` `[static]`

Prefix file name for a [GAMSJob](#) ("gjo")

4.7.3.10 `final String com.gams.api.GAMSGlobals.LINE_SEPARATOR = System.getProperty("line.separator")` `[static]`

Platform dependent line separator (e.g.

"\n" on UNIX)

4.7.3.11 `final String com.gams.api.GAMSGlobals.LOG_FILE_EXTENSION = ".log"` `[static]`

GAMS default log file extension (".log")

4.7.3.12 `final int com.gams.api.GAMSGlobals.MAX_NO_IDIR = 40` `[static]`

Maximum input directories allowed, currently 40.

4.7.3.13 `final int com.gams.api.GAMSGlobals.MAXDIM = 20` `[static]`

Maximum dimension allowed, currently 20.

4.7.3.14 `final String com.gams.api.GAMSGlobals.MI_NAME_PREFIX = "gmi"` `[static]`

Prefix file name for a [GAMSModelInstance](#) ("gmi")

4.7.3.15 `final String com.gams.api.GAMSGlobals.OPT_FILE_EXTENSION = ".opt"` `[static]`

OPT file extension (".opt")

4.7.3.16 `final String com.gams.api.GAMSGlobals.OS_NAME = System.getProperty("os.name").toLowerCase()` `[static]`

Operating system name.

4.7.3.17 `final String com.gams.api.GAMSGlobals.OUTPUT_FILE_EXTENSION = ".lst" [static]`

GAMS default listing file extension (".lst")

4.7.3.18 `final String com.gams.api.GAMSGlobals.PARAMETER_FILE_EXTENSION = ".pf" [static]`

GAMS parameter file extension (".pf")

4.7.3.19 `final String com.gams.api.GAMSGlobals.PATH_SEPARATOR = System.getProperty("path.separator") [static]`

Platform dependent path separator (";" on windows and ":" on UNIX)

4.7.3.20 `String com.gams.api.GAMSGlobals.scratchFilePrefix = "_gams_java_" [static]`

A (modifiable) file prefix used for automatically generating files.

4.7.3.21 `final int com.gams.api.GAMSGlobals.STR_LEN = 256 [static]`

Maximum length of String allowed, currently 256.

4.7.3.22 `final String com.gams.api.GAMSGlobals.WINDOW_EXEC_EXTENSION = ".exe" [static]`

Default windows execution file extension (".exe")

4.7.3.23 `String com.gams.api.GAMSGlobals.workingDirectory = System.getProperty("user.dir") [static]`

A (modifiable) working directory, default value: java user's current working directory `System.getProperty("user.dir")`

4.8 com.gams.api.GAMSGlobals.ArchType Enum Reference

GAMS enumerated type of architecture.

Public Attributes

- [ARCH_32_BITS](#)
32 bits
- [ARCH_64_BITS](#)
64 bits

4.8.1 Detailed Description

GAMS enumerated type of architecture.

4.8.2 Member Data Documentation

4.8.2.1 com.gams.api.GAMSGlobals.ArchType.ARCH_32_BITS

32 bits

4.8.2.2 com.gams.api.GAMSGlobals.ArchType.ARCH_64_BITS

64 bits

4.9 com.gams.api.GAMSGlobals.DataType Enum Reference

GAMS Data Types.

Public Member Functions

- `int value ()`
Get the int value of this enumerated [DataType](#).

Static Public Member Functions

- `static DataType lookup (int value)`
Lookup all data types used by GAMS.

Public Attributes

- [SET](#)
= 0, Set
- [PAR](#)
= 1, Parameter
- [VAR](#)
= 2, Variable
- [EQU](#)
= 3, Equation
- [ALIAS](#)
= 4, Alias
- [MAX](#)
= 5, max

4.9.1 Detailed Description

GAMS Data Types.

4.9.2 Member Function Documentation

4.9.2.1 `static DataType com.gams.api.GAMSGlobals.DataType.lookup (int value)` [static]

Lookup all data types used by GAMS.

Parameters

<i>value</i>	a value to lookup
--------------	-------------------

Returns

the enumerated [DataType](#) that has the specified value, `UNDEFINED_TYPE` if the specified value is not found.

4.9.2.2 `int com.gams.api.GAMSGlobals.DataType.value ()`

Get the int value of this enumerated [DataType](#).

Returns

the int value of the [DataType](#)

4.9.3 Member Data Documentation

4.9.3.1 `com.gams.api.GAMSGlobals.DataType.ALIAS`

= 4, Alias

4.9.3.2 `com.gams.api.GAMSGlobals.DataType.EQU`

= 3, Equation

4.9.3.3 `com.gams.api.GAMSGlobals.DataType.MAX`

= 5, max

4.9.3.4 `com.gams.api.GAMSGlobals.DataType.PAR`

= 1, Parameter

4.9.3.5 `com.gams.api.GAMSGlobals.DataType.SET`

= 0, Set

4.9.3.6 `com.gams.api.GAMSGlobals.DataType.VAR`

= 2, Variable

4.10 com.gams.api.GAMSGlobals.EquType Enum Reference

Equation SubType.

Public Member Functions

- `int value ()`
Get the int value of this enumerated [EquType](#).

Static Public Member Functions

- `static EquType lookup (int value)`
Lookup all equation subtypes used by GAMS.

Public Attributes

- [E](#)
=E= Equality
- [G](#)
=G= Greater or equal than inequality
- [L](#)
=L= Less or equal than inequality
- [N](#)
=N= Non-binding equation
- [X](#)
=X= External equation
- [C](#)
=C= Cone equation

4.10.1 Detailed Description

Equation SubType.

4.10.2 Member Function Documentation

4.10.2.1 static `EquType com.gams.api.GAMSGlobals.EquType.lookup (int value)` [static]

Lookup all equation subtypes used by GAMS.

Parameters

<i>value</i>	an int value to lookup
--------------	------------------------

Returns

the enumerated [EquType](#) that has the specified value, or UNDEFINED_TYPE if the specified value is not found.

4.10.2.2 `int com.gams.api.GAMSGlobals.EquType.value ()`

Get the int value of this enumerated [EquType](#).

Returns

the int value of the [EquType](#)

4.10.3 Member Data Documentation

4.10.3.1 `com.gams.api.GAMSGlobals.EquType.C`

=C= Cone equation

4.10.3.2 `com.gams.api.GAMSGlobals.EquType.E`

=E= Equality

4.10.3.3 com.gams.api.GAMSGlobals.EquType.G

=G= Greater or equal than inequality

4.10.3.4 com.gams.api.GAMSGlobals.EquType.L

=L= Less or equal than inequality

4.10.3.5 com.gams.api.GAMSGlobals.EquType.N

=N= Non-binding equation

4.10.3.6 com.gams.api.GAMSGlobals.EquType.X

=X= External equation

4.11 com.gams.api.GAMSGlobals.ExitCodeMessage Enum Reference

The possible return codes of the GAMS compiler and execution system (cmexRC).

Public Member Functions

- String [message](#) ()
Get the exit code message this enumerated [ExitCodeMessage](#).
- int [value](#) ()
Get the int value of this enumerated [ExitCodeMessage](#).
- **ExitCodeMessage** (String str)

Static Public Member Functions

- static [ExitCodeMessage](#) [lookup](#) (int val)
Lookup all GAMS exit codes.

Public Attributes

- [RETURN](#) =("normal return")
= 0, normal return
- [SOLVER_TO_BE_CALLED](#) =("solver is to be called.")
= 1, solver is to be called.
- [COMPILATION_ERROR](#) =("there was a compilation error")
= 2, there was a compilation error
- [EXECUTION_ERROR](#) =("there was an execution error")
= 3, there was an execution error
- [SYSTEM_LIMIT_REACHED](#) =("system limits were reached")
= 4, system limits were reached
- [FILE_ERROR](#) =("there was a file error")
= 5, there was a file error
- [PARAMETER_ERROR](#) =("there was a parameter error")
= 6, there was a parameter error

- `LICENSING_ERROR` = ("there was a licensing error")
= 7, *there was a licensing error*
- `GAMS_SYSTEM_ERROR` = ("there was a GAMS system error")
= 8, *there was a GAMS system error*
- `GAMS_NOT_STARTED` = ("GAMS could not be started")
= 9, *GAMS could not be started*
- `GAMS_USER_INTERRUPT` = ("user interrupt")
= 10, *user interrupt*
- `UNDEFINED_CODE` = ("Undefined GAMS exit code")
= 11, *Undefined GAMS exit code*

4.11.1 Detailed Description

The possible return codes of the GAMS compiler and execution system (cmexRC).

See Also

[GAMSExecutionException](#)
[GAMSJob.run](#)

4.11.2 Member Function Documentation

4.11.2.1 `static ExitCodeMessage com.gams.api.GAMSGlobals.ExitCodeMessage.lookup (int val) [static]`

Lookup all GAMS exit codes.

Parameters

<code>val</code>	an int value to lookup
------------------	------------------------

Returns

the enumerated [ExitCodeMessage](#) that has the specified value, or `UNDEFINED_CODE` if the specified value is not found.

4.11.2.2 `String com.gams.api.GAMSGlobals.ExitCodeMessage.message ()`

Get the exit code message this enumerated [ExitCodeMessage](#).

Returns

the exit code message

4.11.2.3 `int com.gams.api.GAMSGlobals.ExitCodeMessage.value ()`

Get the int value of this enumerated [ExitCodeMessage](#).

Returns

the exit code value

4.11.3 Member Data Documentation

4.11.3.1 `com.gams.api.GAMSGlobals.ExitCodeMessage.COMPILATION_ERROR` = ("there was a compilation error")

= 2, there was a compilation error

4.11.3.2 `com.gams.api.GAMSGlobals.ExitCodeMessage.EXECUTION_ERROR` = ("there was an execution error")

= 3, there was an execution error

4.11.3.3 `com.gams.api.GAMSGlobals.ExitCodeMessage.FILE_ERROR` = ("there was a file error")

= 5, there was a file error

4.11.3.4 `com.gams.api.GAMSGlobals.ExitCodeMessage.GAMS_NOT_STARTED` = ("GAMS cold not be started")

= 9, GAMS cold not be started

4.11.3.5 `com.gams.api.GAMSGlobals.ExitCodeMessage.GAMS_SYSTEM_ERROR` = ("there was a GAMS system error")

= 8, there was a GAMS system error

4.11.3.6 `com.gams.api.GAMSGlobals.ExitCodeMessage.GAMS_USER_INTERRUPT` = ("user interrupt")

= 10, user interrupt

4.11.3.7 `com.gams.api.GAMSGlobals.ExitCodeMessage.LICENSING_ERROR` = ("there was a licensing error")

= 7, there was a licensing error

4.11.3.8 `com.gams.api.GAMSGlobals.ExitCodeMessage.PARAMETER_ERROR` = ("there was a parameter error")

= 6, there was a parameter error

4.11.3.9 `com.gams.api.GAMSGlobals.ExitCodeMessage.RETURN` = ("normal return")

= 0, normal return

4.11.3.10 `com.gams.api.GAMSGlobals.ExitCodeMessage.SOLVER_TO_BE_CALLED` = ("solver is to be called.")

= 1, solver is to be called.

4.11.3.11 `com.gams.api.GAMSGlobals.ExitCodeMessage.SYSTEM_LIMIT_REACHED` = ("system limits were reached")

= 4, system limits were reached

4.11.3.12 `com.gams.api.GAMSGlobals.ExitCodeMessage.UNDEFINED_CODE` = ("Undefined GAMS exit code")

= 11, Undefined GAMS exit code

4.12 com.gams.api.GAMSGlobals.ModelStat Enum Reference

Model Solution Status.

Public Member Functions

- `int value ()`
Get the int value of this enumerated [ModelStat](#) object.
- **ModelStat** (int val)

Static Public Member Functions

- static [ModelStat lookup](#) (int val)
Lookup all model solution status used by GAMS.

Public Attributes

- [OPTIMAL_GLOBAL](#) =(1)
= 1, Optimal solution achieved
- [OPTIMAL_LOCAL](#) =(2)
= 2, Local optimal solution achieved
- [UNBOUNDED](#) =(3)
= 3, Unbounded model found
- [INFEASIBLE_GLOBAL](#) =(4)
= 4, Infeasible model found
- [INFEASIBLE_LOCAL](#) =(5)
= 5, Locally infeasible model found
- [INFEASIBLE_INTERMED](#) =(6)
= 6, Solver terminated early and model was still infeasible
- [NONOPTIMAL_INTERMED](#) =(7)
= 7, Solver terminated early and model was feasible but not yet optimal
- [INTEGER](#) =(8)
= 8, Integer solution found
- [NON_INTEGER_INTERMED](#) =(9)
= 9, Solver terminated early with a non integer solution found
- [INTEGER_INFEASIBLE](#) =(10)
= 10, No feasible integer solution could be found
- [LICENSE_ERROR](#) =(11)
= 11, Licensing problem
- [ERROR_UNKNOWN](#) =(12)
= 12, Error No cause known
- [ERROR_NO_SOLUTION](#) =(13)
= 13, Error No solution attained
- [NO_SOLUTION_RETURNED](#) =(14)
= 14, No solution returned
- [SOLVED_UNIQUE](#) =(15)
= 15, Unique solution in a CNS models
- [SOLVED](#) =(16)
= 16, Feasible solution in a CNS models
- [SOLVED_SINGULAR](#) =(17)

- = 17, Singular in a CNS models*
- [UNBOUNDED_NO_SOLUTION](#) =(18)
= 18, Unbounded no solution
- [INFEASIBLE_NO_SOLUTION](#) =(19)
= 19, Infeasible no solution
- [UNDEFINED_STAT](#) =(20)
= 20, Undefined status

4.12.1 Detailed Description

Model Solution Status.

4.12.2 Member Function Documentation

4.12.2.1 `static ModelStat com.gams.api.GAMSGlobals.ModelStat.lookup (int val)` [static]

Lookup all model solution status used by GAMS.

Parameters

<i>val</i>	an int value to lookup
------------	------------------------

Returns

the enumerated [ModelStat](#) that has the specified value, or UNDEFINED_STAT if the specified value is not found.

4.12.2.2 `int com.gams.api.GAMSGlobals.ModelStat.value ()`

Get the int value of this enumerated [ModelStat](#) object.

Returns

the int value of the [ModelStat](#)

4.12.3 Member Data Documentation

4.12.3.1 `com.gams.api.GAMSGlobals.ModelStat.ERROR_NO_SOLUTION` =(13)

= 13, Error No solution attained

4.12.3.2 `com.gams.api.GAMSGlobals.ModelStat.ERROR_UNKNOWN` =(12)

= 12, Error No cause known

4.12.3.3 `com.gams.api.GAMSGlobals.ModelStat.INFEASIBLE_GLOBAL` =(4)

= 4, Infeasible model found

4.12.3.4 `com.gams.api.GAMSGlobals.ModelStat.INFEASIBLE_INTERMED` =(6)

= 6, Solver terminated early and model was still infeasible

4.12.3.5 `com.gams.api.GAMSGlobals.ModelStat.INFEASIBLE_LOCAL` =(5)

= 5, Locally infeasible model found

4.12.3.6 `com.gams.api.GAMSGlobals.ModelStat.INFEASIBLE_NO_SOLUTION` =(19)

= 19, Infeasible no solution

4.12.3.7 `com.gams.api.GAMSGlobals.ModelStat.INTEGER` =(8)

= 8, Integer solution found

4.12.3.8 `com.gams.api.GAMSGlobals.ModelStat.INTEGER_INFEASIBLE` =(10)

= 10, No feasible integer solution could be found

4.12.3.9 `com.gams.api.GAMSGlobals.ModelStat.LICENSE_ERROR` =(11)

= 11, Licensing problem

4.12.3.10 `com.gams.api.GAMSGlobals.ModelStat.NO_SOLUTION_RETURNED` =(14)

= 14, No solution returned

4.12.3.11 `com.gams.api.GAMSGlobals.ModelStat.NON_INTEGER_INTERMED` =(9)

= 9, Solver terminated early with a non integer solution found

4.12.3.12 `com.gams.api.GAMSGlobals.ModelStat.NONOPTIMAL_INTERMED` =(7)

= 7, Solver terminated early and model was feasible but not yet optimal

4.12.3.13 `com.gams.api.GAMSGlobals.ModelStat.OPTIMAL_GLOBAL` =(1)

= 1, Optimal solution achieved

4.12.3.14 `com.gams.api.GAMSGlobals.ModelStat.OPTIMAL_LOCAL` =(2)

= 2, Local optimal solution achieved

4.12.3.15 `com.gams.api.GAMSGlobals.ModelStat.SOLVED` =(16)

= 16, Feasible solution in a CNS models

4.12.3.16 `com.gams.api.GAMSGlobals.ModelStat.SOLVED_SINGULAR` =(17)

= 17, Singular in a CNS models

4.12.3.17 com.gams.api.GAMSGlobals.ModelStat.SOLVED_UNIQUE =(15)

= 15, Unique solution in a CNS models

4.12.3.18 com.gams.api.GAMSGlobals.ModelStat.UNBOUNDED =(3)

= 3, Unbounded model found

4.12.3.19 com.gams.api.GAMSGlobals.ModelStat.UNBOUNDED_NO_SOLUTION =(18)

= 18, Unbounded no solution

4.12.3.20 com.gams.api.GAMSGlobals.ModelStat.UNDEFINED_STAT =(20)

= 20, Undefined status

4.13 com.gams.api.GAMSGlobals.OSType Enum Reference

GAMS enumerated type of operating system.

Public Attributes

- [WINDOWS](#)
Windows operating system.
- [UNIX](#)
Unix operating system.
- [LINUX](#)
Linux operating system.
- [MAC](#)
Mac operating system.
- [SOLARIS](#)
Solaris operating system.

4.13.1 Detailed Description

GAMS enumerated type of operating system.

4.13.2 Member Data Documentation

4.13.2.1 com.gams.api.GAMSGlobals.OSType.LINUX

Linux operating system.

4.13.2.2 com.gams.api.GAMSGlobals.OSType.MAC

Mac operating system.

4.13.2.3 com.gams.api.GAMSGlobals.OSType.SOLARIS

Solaris operating system.

4.13.2.4 com.gams.api.GAMSGlobals.OSType.UNIX

Unix operating system.

4.13.2.5 com.gams.api.GAMSGlobals.OSType.WINDOWS

Windows operating system.

4.14 com.gams.api.GAMSGlobals.SolveStat Enum Reference

Solver termination condition.

Public Member Functions

- `int value ()`
Get the int value of this enumerated [SolveStat](#).
- `SolveStat (int val)`

Static Public Member Functions

- `static SolveStat lookup (int val)`
Lookup all solver termination conditions used by GAMS.

Public Attributes

- `NORMAL =(1)`
= 1, Normal termination
- `ITERATION =(2)`
= 2, Solver ran out of iterations
- `RESOURCE =(3)`
= 3, Solver exceeded time limit
- `SOLVER =(4)`
= 4, Solver quit with a problem
- `EVAL_ERROR =(5)`
= 5, Solver quit with nonlinear term evaluation errors
- `CAPABILITY =(6)`
= 6, Solver terminated because the model is beyond the solvers capabilities
- `LICENSE =(7)`
= 7, Solver terminated with a license error
- `USER =(8)`
= 8, Solver terminated on users request (e.g.
- `SETUP_ERR =(9)`
= 9, Solver terminated on setup error
- `SOLVER_ERR =(10)`
= 10, Solver terminated with error

- [INTERNAL_ERR](#) =(11)
= 11, Solver terminated with error
- [SKIPPED](#) =(12)
= 12, Solve skipped
- [SYSTEM_ERR](#) =(13)
= 13, Other error
- [UNDEFINED_STAT](#) =(14)
= 14, Undefined condition

4.14.1 Detailed Description

Solver termination condition.

4.14.2 Member Function Documentation

4.14.2.1 static [SolveStat](#) com.gams.api.GAMSGlobals.SolveStat.lookup (int *val*) [static]

Lookup all solver termination conditions used by GAMS.

Parameters

<i>val</i>	an int value to lookup
------------	------------------------

Returns

the enumerated [SolveStat](#) that has the specified value, or UNDEFINED_STAT if the specified value is not found.

4.14.2.2 int com.gams.api.GAMSGlobals.SolveStat.value ()

Get the int value of this enumerated [SolveStat](#).

Returns

the int value of the [SolveStat](#)

4.14.3 Member Data Documentation

4.14.3.1 com.gams.api.GAMSGlobals.SolveStat.CAPABILITY =(6)

= 6, Solver terminated because the model is beyond the solvers capabilities

4.14.3.2 com.gams.api.GAMSGlobals.SolveStat.EVAL_ERROR =(5)

= 5, Solver quit with nonlinear term evaluation errors

4.14.3.3 com.gams.api.GAMSGlobals.SolveStat.INTERNAL_ERR =(11)

= 11, Solver terminated with error

4.14.3.4 com.gams.api.GAMSGlobals.SolveStat.ITERATION =(2)

= 2, Solver ran out of iterations

4.14.3.5 `com.gams.api.GAMSGlobals.SolveStat.LICENSE` =(7)

= 7, Solver terminated with a license error

4.14.3.6 `com.gams.api.GAMSGlobals.SolveStat.NORMAL` =(1)

= 1, Normal termination

4.14.3.7 `com.gams.api.GAMSGlobals.SolveStat.RESOURCE` =(3)

= 3, Solver exceeded time limit

4.14.3.8 `com.gams.api.GAMSGlobals.SolveStat.SETUP_ERR` =(9)

= 9, Solver terminated on setup error

4.14.3.9 `com.gams.api.GAMSGlobals.SolveStat.SKIPPED` =(12)

= 12, Solve skipped

4.14.3.10 `com.gams.api.GAMSGlobals.SolveStat.SOLVER` =(4)

= 4, Solver quit with a problem

4.14.3.11 `com.gams.api.GAMSGlobals.SolveStat.SOLVER_ERR` =(10)

= 10, Solver terminated with error

4.14.3.12 `com.gams.api.GAMSGlobals.SolveStat.SYSTEM_ERR` =(13)

= 13, Other error

4.14.3.13 `com.gams.api.GAMSGlobals.SolveStat.UNDEFINED_STAT` =(14)

= 14, Undefined condition

4.14.3.14 `com.gams.api.GAMSGlobals.SolveStat.USER` =(8)

= 8, Solver terminated on users request (e.g.
Ctrl-C)

4.15 `com.gams.api.GAMSGlobals.SpecialValues` Enum Reference

Special GAMS Values.

Public Member Functions

- double [value](#) ()
Get the double value of this enumerated [SpecialValues](#).
- **SpecialValues** (double val)

Static Public Member Functions

- static double[] [doubleValues](#) ()
Get all enumerated SepcialValues used by GAMS API.
- static [SpecialValues lookup](#) (double val)
Lookup all special values used by GAMS API.

Public Attributes

- [UNDEFINED](#) =(1.0E300)
= 1.0E300, undefined
- [NAN](#) =(2.0E300)
= 2.0E300, not available/applicable
- [PLUS_INF](#) =(3.0E300)
= 3.0E300, plus infinity
- [MINUS_INF](#) =(4.0E300)
= 4.0E300, minus infinity
- [EPS](#) =(5.0E300)
= 5.0E300, epsilon
- [ACRONYM](#) =(10.0E300)
= 10.0E300, potential/real acronym
- [UNDEFINED_VALUE](#) =(0.0)
Undefined value.

4.15.1 Detailed Description

Special GAMS Values.

4.15.2 Member Function Documentation

4.15.2.1 static double [] com.gams.api.GAMSGlobals.SpecialValues.doubleValues () [static]

Get all enumerated SepcialValues used by GAMS API.

Returns

the array containing double values of all [SpecialValues](#)

4.15.2.2 static SpecialValues com.gams.api.GAMSGlobals.SpecialValues.lookup (double val) [static]

Lookup all special values used by GAMS API.

Parameters

<i>val</i>	a value to lookup
------------	-------------------

Returns

the enumerated [SpecialValues](#) that has the specified value, or UNDEFINED_VALUE if the specified value is not found.

4.15.2.3 double com.gams.api.GAMSGlobals.SpecialValues.value ()

Get the double value of this enumerated [SpecialValues](#).

Returns

the double value of the [SpecialValues](#)

4.15.3 Member Data Documentation**4.15.3.1 com.gams.api.GAMSGlobals.SpecialValues.ACRONYM =(10.0E300)**

= 10.0E300, potential/real acronym

4.15.3.2 com.gams.api.GAMSGlobals.SpecialValues.EPS =(5.0E300)

= 5.0E300, epsilon

4.15.3.3 com.gams.api.GAMSGlobals.SpecialValues.MINUS_INF =(4.0E300)

= 4.0E300, minus infinity

4.15.3.4 com.gams.api.GAMSGlobals.SpecialValues.NAN =(2.0E300)

= 2.0E300, not available/applicable

4.15.3.5 com.gams.api.GAMSGlobals.SpecialValues.PLUS_INF =(3.0E300)

= 3.0E300, plus infinity

4.15.3.6 com.gams.api.GAMSGlobals.SpecialValues.UNDEFINED =(1.0E300)

= 1.0E300, undefined

4.15.3.7 com.gams.api.GAMSGlobals.SpecialValues.UNDEFINED_VALUE =(0.0)

Undefined value.

4.16 com.gams.api.GAMSGlobals.UpdateAction Enum Reference

What field to update.

Public Member Functions

- `int value ()`
Get the int value of this enumerated [UpdateAction](#).
- **UpdateAction** (int val)

Static Public Member Functions

- static [UpdateAction lookup](#) (int val)
Lookup all update actions used by GAMS.

Public Attributes

- [UPPER](#) =(1)
= 1, Supplies upper bounds for a variable
- [LOWER](#) =(2)
= 2, Supplies lower bounds for a variable
- [FIXED](#) =(3)
= 3, Supplies fixed bounds for a variable
- [PRIMAL](#) =(4)
= 4, Supplies level for a variable or equation
- [DUAL](#) =(5)
= 5, Supplies marginal for a variable or equation
- [UNDEFINED_ACTION](#) =(6)
= 6, Undefined action

4.16.1 Detailed Description

What field to update.

4.16.2 Member Function Documentation

4.16.2.1 static [UpdateAction com.gams.api.GAMSGlobals.UpdateAction.lookup \(int val \)](#) [static]

Lookup all update actions used by GAMS.

Parameters

<code>val</code>	an int value to lookup
------------------	------------------------

Returns

the enumerated [UpdateAction](#) that has the specified value, or `UNDEFINED_ACTION` if the specified value is not found.

4.16.2.2 `int com.gams.api.GAMSGlobals.UpdateAction.value ()`

Get the int value of this enumerated [UpdateAction](#).

Returns

the int value of the [UpdateAction](#)

4.16.3 Member Data Documentation

4.16.3.1 `com.gams.api.GAMSGlobals.UpdateAction.DUAL` =(5)

= 5, Supplies marginal for a variable or equation

4.16.3.2 `com.gams.api.GAMSGlobals.UpdateAction.FIXED` =(3)

= 3, Supplies fixed bounds for a variable

4.16.3.3 `com.gams.api.GAMSGlobals.UpdateAction.LOWER` =(2)

= 2, Supplies lower bounds for a variable

4.16.3.4 `com.gams.api.GAMSGlobals.UpdateAction.PRIMAL` =(4)

= 4, Supplies level for a variable or equation

4.16.3.5 `com.gams.api.GAMSGlobals.UpdateAction.UNDEFINED_ACTION` =(6)

= 6, Undefined action

4.16.3.6 `com.gams.api.GAMSGlobals.UpdateAction.UPPER` =(1)

= 1, Supplies upper bounds for a variable

4.17 `com.gams.api.GAMSGlobals.VarType` Enum Reference

Variable SubType.

Public Member Functions

- `int value ()`
Get the int value of this enumerated `VarType`.

Static Public Member Functions

- `static VarType lookup (int value)`
Lookup all variable subtypes used by GAMS.

Public Attributes

- `UNKNOWN`
Unknown variable type.
- `BINARY`
Binary variable.
- `INTEGER`
Integer Variable.
- `POSITIVE`

- [NEGATIVE](#)
Positive variable.
- [FREE](#)
Negative variable.
- [SOS1](#)
Free variable.
- [SOS2](#)
Special Ordered Set 1.
- [SEMICONT](#)
Special Ordered Set 2.
- [SEMIINT](#)
Semi-continuous variable.
- [SEMIINT](#)
Semi-integer variable.

4.17.1 Detailed Description

Variable SubType.

4.17.2 Member Function Documentation

4.17.2.1 `static VarType com.gams.api.GAMSGlobals.VarType.lookup (int value) [static]`

Lookup all variable subtypes used by GAMS.

Parameters

<i>value</i>	an int value to lookup
--------------	------------------------

Returns

the enumerated [VarType](#) that has the specified value, or UNDEFINED_TYPE if the specified value is not found.

4.17.2.2 `int com.gams.api.GAMSGlobals.VarType.value ()`

Get the int value of this enumerated [VarType](#).

Returns

the int value of the [VarType](#)

4.17.3 Member Data Documentation

4.17.3.1 `com.gams.api.GAMSGlobals.VarType.BINARY`

Binary variable.

4.17.3.2 `com.gams.api.GAMSGlobals.VarType.FREE`

Free variable.

4.17.3.3 `com.gams.api.GAMSGlobals.VarType.INTEGER`

Integer Variable.

4.17.3.4 `com.gams.api.GAMSGlobals.VarType.NEGATIVE`

Negative variable.

4.17.3.5 `com.gams.api.GAMSGlobals.VarType.POSITIVE`

Positive variable.

4.17.3.6 `com.gams.api.GAMSGlobals.VarType.SEMICONT`

Semi-continuous variable.

4.17.3.7 `com.gams.api.GAMSGlobals.VarType.SEMIINT`

Semi-integer variable.

4.17.3.8 `com.gams.api.GAMSGlobals.VarType.SOS1`

Special Ordered Set 1.

4.17.3.9 `com.gams.api.GAMSGlobals.VarType.SOS2`

Special Ordered Set 2.

4.17.3.10 `com.gams.api.GAMSGlobals.VarType.UNKNOWN`

Unknown variable type.

4.18 `com.gams.api.GAMSJob` Class Reference

Public Member Functions

- [GAMSDatabase OutDB \(\)](#)
Retrieve [GAMSDatabase](#) created by Run method.
- String [getJobName \(\)](#)
Retrieve the name of [GAMSJob](#).
- String [getFileName \(\)](#)
Retrieve the file name associated to [GAMSJob](#).
- void [run \(\)](#)
Run [GAMSJob](#).
- void [run \(GAMSOPTIONS options\)](#)
Run [GAMSJob](#).
- void [run \(GAMSCheckpoint checkpoint\)](#)
Run [GAMSJob](#).
- void [run \(PrintStream output\)](#)

- Run GAMSJob.*
- void [run](#) (boolean createOutDB)
 - Run GAMSJob.*
- void [run](#) ([GAMSDatabase](#) db)
 - Run GAMSJob.*
- void [run](#) ([GAMSDatabase](#)[] databases)
 - Run GAMSJob.*
- void [run](#) ([GAMSOPTIONS](#) options, [GAMSCheckpoint](#) checkpoint)
 - Run GAMSJob.*
- void [run](#) ([GAMSOPTIONS](#) options, [PrintStream](#) output)
 - Run GAMSJob.*
- void [run](#) ([GAMSOPTIONS](#) options, boolean createOutDB)
 - Run GAMSJob.*
- void [run](#) ([GAMSOPTIONS](#) options, [GAMSDatabase](#) db)
 - Run GAMSJob.*
- void [run](#) ([GAMSOPTIONS](#) options, [GAMSDatabase](#)[] databases)
 - Run GAMSJob.*
- void [run](#) ([GAMSOPTIONS](#) options, [GAMSCheckpoint](#) checkpoint, [PrintStream](#) output)
 - Run GAMSJob.*
- void [run](#) ([GAMSOPTIONS](#) options, [GAMSCheckpoint](#) checkpoint, boolean createOutDB)
 - Run GAMSJob.*
- void [run](#) ([GAMSOPTIONS](#) options, [GAMSCheckpoint](#) checkpoint, [GAMSDatabase](#) db)
 - Run GAMSJob.*
- void [run](#) ([GAMSOPTIONS](#) options, [GAMSCheckpoint](#) checkpoint, [GAMSDatabase](#)[] databases)
 - Run GAMSJob.*
- void [run](#) ([GAMSOPTIONS](#) options, [PrintStream](#) output, boolean createOutDB)
 - Run GAMSJob.*
- void [run](#) ([GAMSOPTIONS](#) options, [PrintStream](#) output, [GAMSDatabase](#) db)
 - Run GAMSJob.*
- void [run](#) ([GAMSOPTIONS](#) options, [PrintStream](#) output, [GAMSDatabase](#)[] databases)
 - Run GAMSJob.*
- void [run](#) ([GAMSOPTIONS](#) options, boolean createOutDB, [GAMSDatabase](#) db)
 - Run GAMSJob.*
- void [run](#) ([GAMSOPTIONS](#) options, boolean createOutDB, [GAMSDatabase](#)[] databases)
 - Run GAMSJob.*
- void [run](#) ([GAMSOPTIONS](#) options, [GAMSCheckpoint](#) checkpoint, boolean createOutDB, [GAMSDatabase](#) db)
 - Run GAMSJob.*
- void [run](#) ([GAMSOPTIONS](#) options, [GAMSCheckpoint](#) checkpoint, boolean createOutDB, [GAMSDatabase](#)[] databases)
 - Run GAMSJob.*
- void [run](#) ([GAMSOPTIONS](#) options, [PrintStream](#) output, boolean createOutDB, [GAMSDatabase](#) db)
 - Run GAMSJob.*
- void [run](#) ([GAMSOPTIONS](#) options, [PrintStream](#) output, boolean createOutDB, [GAMSDatabase](#)[] databases)
 - Run GAMSJob.*
- void [run](#) ([GAMSOPTIONS](#) options, [GAMSCheckpoint](#) checkpoint, [PrintStream](#) output, boolean createOutDB, [GAMSDatabase](#) db)
 - Run GAMSJob.*
- void [run](#) ([GAMSOPTIONS](#) options, [GAMSCheckpoint](#) checkpoint, [PrintStream](#) output, boolean createOutDB, [GAMSDatabase](#)[] databases)
 - Run GAMSJob.*
- void [run](#) ([GAMSCheckpoint](#) checkpoint, [PrintStream](#) output)

- Run GAMSJob.*
 - void [run](#) ([GAMSCheckpoint](#) checkpoint, boolean createOutDB)
 - Run GAMSJob.*
 - void [run](#) ([GAMSCheckpoint](#) checkpoint, [GAMSDatabase](#) db)
 - Run GAMSJob.*
 - void [run](#) ([GAMSCheckpoint](#) checkpoint, [GAMSDatabase](#)[] databases)
 - Run GAMSJob.*
 - void [run](#) ([GAMSCheckpoint](#) checkpoint, [PrintStream](#) output, [GAMSDatabase](#) db)
 - Run GAMSJob.*
 - void [run](#) ([GAMSCheckpoint](#) checkpoint, [PrintStream](#) output, [GAMSDatabase](#)[] databases)
 - Run GAMSJob.*
 - void [run](#) ([GAMSCheckpoint](#) checkpoint, boolean createOutDB, [GAMSDatabase](#) db)
 - Run GAMSJob.*
 - void [run](#) ([GAMSCheckpoint](#) checkpoint, boolean createOutDB, [GAMSDatabase](#)[] databases)
 - Run GAMSJob.*
 - void [run](#) ([GAMSCheckpoint](#) checkpoint, [PrintStream](#) output, boolean createOutDB, [GAMSDatabase](#) db)
 - Run GAMSJob.*
 - void [run](#) ([GAMSCheckpoint](#) checkpoint, [PrintStream](#) output, boolean createOutDB, [GAMSDatabase](#)[] databases)
 - Run GAMSJob.*
 - void [run](#) ([PrintStream](#) output, boolean createOutDB)
 - Run GAMSJob.*
 - void [run](#) ([PrintStream](#) output, [GAMSDatabase](#) db)
 - Run GAMSJob.*
 - void [run](#) ([PrintStream](#) output, [GAMSDatabase](#)[] databases)
 - Run GAMSJob.*
 - void [run](#) ([PrintStream](#) output, boolean createOutDB, [GAMSDatabase](#) db)
 - Run GAMSJob.*
 - void [run](#) ([PrintStream](#) output, boolean createOutDB, [GAMSDatabase](#)[] databases)
 - Run GAMSJob.*
 - void [run](#) (boolean createOutDB, [GAMSDatabase](#) db)
 - Run GAMSJob.*
 - void [run](#) (boolean createOutDB, [GAMSDatabase](#)[] databases)
 - Run GAMSJob.*
 - boolean [interrupt](#) ()
- Send interrupt message to GAMS during [GAMSJob](#) instance executes its run method.*

4.18.1 Detailed Description

An instance of [GAMSJob](#) manages the execution of a GAMS program given by GAMS model source. The GAMS source (or more precisely the root of a model source tree) of the job can be provided as a string or by a filename (relative to the working directory of the [GAMSWorkspace](#)) of a text file containing the GAMS model source. The run method organizes the export of the input [GAMSDatabases](#), calls the GAMS compiler and execution system with the supplied options and on successful completion provides through the property OutDB (of type [GAMSDatabase](#)) the results of the model run.

While the result data is captured in a [GAMSDatabase](#), the run method can also create a [GAMSCheckpoint](#) that not only captures data but represents the state of the entire [GAMSJob](#) and allows some other [GAMSJob](#) to continue from this state. In case of a compilation or execution error, the run method will throw an exception. If the log output of GAMS is of interest, this can be captured by providing a Java [PrintStream](#) instance.

A [GAMSJob](#) is connected to external resources and needs to be properly disposed before the Java garbage collector can claim the instance.

4.18.2 Member Function Documentation

4.18.2.1 String com.gams.api.GAMSJob.getFileName ()

Retrieve the file name associated to [GAMSJob](#).

Returns

String described the file name of [GAMSJob](#)

4.18.2.2 String com.gams.api.GAMSJob.getJobName ()

Retrieve the name of [GAMSJob](#).

Returns

String described the name of [GAMSJob](#)

4.18.2.3 boolean com.gams.api.GAMSJob.interrupt ()

Send interrupt message to GAMS during [GAMSJob](#) instance executes its run method.

This method is useful for interrupting the long running [GAMSJob](#).

Returns

true if GAMS has acknowledged an interrupt message, false otherwise.

4.18.2.4 GAMSDatabase com.gams.api.GAMSJob.OutDB ()

Retrieve [GAMSDatabase](#) created by Run method.

Returns

Reference to GAMSDatabase instance

4.18.2.5 void com.gams.api.GAMSJob.run ()

Run [GAMSJob](#).

Exceptions

GAMSException	If GAMSJob instance could not be successfully executed
GAMSExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.6 void com.gams.api.GAMSJob.run (GAMSOptions options)

Run [GAMSJob](#).

Parameters

<i>options</i>	GAMS options to control job
----------------	-----------------------------

Exceptions

GAMSEException	If GAMSJob instance could not be successfully executed
GAMSEExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.7 void com.gams.api.GAMSJob.run ([GAMSCheckpoint](#) *checkpoint*)

Run [GAMSJob](#).

Parameters

<i>checkpoint</i>	GAMSCheckpoint to be created by GAMSJob
-------------------	-------------------------------------------------------------------------

Exceptions

GAMSEException	If GAMSJob instance could not be successfully executed
GAMSEExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.8 void com.gams.api.GAMSJob.run ([PrintStream](#) *output*)

Run [GAMSJob](#).

Parameters

<i>output</i>	Stream to capture GAMS log
---------------	----------------------------

Exceptions

GAMSEException	If GAMSJob instance could not be successfully executed
GAMSEExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.9 void com.gams.api.GAMSJob.run (boolean *createOutDB*)

Run [GAMSJob](#).

Parameters

<i>createOutDB</i>	Flag determined if OutDB should be created
--------------------	--------------------------------------------

Exceptions

GAMSEException	If GAMSJob instance could not be successfully executed
GAMSExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.10 void com.gams.api.GAMSJob.run ([GAMSDatabase](#) *db*)

Run [GAMSJob](#).

Parameters

<i>db</i>	a GAMSDatabase instance
-----------	-----------------------------------------

Exceptions

GAMSEException	If GAMSJob instance could not be successfully executed
GAMSExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.11 void com.gams.api.GAMSJob.run ([GAMSDatabase](#)[] *databases*)

Run [GAMSJob](#).

Parameters

<i>databases</i>	a list of GAMS databases
------------------	--------------------------

Exceptions

GAMSEException	If GAMSJob instance could not be successfully executed
GAMSExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.12 void com.gams.api.GAMSJob.run ([GAMSOPTIONS](#) *options*, [GAMSCheckpoint](#) *checkpoint*)

Run [GAMSJob](#).

Parameters

<i>options</i>	GAMS options to control job
<i>checkpoint</i>	GAMSCheckpoint to be created by GAMSJob

Exceptions

GAMSException	If GAMSJob instance could not be successfully executed
GAMSExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.13 void com.gams.api.GAMSJob.run ([GAMSOptions](#) *options*, [PrintStream](#) *output*)

Run [GAMSJob](#).

Parameters

<i>options</i>	GAMS options to control job
<i>output</i>	Stream to capture GAMS log

Exceptions

GAMSException	If GAMSJob instance could not be successfully executed
GAMSExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.14 void com.gams.api.GAMSJob.run ([GAMSOptions](#) *options*, boolean *createOutDB*)

Run [GAMSJob](#).

Parameters

<i>options</i>	GAMS options to control job
<i>createOutDB</i>	Flag determined if OutDB should be created

Exceptions

GAMSException	If GAMSJob instance could not be successfully executed
GAMSExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.15 void com.gams.api.GAMSJob.run ([GAMSOptions](#) *options*, [GAMSDatabase](#) *db*)

Run [GAMSJob](#).

Parameters

<i>options</i>	GAMS options to control job
<i>db</i>	a GAMSDatabase instance

Exceptions

GAMSEException	If GAMSJob instance could not be successfully executed
GAMSExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.16 void com.gams.api.GAMSJob.run ([GAMSOptions](#) *options*, [GAMSDatabase](#)[] *databases*)

Run [GAMSJob](#).

Parameters

<i>options</i>	GAMS options to control job
<i>databases</i>	a list of GAMS databases

Exceptions

GAMSEException	If GAMSJob instance could not be successfully executed
GAMSExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.17 void com.gams.api.GAMSJob.run ([GAMSOptions](#) *options*, [GAMSCheckpoint](#) *checkpoint*, [PrintStream](#) *output*)

Run [GAMSJob](#).

Parameters

<i>options</i>	GAMS options to control job
<i>checkpoint</i>	GAMSCheckpoint to be created by GAMSJob
<i>output</i>	Stream to capture GAMS log

Exceptions

GAMSEException	If GAMSJob instance could not be successfully executed
GAMSExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.18 void com.gams.api.GAMSJob.run ([GAMSOptions](#) *options*, [GAMSCheckpoint](#) *checkpoint*, boolean *createOutDB*)

Run [GAMSJob](#).

Parameters

<i>options</i>	GAMS options to control job
<i>checkpoint</i>	GAMSCheckpoint to be created by GAMSJob
<i>createOutDB</i>	Flag determined if OutDB should be created

Exceptions

GAMSEException	If GAMSJob instance could not be successfully executed
GAMSEExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.19 void com.gams.api.GAMSJob.run ([GAMSOPTIONS](#) *options*, [GAMSCheckpoint](#) *checkpoint*, [GAMSDatabase](#) *db*)

Run [GAMSJob](#).

Parameters

<i>options</i>	GAMS options to control job
<i>checkpoint</i>	GAMSCheckpoint to be created by GAMSJob
<i>db</i>	a GAMSDatabase instance

Exceptions

GAMSEException	If GAMSJob instance could not be successfully executed
GAMSEExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.20 void com.gams.api.GAMSJob.run ([GAMSOPTIONS](#) *options*, [GAMSCheckpoint](#) *checkpoint*, [GAMSDatabase](#)[] *databases*)

Run [GAMSJob](#).

Parameters

<i>options</i>	GAMS options to control job
<i>checkpoint</i>	GAMSCheckpoint to be created by GAMSJob
<i>databases</i>	a list of GAMS databases

Exceptions

GAMSEException	If GAMSJob instance could not be successfully executed
GAMSEExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.21 void com.gams.api.GAMSJob.run (**GAMSOptions** *options*, **PrintStream** *output*, boolean *createOutDB*)

Run [GAMSJob](#).

Parameters

<i>options</i>	GAMS options to control job
<i>output</i>	Stream to capture GAMS log
<i>createOutDB</i>	Flag determined if OutDB should be created

Exceptions

GAMSEException	If GAMSJob instance could not be successfully executed
GAMSEExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.22 void com.gams.api.GAMSJob.run (**GAMSOptions** *options*, **PrintStream** *output*, **GAMSDatabase** *db*)

Run [GAMSJob](#).

Parameters

<i>options</i>	GAMS options to control job
<i>output</i>	GAMSCheckpoint to be created by GAMSJob
<i>db</i>	a GAMSDatabase instance

Exceptions

GAMSEException	If GAMSJob instance could not be successfully executed
GAMSEExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.23 void com.gams.api.GAMSJob.run (**GAMSOptions** *options*, **PrintStream** *output*, **GAMSDatabase**[] *databases*)

Run [GAMSJob](#).

Parameters

<i>options</i>	GAMS options to control job
<i>output</i>	GAMSCheckpoint to be created by GAMSJob
<i>databases</i>	a list of GAMS databases

Exceptions

GAMSEException	If GAMSJob instance could not be successfully executed
GAMSEExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.24 void com.gams.api.GAMSJob.run (**GAMSOptions** *options*, boolean *createOutDB*, **GAMSDatabase** *db*)

Run [GAMSJob](#).

Parameters

<i>options</i>	GAMS options to control job
<i>createOutDB</i>	Flag determined if OutDB should be created
<i>db</i>	a GAMSDatabase instance

Exceptions

GAMSEException	If GAMSJob instance could not be successfully executed
GAMSEExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.25 void com.gams.api.GAMSJob.run (**GAMSOptions** *options*, boolean *createOutDB*, **GAMSDatabase**[] *databases*)

Run [GAMSJob](#).

Parameters

<i>options</i>	GAMS options to control job
<i>createOutDB</i>	Flag determined if OutDB should be created
<i>databases</i>	a list of GAMS databases

Exceptions

GAMSEException	If GAMSJob instance could not be successfully executed
GAMSEExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.26 void com.gams.api.GAMSJob.run (**GAMSOptions** *options*, **GAMSCheckpoint** *checkpoint*, boolean *createOutDB*, **GAMSDatabase** *db*)

Run [GAMSJob](#).

Parameters

<i>options</i>	GAMS options to control job
<i>checkpoint</i>	GAMSCheckpoint to be created by GAMSJob
<i>createOutDB</i>	Flag determined if OutDB should be created
<i>db</i>	a GAMSDatabase instance

Exceptions

GAMSException	If GAMSJob instance could not be successfully executed
GAMSExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.27 void com.gams.api.GAMSJob.run ([GAMSOptions](#) *options*, [GAMSCheckpoint](#) *checkpoint*, boolean *createOutDB*, [GAMSDatabase](#)[] *databases*)

Run [GAMSJob](#).

Parameters

<i>options</i>	GAMS options to control job
<i>checkpoint</i>	GAMSCheckpoint to be created by GAMSJob
<i>createOutDB</i>	Flag determined if OutDB should be created
<i>databases</i>	a list of GAMS databases

Exceptions

GAMSException	If GAMSJob instance could not be successfully executed
GAMSExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.28 void com.gams.api.GAMSJob.run ([GAMSOptions](#) *options*, [PrintStream](#) *output*, boolean *createOutDB*, [GAMSDatabase](#) *db*)

Run [GAMSJob](#).

Parameters

<i>options</i>	GAMS options to control job
<i>output</i>	Stream to capture GAMS log
<i>createOutDB</i>	Flag determined if OutDB should be created
<i>db</i>	a GAMSDatabase instance

Exceptions

GAMSException	If GAMSJob instance could not be successfully executed
GAMSExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.29 void com.gams.api.GAMSJob.run (**GAMSOptions** *options*, **PrintStream** *output*, boolean *createOutDB*, **GAMSDatabase**[] *databases*)

Run [GAMSJob](#).

Parameters

<i>options</i>	GAMS options to control job
<i>output</i>	Stream to capture GAMS log
<i>createOutDB</i>	Flag determined if OutDB should be created
<i>databases</i>	a list of GAMS databases

Exceptions

GAMSEException	If GAMSJob instance could not be successfully executed
GAMSEExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.30 void com.gams.api.GAMSJob.run (**GAMSOptions** *options*, **GAMSCheckpoint** *checkpoint*, **PrintStream** *output*, boolean *createOutDB*, **GAMSDatabase** *db*)

Run [GAMSJob](#).

Parameters

<i>options</i>	GAMS options to control job
<i>checkpoint</i>	GAMSCheckpoint to be created by GAMSJob
<i>output</i>	Stream to capture GAMS log
<i>createOutDB</i>	Flag determined if OutDB should be created
<i>db</i>	a GAMSDatabase instance

Exceptions

GAMSEException	If GAMSJob instance could not be successfully executed
GAMSEExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.31 void com.gams.api.GAMSJob.run (**GAMSOptions** *options*, **GAMSCheckpoint** *checkpoint*, **PrintStream** *output*, boolean *createOutDB*, **GAMSDatabase**[] *databases*)

Run [GAMSJob](#).

Parameters

<i>options</i>	GAMS options to control job
<i>checkpoint</i>	GAMSCheckpoint to be created by GAMSJob
<i>output</i>	Stream to capture GAMS log
<i>createOutDB</i>	Flag determined if OutDB should be created
<i>databases</i>	a list of GAMS databases read by GAMSJob

Exceptions

GAMSEException	If GAMSJob instance could not be successfully executed
GAMSEExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.32 void com.gams.api.GAMSJob.run ([GAMSCheckpoint](#) *checkpoint*, [PrintStream](#) *output*)

Run [GAMSJob](#).

Parameters

<i>checkpoint</i>	GAMSCheckpoint to be created by GAMSJob
<i>output</i>	Stream to capture GAMS log

Exceptions

GAMSEException	If GAMSJob instance could not be successfully executed
GAMSEExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.33 void com.gams.api.GAMSJob.run ([GAMSCheckpoint](#) *checkpoint*, boolean *createOutDB*)

Run [GAMSJob](#).

Parameters

<i>checkpoint</i>	GAMSCheckpoint to be created by GAMSJob
<i>createOutDB</i>	Flag determined if OutDB should be created

Exceptions

GAMSEException	If GAMSJob instance could not be successfully executed
GAMSEExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.34 void com.gams.api.GAMSJob.run ([GAMSCheckpoint](#) *checkpoint*, [GAMSDatabase](#) *db*)

Run [GAMSJob](#).

Parameters

<i>checkpoint</i>	GAMSCheckpoint to be created by GAMSJob
<i>db</i>	a GAMSDatabase instance

Exceptions

GAMSEException	If GAMSJob instance could not be successfully executed
GAMSExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.35 void com.gams.api.GAMSJob.run ([GAMSCheckpoint](#) *checkpoint*, [GAMSDatabase](#)[] *databases*)

Run [GAMSJob](#).

Parameters

<i>checkpoint</i>	GAMSCheckpoint to be created by GAMSJob
<i>databases</i>	a list of GAMS databases read by GAMSJob

Exceptions

GAMSEException	If GAMSJob instance could not be successfully executed
GAMSExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.36 void com.gams.api.GAMSJob.run ([GAMSCheckpoint](#) *checkpoint*, [PrintStream](#) *output*, [GAMSDatabase](#) *db*)

Run [GAMSJob](#).

Parameters

<i>checkpoint</i>	GAMSCheckpoint to be created by GAMSJob
<i>output</i>	Stream to capture GAMS log
<i>db</i>	a GAMSDatabase instance

Exceptions

GAMSEException	If GAMSJob instance could not be successfully executed
GAMSExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.37 void com.gams.api.GAMSJob.run ([GAMSCheckpoint](#) *checkpoint*, [PrintStream](#) *output*, [GAMSDatabase](#)[] *databases*)

Run [GAMSJob](#).

Parameters

<i>checkpoint</i>	GAMSCheckpoint to be created by GAMSJob
<i>output</i>	Stream to capture GAMS log
<i>databases</i>	a list of GAMS databases read by GAMSJob

Exceptions

GAMSEException	If GAMSJob instance could not be successfully executed
GAMSEExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.38 void com.gams.api.GAMSJob.run ([GAMSCheckpoint](#) *checkpoint*, boolean *createOutDB*, [GAMSDatabase](#) *db*)

Run [GAMSJob](#).

Parameters

<i>checkpoint</i>	GAMSCheckpoint to be created by GAMSJob
<i>createOutDB</i>	Flag determined if OutDB should be created
<i>db</i>	a GAMSDatabase instance

Exceptions

GAMSEException	If GAMSJob instance could not be successfully executed
GAMSEExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.39 void com.gams.api.GAMSJob.run ([GAMSCheckpoint](#) *checkpoint*, boolean *createOutDB*, [GAMSDatabase](#)[] *databases*)

Run [GAMSJob](#).

Parameters

<i>checkpoint</i>	GAMSCheckpoint to be created by GAMSJob
<i>createOutDB</i>	Flag determined if OutDB should be created
<i>databases</i>	a list of GAMS databases read by GAMSJob

Exceptions

GAMSEException	If GAMSJob instance could not be successfully executed
GAMSEExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.40 void com.gams.api.GAMSJob.run ([GAMSCheckpoint](#) *checkpoint*, [PrintStream](#) *output*, boolean *createOutDB*, [GAMSDatabase](#) *db*)

Run [GAMSJob](#).

Parameters

<i>checkpoint</i>	GAMSCheckpoint to be created by GAMSJob
<i>output</i>	Stream to capture GAMS log
<i>createOutDB</i>	Flag determined if OutDB should be created
<i>db</i>	a GAMSDatabase instance

Exceptions

GAMSEException	If GAMSJob instance could not be successfully executed
GAMSExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.41 void com.gams.api.GAMSJob.run ([GAMSCheckpoint](#) *checkpoint*, [PrintStream](#) *output*, boolean *createOutDB*, [GAMSDatabase](#)[] *databases*)

Run [GAMSJob](#).

Parameters

<i>checkpoint</i>	GAMSCheckpoint to be created by GAMSJob
<i>output</i>	Stream to capture GAMS log
<i>createOutDB</i>	Flag determined if OutDB should be created
<i>databases</i>	a list of GAMS databases

Exceptions

GAMSEException	If GAMSJob instance could not be successfully executed
GAMSExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.42 void com.gams.api.GAMSJob.run ([PrintStream](#) *output*, boolean *createOutDB*)

Run [GAMSJob](#).

Parameters

<i>output</i>	Stream to capture GAMS log
<i>createOutDB</i>	Flag determined if OutDB should be created

Exceptions

GAMSException	If GAMSJob instance could not be successfully executed
GAMSExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.43 void com.gams.api.GAMSJob.run (*PrintStream output*, *GAMSDatabase db*)

Run [GAMSJob](#).

Parameters

<i>output</i>	Stream to capture GAMS log
<i>db</i>	a GAMSDatabase instance

Exceptions

GAMSException	If GAMSJob instance could not be successfully executed
GAMSExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.44 void com.gams.api.GAMSJob.run (*PrintStream output*, *GAMSDatabase[] databases*)

Run [GAMSJob](#).

Parameters

<i>output</i>	Stream to capture GAMS log
<i>databases</i>	a list of GAMS databases read by GAMSJob

Exceptions

GAMSException	If GAMSJob instance could not be successfully executed
GAMSExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.45 void com.gams.api.GAMSJob.run (*PrintStream output*, boolean *createOutDB*, *GAMSDatabase db*)

Run [GAMSJob](#).

Parameters

<i>output</i>	Stream to capture GAMS log
<i>createOutDB</i>	Flag determined if OutDB should be created
<i>db</i>	a GAMSDatabase instance

Exceptions

GAMSEException	If GAMSJob instance could not be successfully executed
GAMSExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.46 void com.gams.api.GAMSJob.run (*PrintStream output*, boolean *createOutDB*, [GAMSDatabase\[\] databases](#))

Run [GAMSJob](#).

Parameters

<i>output</i>	Stream to capture GAMS log
<i>createOutDB</i>	Flag determined if OutDB should be created
<i>databases</i>	a list of GAMS databases read by GAMSJob

Exceptions

GAMSEException	If GAMSJob instance could not be successfully executed
GAMSExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.47 void com.gams.api.GAMSJob.run (boolean *createOutDB*, [GAMSDatabase db](#))

Run [GAMSJob](#).

Parameters

<i>createOutDB</i>	Flag determined if OutDB should be created
<i>db</i>	a GAMSDatabase instance

Exceptions

GAMSEException	If GAMSJob instance could not be successfully executed
GAMSExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.18.2.48 void com.gams.api.GAMSJob.run (boolean *createOutDB*, [GAMSDatabase\[\] databases](#))

Run [GAMSJob](#).

Parameters

<i>createOutDB</i>	Flag determined if OutDB should be created
<i>databases</i>	a list of GAMS databases

Exceptions

GAMSException	If GAMSJob instance could not be successfully executed
GAMSExecutionException	If GAMSJob has been executed and terminated with an error (exit code != 0)

See Also

[GAMSGlobals.ExitCodeMessage](#)

4.19 com.gams.api.GAMSModelInstance Class Reference

Classes

- enum [SymbolUpdateType](#)
Symbol update type.

Public Member Functions

- void [instantiate](#) (String modelDefinition)
Instantiate the [GAMSModelInstance](#).
- void [instantiate](#) ([GAMSOptions](#) options)
Instantiate the [GAMSModelInstance](#).
- void [instantiate](#) ([GAMSModifier](#) modifier)
Instantiate the [GAMSModelInstance](#).
- void [instantiate](#) ([GAMSModifier](#)[] modifiers)
Instantiate the [GAMSModelInstance](#).
- void [instantiate](#) (String modelDefinition, [GAMSOptions](#) options)
Instantiate the [GAMSModelInstance](#).
- void [instantiate](#) (String modelDefinition, [GAMSModifier](#) modifier)
Instantiate the [GAMSModelInstance](#).
- void [instantiate](#) (String modelDefinition, [GAMSModifier](#)[] modifiers)
Instantiate the [GAMSModelInstance](#).
- void [instantiate](#) ([GAMSOptions](#) options, [GAMSModifier](#) modifier)
Instantiate the [GAMSModelInstance](#).
- void [instantiate](#) ([GAMSOptions](#) options, [GAMSModifier](#)[] modifiers)
Instantiate the [GAMSModelInstance](#).
- void [instantiate](#) (String modelDefinition, [GAMSOptions](#) options, [GAMSModifier](#) modifier)
Instantiate the [GAMSModelInstance](#).
- void [instantiate](#) (String modelDefinition, [GAMSOptions](#) options, [GAMSModifier](#)[] modifiers)
Instantiate the [GAMSModelInstance](#).
- void [solve](#) ()
Solve model instance.
- void [solve](#) ([SymbolUpdateType](#) updateType)
Solve model instance.
- void [solve](#) (PrintStream output)
Solve model instance.
- void [solve](#) ([GAMSModelInstanceOpt](#) miOpt)
Solve model instance.
- void [solve](#) ([SymbolUpdateType](#) updateType, PrintStream output)
Solve model instance.
- void [solve](#) ([SymbolUpdateType](#) updateType, [GAMSModelInstanceOpt](#) miOpt)

- Solve model instance.*
- void [solve](#) (PrintStream output, [GAMSModelInstanceOpt](#) miOpt)
- Solve model instance.*
- void [solve](#) ([SymbolUpdateType](#) updateType, PrintStream output, [GAMSModelInstanceOpt](#) miOpt)
- Solve model instance.*
- String [getName](#) ()
- Retrieve [GAMSCheckpoint](#) Retrieve name of [GAMSModelInstance](#).*
- [GAMSDatabase SyncDB](#) ()
- Retrieve [GAMSDatabase](#) used to synchronize modifiable data.*
- [GAMSGlobals.ModelStat](#) [getModelStatus](#) ()
- Status of the model.*
- [GAMSGlobals.SolveStat](#) [getSolveStatus](#) ()
- Solve status of the model (available after a solve).*
- void [dispose](#) ()
- Free unmanaged resources.*

Protected Member Functions

- void [finalize](#) ()
- Destructor.*

4.19.1 Detailed Description

A [GAMSJob](#) is the standard way of dealing with a GAMS model and the corresponding solution provided by a solver. The GAMS language provides programming flow that allows to solve models in a loop and do other sophisticated tasks, like building decomposition algorithms.

In rare cases, the GAMS model generation time dominates the solver solution time and GAMS itself becomes the bottleneck in an optimization application. For a model instances which is a single mathematical model generated by a GAMS solve statement, the [GAMSModelInstance](#) class provides a controlled way of modifying a model instance and solving the resulting problem in the most efficient way, by communicating only the changes of the model to the solver and doing a hot start (in case of a continuous model like LP) without the use of disk IO.

The [GAMSModelInstance](#) requires a [GAMSCheckpoint](#) that contains the model definition. Significant parts of the GAMS solve need to be provided for the instantiation of the [GAMSModelInstance](#). The modification of the model instance is done through data in SyncDB (a property of [GAMSModelInstance](#) of type [GAMSDatabase](#)). One needs to create [GAMSModifier](#) which contain the information on how to modify the [GAMSModelInstance](#). Such a [GAMS-Modifier](#) consists either of a [GAMSPParameter](#) or of a triple with the [GAMSVariable](#) or [GAMSEquation](#) to be updated, the modification action (e.g. Upper, Lower or Fixed for updating bounds of a variable, or Primal/Dual for updating the level/marginal of a variable or equation mainly used for starting non-linear models from different starting points), and a [GAMSPParameter](#) that holds the data for modification. [GAMSSymbol](#) instances of a [GAMSModifier](#) must belong to SyncDB. The list of [GAMSModifier](#) instances needs to be supplied on the Instantiate call. The use of [GAMS-Parameters](#) that are [GAMSModifiers](#) is restricted in the GAMS model source. For example, the parameter cannot be used inside \$(). Such parameters become endogenous to the model and will be treated by the GAMS compiler as such. Moreover, the rim of the model instance is fixed: No addition of variables and equations is possible.

The Instantiate call will only query the symbol information of the [GAMSModifiers](#), not the data of SyncDB, e.g. to retrieve the dimension of the modifiers. That's why the modifier symbols have to exist (but don't have to have data) in SyncDB when Instantiate is called. The [GAMSPParameter](#) instances that contain the update data in SyncDB can be filled at any time before executing the Solve method. The Solve method uses this data to update the model instance. The Solve method will iterate through all records of modifier symbols in the model instance and try to find update data in SyncDB. If a record in SyncDB is found, this data record will be copied into the model instance. If no corresponding record is found in SyncDB there are different choices:

1. the original data record is restored ([SymbolUpdateType](#)=BASECASE) which is the default,

2. the default record of a [GAMSParameter](#) (which is 0) is used ([SymbolUpdateType=ZERO](#)), and
3. no copy takes place and we use the previously copied record value ([SymbolUpdateType=ACCUMULATE](#)).

After the model instance has been updated, the model is passed to the selected solver.

After the completion of the Solve method, the SyncDB will contain the primal and dual solution of the model just solved. Moreover, the GAMSParameters that are [GAMSModifiers](#) are also accessible in SyncDB as [GAMSVariables](#) with the name of the [GAMSParameter](#) plus "_var". The Marginal of this [GAMSVariable](#) can provide sensitivity information about the parameter setting. The status of the solve is accessible through the ModelStatus and Solve-Status properties (see [GAMSGlobals](#)).

A [GAMSModelInstance](#) is connected to external resources and needs to be properly disposed before the Java garbage collector can claim the instance.

Example on how to create a [GAMSModelInstance](#) from a [GAMSCheckpoint](#) that was generated by the Run method of [GAMSJob](#).

```
GAMSWorkspace ws = new GAMSWorkspace();
GAMSCheckpoint cp = ws.addCheckpoint();

GAMSJob job = ws.addJobFromGamsLib("trnsport");
job.run(cp);

GAMSModelInstance mi = cp.addModelInstance();
GAMSParameter b = mi.SyncDB().addParameter("b", 1, "demand");

mi.Instantiate("transport us lp min z", new GAMSModifier(b));

double[] bmultlist = new double[] { 0.6, 0.7, 0.8, 0.9, 1.0, 1.1, 1.2, 1.3 };
for (double bm : bmultlist)
{
    b.clear();
    for (GAMSParameterRecord rec : job.OutDB().getParameter("b"))
        b.addRecord(rec.getKeys()).setValue( rec.getValue() * bm );
    mi.solve();
    System.out.println("Scenario bmult=" + bm + ":");
    System.out.println("  Modelstatus: " + mi.getModelStatus());
    System.out.println("  Solvestatus: " + mi.getSolveStatus());
    System.out.println("  Obj: " + mi.SyncDB().getVariable("z").findRecord().getLevel());
}
```

4.19.2 Member Function Documentation

4.19.2.1 void com.gams.api.GAMSModelInstance.dispose ()

Free unmanaged resources.

4.19.2.2 void com.gams.api.GAMSModelInstance.finalize () [protected]

Destructor.

4.19.2.3 GAMSGlobals.ModelStat com.gams.api.GAMSModelInstance.getModelStatus ()

Status of the model.

(available after a solve)

Exceptions

GAMSException	If this GAMSModelInstance instance has already been disposed, therefore resources are no longer available.
-------------------------------	----------------------------------------------------------------------------------------------------------------------------

See Also

[GAMSGlobals.ModelStat](#)

4.19.2.4 String com.gams.api.GAMSModelInstance.getName ()

Retrieve [GAMSCheckpoint](#) Retrieve name of [GAMSModelInstance](#).

4.19.2.5 GAMSGlobals.SolveStat com.gams.api.GAMSModelInstance.getSolveStatus ()

Solve status of the model (available after a solve).

Exceptions

GAMSEException	If this GAMSModelInstance instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------------

See Also

[GAMSGlobals.SolveStat](#)

4.19.2.6 void com.gams.api.GAMSModelInstance.instantiate (String *modelDefinition*)

Instantiate the [GAMSModelInstance](#).

Parameters

<i>modelDefinition</i>	Model definition
------------------------	------------------

Exceptions

GAMSEException	If either GAMSModelInstance object could not be instantiated or this GAMSModelInstance instance has already been disposed, therefore resources are no longer available.
--------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

4.19.2.7 void com.gams.api.GAMSModelInstance.instantiate ([GAMSOPTIONS](#) *options*)

Instantiate the [GAMSModelInstance](#).

Parameters

<i>options</i>	An instance of GAMSOPTIONS
----------------	--------------------------------------------

Exceptions

GAMSEException	If either GAMSModelInstance object could not be instantiated or this GAMSModelInstance instance has already been disposed, therefore resources are no longer available.
--------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

4.19.2.8 void com.gams.api.GAMSModelInstance.instantiate ([GAMSModifier](#) *modifier*)

Instantiate the [GAMSModelInstance](#).

Parameters

<i>modifier</i>	An instance of GAMSModifier
-----------------	---------------------------------------------

Exceptions

GAMSException	If either GAMSModelInstance object could not be instantiated or this GAMSModelInstance instance has already been disposed, therefore resources are no longer available.
-------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

See Also

[GAMSModifier](#)

4.19.2.9 void com.gams.api.GAMSModelInstance.instantiate ([GAMSModifier](#)[] *modifiers*)

Instantiate the [GAMSModelInstance](#).

Parameters

<i>modifier</i>	List of GAMSModifier (s)
-----------------	------------------------------------------

Exceptions

GAMSException	If either GAMSModelInstance object could not be instantiated or this GAMSModelInstance instance has already been disposed, therefore resources are no longer available.
-------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

See Also

[GAMSModifier](#)

4.19.2.10 void com.gams.api.GAMSModelInstance.instantiate (String *modelDefinition*, [GAMSOPTIONS](#) *options*)

Instantiate the [GAMSModelInstance](#).

Parameters

<i>modelDefinition</i>	Model definition
<i>options</i>	GAMS options

Exceptions

GAMSException	If either GAMSModelInstance object could not be instantiated or this GAMSModelInstance instance has already been disposed, therefore resources are no longer available.
-------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

4.19.2.11 void com.gams.api.GAMSModelInstance.instantiate (String *modelDefinition*, [GAMSModifier](#) *modifier*)

Instantiate the [GAMSModelInstance](#).

Parameters

<i>modelDefinition</i>	Model definition
<i>modifier</i>	An instance of GAMSModifier

Exceptions

GAMSEException	If either GAMSModelInstance object could not be instantiated or this GAMSModel-Instance instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

See Also

[GAMSModifier](#)

4.19.2.12 void com.gams.api.GAMSModelInstance.instantiate (String *modelDefinition*, [GAMSModifier](#)[] *modifiers*)

Instantiate the [GAMSModelInstance](#).

Parameters

<i>modelDefinition</i>	Model definition
<i>modifiers</i>	List of GAMSModifier (s)

Exceptions

GAMSEException	If either GAMSModelInstance object could not be instantiated or this GAMSModel-Instance instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

See Also

[GAMSModifier](#)

4.19.2.13 void com.gams.api.GAMSModelInstance.instantiate ([GAMSOPTIONS](#) *options*, [GAMSModifier](#) *modifier*)

Instantiate the [GAMSModelInstance](#).

Parameters

<i>options</i>	An instance of GAMSOPTIONS
<i>modifier</i>	An instance of GAMSModifier

Exceptions

GAMSEException	If either GAMSModelInstance object could not be instantiated or this GAMSModel-Instance instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

See Also

[GAMSOPTIONS](#)
[GAMSModifier](#)

4.19.2.14 void com.gams.api.GAMSModelInstance.instantiate ([GAMSOPTIONS](#) *options*, [GAMSModifier](#)[] *modifiers*)

Instantiate the [GAMSModelInstance](#).

Parameters

<i>options</i>	An instance of GAMSOPTIONS
<i>modifiers</i>	List of GAMSModifier (s)

Exceptions

GAMSEException	If either GAMSModelInstance object could not be instantiated or this GAMSModelInstance instance has already been disposed, therefore resources are no longer available.
--------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

See Also

[GAMSOPTIONS](#)
[GAMSModifier](#)

4.19.2.15 void com.gams.api.GAMSModelInstance.instantiate (String *modelDefinition*, [GAMSOPTIONS](#) *options*, [GAMSModifier](#) *modifier*)

Instantiate the [GAMSModelInstance](#).

Parameters

<i>modelDefinition</i>	Model definition
<i>options</i>	An instance of GAMSOPTIONS
<i>modifier</i>	An instance of GAMSModifier

Exceptions

GAMSEException	If either GAMSModelInstance object could not be instantiated or this GAMSModelInstance instance has already been disposed, therefore resources are no longer available.
--------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

See Also

[GAMSOPTIONS](#)
[GAMSModifier](#)

4.19.2.16 void com.gams.api.GAMSModelInstance.instantiate (String *modelDefinition*, [GAMSOPTIONS](#) *options*, [GAMSModifier](#)[] *modifiers*)

Instantiate the [GAMSModelInstance](#).

Parameters

<i>modelDefinition</i>	Model definition
<i>options</i>	An instance of GAMSOPTIONS
<i>modifiers</i>	List of GAMSModifier (s)

Exceptions

GAMSEException	If either GAMSModelInstance object could not be instantiated or this GAMSModelInstance instance has already been disposed, therefore resources are no longer available.
--------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

See Also

[GAMSOptions](#)
[GAMSModifier](#)

4.19.2.17 void com.gams.api.GAMSModelInstance.solve ()

Solve model instance.

The Solve method will iterate through all records of modifier symbols in the model instance and try to find update data in SyncDB. If a record in SyncDB is found, this data record will be copied into the model instance. If no corresponding record is found in SyncDB, the original data record is restored (UpdateType=BASECASE). After the model instance has been updated, the model is passed to the selected solver.

Exceptions

GAMSEException	If either the model instance is not yet instantiated or there is a problem updating API component or there is a problem calling a solver or there is a problem writing file into a directory or the model could not be solved or this GAMSModelInstance instance has already been disposed, therefore resources are no longer available.
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See Also

[GAMSModelInstance.SymbolUpdateType](#)

4.19.2.18 void com.gams.api.GAMSModelInstance.solve (SymbolUpdateType updateType)

Solve model instance.

The Solve method will iterate through all records of modifier symbols in the model instance and try to find update data in SyncDB. If a record in SyncDB is found, this data record will be copied into the model instance. If no corresponding record is found in SyncDB there are different choices:

1. the original data record is restored (UpdateType=BASECASE) which is the default,
2. the default record of a [GAMSPParameter](#) (which is 0) is used (UpdateType=ZERO), and
3. no copy takes place and we use the previously copied record value (UpdateType=ACCUMULATE).

After the model instance has been updated, the model is passed to the selected solver.

Parameters

<i>updateType</i>	Update type
-------------------	-------------

Exceptions

GAMSEException	If either the model instance is not yet instantiated or there is a problem updating API component or there is a problem calling a solver or there is a problem writing file into a directory or the model could not be solved or this GAMSModelInstance instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

See Also

[GAMSModelInstance.SymbolUpdateType](#)

4.19.2.19 void com.gams.api.GAMSModelInstance.solve (*PrintStream output*)

Solve model instance.

The Solve method will iterate through all records of modifier symbols in the model instance and try to find update data in SyncDB. If a record in SyncDB is found, this data record will be copied into the model instance. If no corresponding record is found in SyncDB, the original data record is restored (UpdateType=BASECASE). After the model instance has been updated, the model is passed to the selected solver.

Parameters

<i>output</i>	Stream to capture GAMS log
---------------	----------------------------

Exceptions

GAMSEException	If either the model instance is not yet instantiated or there is a problem updating API component or there is a problem calling a solver or there is a problem writing file into a directory or the model could not be solved or this GAMSModelInstance instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

See Also

[GAMSModelInstance.SymbolUpdateType](#)

4.19.2.20 void com.gams.api.GAMSModelInstance.solve ([GAMSModelInstanceOpt](#) *miOpt*)

Solve model instance.

The Solve method will iterate through all records of modifier symbols in the model instance and try to find update data in SyncDB. If a record in SyncDB is found, this data record will be copied into the model instance. If no corresponding record is found in SyncDB, the original data record is restored (UpdateType=BASECASE). After the model instance has been updated, the model is passed to the selected solver.

Parameters

<i>miOpt</i>	GAMSModelInstance option
--------------	------------------------------------------

Exceptions

GAMSEException	If either the model instance is not yet instantiated or there is a problem updating API component or there is a problem calling a solver or there is a problem writing file into a directory or the model could not be solved or this GAMSModelInstance instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

See Also

[GAMSModelInstance.SymbolUpdateType](#)
[GAMSModelInstanceOpt](#)

4.19.2.21 void com.gams.api.GAMSModelInstance.solve ([SymbolUpdateType](#) *updateType*, *PrintStream output*)

Solve model instance.

The Solve method will iterate through all records of modifier symbols in the model instance and try to find update data in SyncDB. If a record in SyncDB is found, this data record will be copied into the model instance. If no corresponding record is found in SyncDB there are different choices:

1. the original data record is restored (UpdateType=BASECASE) which is the default,
2. the default record of a [GAMSPParameter](#) (which is 0) is used (UpdateType=ZERO), and
3. no copy takes place and we use the previously copied record value (UpdateType=ACCUMULATE).

After the model instance has been updated, the model is passed to the selected solver.

Parameters

<i>updateType</i>	Update type
<i>output</i>	Stream to capture GAMS log

Exceptions

GAMSEException	If either the model instance is not yet instantiated or there is a problem updating API component or there is a problem calling a solver or there is a problem writing file into a directory or the model could not be solved or this GAMSModelInstance instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

See Also

[GAMSModelInstance.SymbolUpdateType](#)

4.19.2.22 void com.gams.api.GAMSModelInstance.solve ([SymbolUpdateType](#) updateType, [GAMSModelInstanceOpt](#) miOpt)

Solve model instance.

The Solve method will iterate through all records of modifier symbols in the model instance and try to find update data in SyncDB. If a record in SyncDB is found, this data record will be copied into the model instance. If no corresponding record is found in SyncDB there are different choices:

1. the original data record is restored (UpdateType=BASECASE) which is the default,
2. the default record of a [GAMSPParameter](#) (which is 0) is used (UpdateType=ZERO), and
3. no copy takes place and we use the previously copied record value (UpdateType=ACCUMULATE).

After the model instance has been updated, the model is passed to the selected solver.

Parameters

<i>updateType</i>	Update type
<i>miOpt</i>	GAMSModelInstance option

Exceptions

GAMSEException	If either the model instance is not yet instantiated or there is a problem updating API component or there is a problem calling a solver or there is a problem writing file into a directory or the model could not be solved or this GAMSModelInstance instance has already been disposed, therefore resources are no longer available.
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See Also

[GAMSModelInstance.SymbolUpdateType](#)
[GAMSModelInstanceOpt](#)

4.19.2.23 void com.gams.api.GAMSModelInstance.solve (*PrintStream output*, *GAMSModelInstanceOpt miOpt*)

Solve model instance.

The Solve method will iterate through all records of modifier symbols in the model instance and try to find update data in SyncDB. If a record in SyncDB is found, this data record will be copied into the model instance. If no corresponding record is found in SyncDB, the original data record is restored (UpdateType=BASECASE). After the model instance has been updated, the model is passed to the selected solver.

Parameters

<i>output</i>	Stream to capture GAMS log
<i>miOpt</i>	GAMSModelInstance option

Exceptions

GAMSEException	If either the model instance is not yet instantiated or there is a problem updating API component or there is a problem calling a solver or there is a problem writing file into a directory or the model could not be solved or this GAMSModelInstance instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

See Also

[GAMSModelInstance.SymbolUpdateType](#)
[GAMSModelInstanceOpt](#)

4.19.2.24 void com.gams.api.GAMSModelInstance.solve (*SymbolUpdateType updateType*, *PrintStream output*, *GAMSModelInstanceOpt miOpt*)

Solve model instance.

The Solve method will iterate through all records of modifier symbols in the model instance and try to find update data in SyncDB. If a record in SyncDB is found, this data record will be copied into the model instance. If no corresponding record is found in SyncDB there are different choices:

1. the original data record is restored (UpdateType=BASECASE) which is the default,
2. the default record of a [GAMSParameter](#) (which is 0) is used (UpdateType=ZERO), and
3. no copy takes place and we use the previously copied record value (UpdateType=ACCUMULATE).

After the model instance has been updated, the model is passed to the selected solver.

Parameters

<i>updateType</i>	Update type
<i>output</i>	Stream to capture GAMS log
<i>miOpt</i>	GAMSModelInstance option

Exceptions

GAMSEException	If either the model instance is not yet instantiated or there is a problem updating API component or there is a problem calling a solver or there is a problem writing file into a directory or the model could not be solved or this GAMSModelInstance instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

See Also

[GAMSModelInstance.SymbolUpdateType](#)
[GAMSModelInstanceOpt](#)

4.19.2.25 GAMSDatabase com.gams.api.GAMSModelInstance.SyncDB ()

Retrieve [GAMSDatabase](#) used to synchronize modifiable data.

4.20 com.gams.api.GAMSModelInstance.SymbolUpdateType Enum Reference

Symbol update type.

Public Member Functions

- [int value](#) ()
Get the int value of this enumerated SymbolUpdate.

Static Public Member Functions

- static [SymbolUpdateType lookup](#) (int [value](#))
Lookup all symbol update types used by GAMS.

Public Attributes

- [ZERO](#)
If record does not exist use 0 (Zero)
- [BASECASE](#)
If record does not exist use values from instantiation.
- [ACCUMULATE](#)
If record does not exist use value from previous solve.

4.20.1 Detailed Description

Symbol update type.

4.20.2 Member Function Documentation

4.20.2.1 static SymbolUpdateType com.gams.api.GAMSModelInstance.SymbolUpdateType.lookup (int *value*) [static]

Lookup all symbol update types used by GAMS.

Parameters

<i>value</i>	an int value to lookup
--------------	------------------------

Returns

the enumerated [SymbolUpdateType](#) that has the specified value, or UNDEFINED_TYPE if the specified value is not found.

4.20.2.2 int com.gams.api.GAMSModelInstance.SymbolUpdateType.value ()

Get the int value of this enumerated SymbolUpdate.

Returns

the int value of the [SymbolUpdateType](#)

4.20.3 Member Data Documentation

4.20.3.1 com.gams.api.GAMSModelInstance.SymbolUpdateType.ACCUMULATE

If record does not exist use value from previous solve.

4.20.3.2 com.gams.api.GAMSModelInstance.SymbolUpdateType.BASECASE

If record does not exist use values from instantiation.

4.20.3.3 com.gams.api.GAMSModelInstance.SymbolUpdateType.ZERO

If record does not exist use 0 (Zero)

4.21 com.gams.api.GAMSModelInstanceOpt Class Reference

The [GAMSModelInstanceOpt](#) can be used to customize the [GAMSModelInstance.solve\(\)](#) routine.

Public Member Functions

- [GAMSModelInstanceOpt](#) (String solver, int optfile, int noMatchLimit, boolean debug)
Constructs a [GAMSModelInstanceOpt](#).

Public Attributes

- String [miOptSolver](#) = null
GAMS Solver.
- int [miOptOptFile](#) = -1
GAMS Option file number.
- int [miOptNoMatchLimit](#) = 0
Controls the maximum number of accepted unmatched scenario records before terminating the solve.
- boolean [miOptDebug](#) = false
Debug Flag.

4.21.1 Detailed Description

The [GAMSModelInstanceOpt](#) can be used to customize the [GAMSModelInstance.solve\(\)](#) routine.

4.21.2 Constructor & Destructor Documentation

4.21.2.1 `com.gams.api.GAMSModelInstanceOpt.GAMSModelInstanceOpt (String solver, int optfile, int noMatchLimit, boolean debug)`

Constructs a [GAMSModelInstanceOpt](#).

Parameters

<i>solver</i>	GAMS Solver
<i>optfile</i>	GAMS Option file number
<i>noMatchLimit</i>	Controls the maximum number of accepted unmatched scenario records before terminating the solve
<i>debug</i>	Debug Flag

4.21.3 Member Data Documentation

4.21.3.1 `boolean com.gams.api.GAMSModelInstanceOpt.miOptDebug = false`

Debug Flag.

4.21.3.2 `int com.gams.api.GAMSModelInstanceOpt.miOptNoMatchLimit = 0`

Controls the maximum number of accepted unmatched scenario records before terminating the solve.

4.21.3.3 `int com.gams.api.GAMSModelInstanceOpt.miOptOptFile = -1`

GAMS Option file number.

4.21.3.4 `String com.gams.api.GAMSModelInstanceOpt.miOptSolver = null`

GAMS Solver.

4.22 `com.gams.api.GAMSModifier` Class Reference

Instances of this class are input to [GAMSModelInstance](#).instantiate method.

Public Member Functions

- [GAMSModifier](#) ([GAMSSymbol](#)<?> gamsSymbol, [GAMSGlobals.UpdateAction](#) updAction, [GAMSPParameter](#) dataSymbol)
Constructs a new [GAMSModifier](#) instance.
- [GAMSModifier](#) ([GAMSPParameter](#) gamsParam)
Constructs a new [GAMSModifier](#) instance.
- [GAMSSymbol](#)<?> [getGamsSymbol](#) ()
Symbol in the GAMS model to be modified.
- [GAMSGlobals.UpdateAction](#) [getUpdAction](#) ()
Type of modification.
- [GAMSPParameter](#) [getDataSymbol](#) ()
Symbol containing the data for the modification.

4.22.1 Detailed Description

Instances of this class are input to [GAMSModelInstance.instantiate](#) method.

A [GAMSModifier](#) consists either of a [GAMSPParameter](#) or a triple: A [GAMSVariable](#) or [GAMSEquation](#) to be modified, the modification action (e.g. Upper, Lower or Fixed for updating bounds of a variable, or Primal/Dual for updating the level/marginal of a variable or equation mainly used for starting non-linear models from different starting points), and a [GAMSPParameter](#) that holds the data for modification.

4.22.2 Constructor & Destructor Documentation

4.22.2.1 `com.gams.api.GAMSModifier.GAMSModifier (GAMSSymbol<?> gamsSymbol, GAMSGlobals.UpdateAction updAction, GAMSPParameter dataSymbol)`

Constructs a new [GAMSModifier](#) instance.

Parameters

<i>gamsSymbol</i>	Symbol in the GAMS model to be modified
<i>updAction</i>	Modification action
<i>dataSymbol</i>	Parameter containing the data for the modification

Exceptions

GAMSEException	If GAMSModifier object could not be successfully created
--------------------------------	--------------------------------------------------------------------------

See Also

[GAMSGlobals.UpdateAction](#)
[GAMSModelInstance](#)

4.22.2.2 `com.gams.api.GAMSModifier.GAMSModifier (GAMSPParameter gamsParam)`

Constructs a new [GAMSModifier](#) instance.

Parameters

<i>gamsParam</i>	Parameter in the GAMS model to be modified with data for modification
------------------	-----------------------------------------------------------------------

4.22.3 Member Function Documentation

4.22.3.1 `GAMSPParameter com.gams.api.GAMSModifier.getDataSymbol ()`

Symbol containing the data for the modification.

4.22.3.2 `GAMSSymbol<?> com.gams.api.GAMSModifier.getGamsSymbol ()`

Symbol in the GAMS model to be modified.

4.22.3.3 `GAMSGlobals.UpdateAction com.gams.api.GAMSModifier.getUpdAction ()`

Type of modification.

See Also

[GAMSGlobals.UpdateAction](#)

4.23 com.gams.api.GAMSOptions Class Reference

Classes

- enum [EAction](#)
Gams processing requests.
- enum [ECase](#)
Output case option.
- enum [ECharSet](#)
Character set flag.
- enum [EDFormat](#)
Date format.
- enum [EExecMode](#)
Limits on external programs that are allowed to be executed.
- enum [EFileCase](#)
Casing of new file names (put,.gdx, ref etc.)
- enum [EForceWork](#)
Force newer GAMS systems to translate and read save files generated by older systems.
- enum [EgdxCompress](#)
Compression of generated.gdx file.
- enum [EgdxConvert](#)
Version of.gdx files generated (for backward compatibility)
- enum [EHoldFixed](#)
Treat fixed variables as constants.
- enum [EInteractiveSolver](#)
Allow solver to interact via command line.
- enum [EKeep](#)
Do not delete scratch files.
- enum [ESavePoint](#)
Save solver point in GDX file.
- enum [ESolPrint](#)
Solution report print option.
- enum [ESolveLink](#)
Solver link options 0 save 1 script 2 module.
- enum [EStepSum](#)
Summary of computing resources used by job steps.
- enum [EStringChk](#)
String substitution options.
- enum [ESys11](#)
Dynamic resorting if indices in assignment/data statements are not in natural order.
- enum [ESysOut](#)
Solver Status file reporting option.
- enum [ETFormat](#)
Time format.
- enum [EZeroResRep](#)
Report underflow as a warning when abs(results) .le.

Public Member Functions

- List< String > [getInputDirectories](#) ()
get input file directories
- String [getSelectedSolvers](#) (int index)
get selected solvers
- List< String > [getAllSelectedSolvers](#) ()
get all selected solvers
- void [setAllSelectedSolvers](#) (List< String > solvers)
set all selected solvers
- List< String > [getAllSolversOptions](#) ()
get all selected solvers
- void [setSolversOptions](#) (List< String > solvers)
set all selected solvers
- List< String > [getIDir](#) ()
get input file directories
- boolean [isIDirEmpty](#) ()
check if the list of input file directories is empty
- String [getIDir](#) (int index)
get an input file directory of specified index
- Map< String, String > [getDefinitions](#) ()
get all definitions of GAMS Dash options
- boolean [isDefinitionEmpty](#) ()
check if the list of GAMS Dash options dictionaries is empty
- String [getDefinitionOf](#) (String str)
get the definition of GAMS Dash options
- void [defines](#) (String defStr, String asStr)
set the definition of GAMS Dash options
- void [readFromStr](#) (String str)
read from string
- int [writeParameterFile](#) (String fileName)
write parameter file
- String [getGDX](#) ()
get Gams data exchange file name
- void [setGDX](#) (String gdxFileName)
set Gams data exchange file name
- GAMSOPTIONS.EAction [getAction](#) ()
get Gams processing requests
- void [setAction](#) (GAMSOPTIONS.EAction x)
set Gams processing requests
- String [getPutDir](#) ()
get Put file directory
- void [setPutDir](#) (String x)
set Put file directory
- String [getGridDir](#) ()
get Grid file directory
- void [setGridDir](#) (String x)
set Grid file directory
- GAMSOPTIONS.EStepSum [getStepSum](#) ()
get Summary of computing resources used by job steps
- void [setStepSum](#) (GAMSOPTIONS.EStepSum x)

- set Summary of computing resources used by job steps*
- GAMSOptions.EDFormat [getDFormat](#) ()
 - get Date format*
- void [setDFormat](#) (GAMSOptions.EDFormat x)
 - set Date format*
- GAMSOptions.ETFormat [getTFormat](#) ()
 - get Time format*
- void [setTFormat](#) (GAMSOptions.ETFormat x)
 - set Time format*
- int [getTabIn](#) ()
 - get Tab spacing*
- void [setTabIn](#) (int x)
 - set Tab spacing*
- GAMSOptions.ECase [getCase](#) ()
 - get Output case option*
- void [setCase](#) (GAMSOptions.ECase x)
 - set Output case option*
- String [getLicense](#) ()
 - get Use alternative license file*
- void [setLicense](#) (String x)
 - set Use alternative license file*
- int [getProfile](#) ()
 - get Execution profiling*
- void [setProfile](#) (int x)
 - set Execution profiling*
- String [getLibIncDir](#) ()
 - get LibInclude directory*
- void [setLibIncDir](#) (String x)
 - set LibInclude directory*
- String [getSysIncDir](#) ()
 - get SysInclude directory*
- void [setSysIncDir](#) (String x)
 - set SysInclude directory*
- String [getUser1](#) ()
 - get User string N*
- void [setUser1](#) (String x)
 - set User string N*
- String [getUser2](#) ()
 - get User string N*
- void [setUser2](#) (String x)
 - set User string N*
- String [getUser3](#) ()
 - get User string N*
- void [setUser3](#) (String x)
 - set User string N*
- String [getUser4](#) ()
 - get User string N*
- void [setUser4](#) (String x)
 - set User string N*
- String [getUser5](#) ()
 - get User string N*

- void [setUser5](#) (String x)
set User string N
- GAMSOPTIONS.EForceWork [getForceWork](#) ()
get Force newer GAMS systems to translate and read save files generated by older systems
- void [setForceWork](#) (GAMSOPTIONS.EForceWork x)
set Force newer GAMS systems to translate and read save files generated by older systems
- int [getCErr](#) ()
get Compile time error limit
- void [setCErr](#) (int x)
set Compile time error limit
- int [getOptFile](#) ()
get Default option file
- void [setOptFile](#) (int x)
set Default option file
- int [getOpt](#) ()
get Fold constant \$ expressions
- void [setOpt](#) (int x)
set Fold constant \$ expressions
- GAMSOPTIONS.EStringChk [getStringChk](#) ()
get String substitution options
- void [setStringChk](#) (GAMSOPTIONS.EStringChk x)
set String substitution options
- String [getOptDir](#) ()
get Option file directory
- void [setOptDir](#) (String x)
set Option file directory
- int [getExecErr](#) ()
get Execution time error limit
- void [setExecErr](#) (int x)
set Execution time error limit
- GAMSOPTIONS.ECharSet [getCharSet](#) ()
get Character set flag
- void [setCharSet](#) (GAMSOPTIONS.ECharSet x)
set Character set flag
- GAMSOPTIONS.EKeep [getKeep](#) ()
get Do not delete scratch files
- void [setKeep](#) (GAMSOPTIONS.EKeep x)
set Do not delete scratch files
- int [getIterLim](#) ()
get Iteration limit solver default
- void [setIterLim](#) (int x)
set Iteration limit solver default
- int [getDomLim](#) ()
get Domain violation limit solver default
- void [setDomLim](#) (int x)
set Domain violation limit solver default
- double [getResLim](#) ()
get Resource (CPU) solver default limit
- void [setResLim](#) (double x)
set Resource (CPU) solver default limit
- double [getOptCR](#) ()

- get Relative Optimality criterion solver default*
- void [setOptCR](#) (double x)
 - set Relative Optimality criterion solver default*
- double [getOptCA](#) ()
 - get Absolute Optimality criterion solver default*
- void [setOptCA](#) (double x)
 - set Absolute Optimality criterion solver default*
- GAMSOptions.ESysOut [getSysOut](#) ()
 - get Solver Status file reporting option*
- void [setSysOut](#) (GAMSOptions.ESysOut x)
 - set Solver Status file reporting option*
- GAMSOptions.ESolPrint [getSolPrint](#) ()
 - get Solution report print option*
- void [setSolPrint](#) (GAMSOptions.ESolPrint x)
 - set Solution report print option*
- double [getBratio](#) ()
 - get Basis acceptance threshold*
- void [setBratio](#) (double x)
 - set Basis acceptance threshold*
- GAMSOptions.EHoldFixed [getHoldFixed](#) ()
 - get Treat fixed variables as constants*
- void [setHoldFixed](#) (GAMSOptions.EHoldFixed x)
 - set Treat fixed variables as constants*
- int [getNodLim](#) ()
 - get Node limit in branch and bound tree*
- void [setNodLim](#) (int x)
 - set Node limit in branch and bound tree*
- double [getWorkFactor](#) ()
 - get Work space multiplier for some solvers*
- void [setWorkFactor](#) (double x)
 - set Work space multiplier for some solvers*
- double [getWorkSpace](#) ()
 - get Work space for some solvers in MB*
- void [setWorkSpace](#) (double x)
 - set Work space for some solvers in MB*
- int [getForLim](#) ()
 - get Gams looping limit*
- void [setForLim](#) (int x)
 - set Gams looping limit*
- int [getSeed](#) ()
 - get Random number seed*
- void [setSeed](#) (int x)
 - set Random number seed*
- GAMSOptions.EExecMode [getExecMode](#) ()
 - get Limits on external programs that are allowed to be executed*
- void [setExecMode](#) (GAMSOptions.EExecMode x)
 - set Limits on external programs that are allowed to be executed*
- GAMSOptions.EInteractiveSolver [getInteractiveSolver](#) ()
 - get Allow solver to interact via command line*
- void [setInteractiveSolver](#) (GAMSOptions.EInteractiveSolver x)
 - set Allow solver to interact via command line*

- String [getPLicense](#) ()
get Privacy license file name
- void [setPLicense](#) (String x)
set Privacy license file name
- int [getWarnings](#) ()
get Number of warnings permitted before a run terminates
- void [setWarnings](#) (int x)
set Number of warnings permitted before a run terminates
- int [getTimer](#) ()
get Instruction timer threshold in milli seconds
- void [setTimer](#) (int x)
set Instruction timer threshold in milli seconds
- GAMSOPTIONS.EFileCase [getFileCase](#) ()
get Casing of new file names (put,.gdx, ref etc.)
- void [setFileCase](#) (GAMSOPTIONS.EFileCase x)
set Casing of new file names (put,.gdx, ref etc.)
- GAMSOPTIONS.ESavePoint [getSavePoint](#) ()
get Save solver point in GDX file
- void [setSavePoint](#) (GAMSOPTIONS.ESavePoint x)
set Save solver point in GDX file
- GAMSOPTIONS.ESolveLink [getSolveLink](#) ()
get Solver link options 0 save 1 script 2 module
- void [setSolveLink](#) (GAMSOPTIONS.ESolveLink x)
set Solver link options 0 save 1 script 2 module
- GAMSOPTIONS.ESys11 [getSys11](#) ()
get Dynamic resorting if indices in assignment/data statements are not in natural order
- void [setSys11](#) (GAMSOPTIONS.ESys11 x)
set Dynamic resorting if indices in assignment/data statements are not in natural order
- int [getSys12](#) ()
get Pass model with generation errors to solver
- void [setSys12](#) (int x)
set Pass model with generation errors to solver
- double [getZeroRes](#) ()
get The results of certain operations will be set to zero if abs(result) .le.
- void [setZeroRes](#) (double x)
set The results of certain operations will be set to zero if abs(result) .le.
- GAMSOPTIONS.EZeroResRep [getZeroResRep](#) ()
get Report underflow as a warning when abs(results) .le.
- void [setZeroResRep](#) (GAMSOPTIONS.EZeroResRep x)
set Report underflow as a warning when abs(results) .le.
- double [getHeapLimit](#) ()
get Maximum Heap size allowed in MB
- void [setHeapLimit](#) (double x)
set Maximum Heap size allowed in MB
- GAMSOPTIONS.EgdxCompress [getgdxCompress](#) ()
get Compression of generated.gdx file
- void [setgdxCompress](#) (GAMSOPTIONS.EgdxCompress x)
set Compression of generated.gdx file
- GAMSOPTIONS.EgdxConvert [getgdxConvert](#) ()
get Version of.gdx files generated (for backward compatibility)
- void [setgdxConvert](#) (GAMSOPTIONS.EgdxConvert x)

- set Version of.gdx files generated (for backward compatibility)*
- double [getETLim](#) ()
 - get Elapsed time limit in seconds*
- void [setETLim](#) (double x)
 - set Elapsed time limit in seconds*
- double [getProfileTol](#) ()
 - get Minimum time a statement must use to appear in profile generated output*
- void [setProfileTol](#) (double x)
 - set Minimum time a statement must use to appear in profile generated output*
- String [getProfileFile](#) ()
 - get Write profile information to this file*
- void [setProfileFile](#) (String x)
 - set Write profile information to this file*
- int [getMaxProcDir](#) ()
 - get Maximum number of 225* process directories*
- void [setMaxProcDir](#) (int x)
 - set Maximum number of 225* process directories*
- int [getInteger1](#) ()
 - get Integer communication cell N*
- void [setInteger1](#) (int x)
 - set Integer communication cell N*
- int [getInteger2](#) ()
 - get Integer communication cell N*
- void [setInteger2](#) (int x)
 - set Integer communication cell N*
- int [getInteger3](#) ()
 - get Integer communication cell N*
- void [setInteger3](#) (int x)
 - set Integer communication cell N*
- int [getInteger4](#) ()
 - get Integer communication cell N*
- void [setInteger4](#) (int x)
 - set Integer communication cell N*
- int [getInteger5](#) ()
 - get Integer communication cell N*
- void [setInteger5](#) (int x)
 - set Integer communication cell N*
- String [getGridScript](#) ()
 - get Grid submission script*
- void [setGridScript](#) (String x)
 - set Grid submission script*
- int [getThreads](#) ()
 - get Number of threads to be used by a solver*
- void [setThreads](#) (int x)
 - set Number of threads to be used by a solver*
- String [getLP](#) ()
 - get default LP solver*
- void [setLP](#) (String x)
 - set default LP solver*
- String [getMIP](#) ()
 - get default MIP solver*

- void [setMIP](#) (String x)
set default MIP solver
- String [getRMIP](#) ()
get default RMIP solver
- void [setRMIP](#) (String x)
set default RMIP solver
- String [getNLP](#) ()
get default NLP solver
- void [setNLP](#) (String x)
set default NLP solver
- String [getMCP](#) ()
get default MCP solver
- void [setMCP](#) (String x)
set default MCP solver
- String [getMPEC](#) ()
get default MPEC solver
- void [setMPEC](#) (String x)
set default MPEC solver
- String [getRMPEC](#) ()
get default RMPEC solver
- void [setRMPEC](#) (String x)
set default RMPEC solver
- String [getCNS](#) ()
get default CNS solver
- void [setCNS](#) (String x)
set default CNS solver
- String [getDNLP](#) ()
get default DNLP solver
- void [setDNLP](#) (String x)
set default DNLP solver
- String [getRMINLP](#) ()
get default RMINLP solver
- void [setRMINLP](#) (String x)
set default RMINLP solver
- String [getMINLP](#) ()
get default MINLP solver
- void [setMINLP](#) (String x)
set default MINLP solver
- String [getQCP](#) ()
get default QCP solver
- void [setQCP](#) (String x)
set default QCP solver
- String [getMIQCP](#) ()
get default MIQCP solver
- void [setMIQCP](#) (String x)
set default MIQCP solver
- String [getRMIQCP](#) ()
get default RMIQCP solver
- void [setRMIQCP](#) (String x)
set default RMIQCP solver
- String [getEMP](#) ()

- get default EMP solver*
- void [setEMP](#) (String x)
set default EMP solver
- void [setAllModelTypes](#) (String value)
Set default solver for all model types which the solver can handle.
- void [setModelTypesForSolvers](#) ()
Set default solver for all model types which the solver can handle.
- void [ResetToDefault](#) ()
Reset all GAMS options to default.
- void [dispose](#) ()
Free unmanaged resources.

Public Attributes

- Map< String, String > [definitions](#) = null
Dictionaries for GAMS Dash options.
- List< String > [IDir](#) = null
Input file directories (up to 40 are allowed)

Protected Member Functions

- void [finalize](#) ()
Finalize method to free unmanaged resources.

4.23.1 Detailed Description

The [GAMSOptions](#) class manages GAMS options (sometimes also called [GAMSPParameter](#), since they correspond to the command line parameters of the GAMS executable) for a [GAMSJob](#) and [GAMSModelInstance](#). There are integer (e.g. NodLim), double (e.g. ResLim), and string (e.g. PutDir) valued options. There are also a few list options (Defines to set string macros inside GAMS and IDir provide multiple search paths for include files) and a power option to set a solver for all suitable model types (AllModelTypes).

Some options known from other interfaces to GAMS that are of limited use or could even create problematic situations in the Java environment are not settable through the [GAMSOptions](#) class.

For some options (e.g. Case) other GAMS interfaces use numeric values (e.g. 0,1) while the [GAMSOptions](#) class has enumerated types with proper names (e.g. MixedCase, UpperCase).

4.23.2 Member Function Documentation

4.23.2.1 void com.gams.api.GAMSOptions.defines (String defStr, String asStr)

set the definition of GAMS Dash options

Parameters

<i>defStr</i>	string
<i>asStr</i>	definition string

4.23.2.2 void com.gams.api.GAMSOptions.dispose ()

Free unmanaged resources.

4.23.2.3 void com.gams.api.GAMSOptions.finalize () [protected]

Finalize method to free unmanaged resources.

Though in Java, there is no guarantee that this method will be called.

4.23.2.4 GAMSOptions.EAction com.gams.api.GAMSOptions.getAction ()

get Gams processing requests

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.5 List<String> com.gams.api.GAMSOptions.getAllSelectedSolvers ()

get all selected solvers

4.23.2.6 List<String> com.gams.api.GAMSOptions.getAllSolversOptions ()

get all selected solvers

4.23.2.7 double com.gams.api.GAMSOptions.getBratio ()

get Basis acceptance threshold

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.8 GAMSOptions.ECase com.gams.api.GAMSOptions.getCase ()

get Output case option

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.9 int com.gams.api.GAMSOptions.getCErr ()

get Compile time error limit

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.10 `GAMSOptions.ECharSet` `com.gams.api.GAMSOptions.getCharSet ()`

get Character set flag

Exceptions

<i>GAMSEException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
---------------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.11 `String` `com.gams.api.GAMSOptions.getCNS ()`

get default CNS solver

Exceptions

<i>GAMSEException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
---------------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.12 `String` `com.gams.api.GAMSOptions.getDefinitionOf (String str)`

get the definition of GAMS Dash options

Parameters

<i>str</i>	string
------------	--------

Returns

the definition that matches string

4.23.2.13 `Map<String, String>` `com.gams.api.GAMSOptions.getDefinitions ()`

get all definitions of GAMS Dash options

4.23.2.14 `GAMSOptions.EDFormat` `com.gams.api.GAMSOptions.getDFormat ()`

get Date format

Exceptions

<i>GAMSEException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
---------------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.15 `String` `com.gams.api.GAMSOptions.getDNLP ()`

get default DNLP solver

Exceptions

<i>GAMSEException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
---------------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.16 int com.gams.api.GAMSOPTIONS.getDomLim ()

get Domain violation limit solver default

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.17 String com.gams.api.GAMSOPTIONS.getEMP ()

get default EMP solver

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.18 double com.gams.api.GAMSOPTIONS.getETLim ()

get Elapsed time limit in seconds

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.19 int com.gams.api.GAMSOPTIONS.getExecErr ()

get Execution time error limit

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.20 GAMSOPTIONS.EExecMode com.gams.api.GAMSOPTIONS.getExecMode ()

get Limits on external programs that are allowed to be executed

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.21 GAMSOPTIONS.EFileCase com.gams.api.GAMSOPTIONS.getFileCase ()

get Casing of new file names (put,.gdx, ref etc.)

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.22 `GAMSOptions.EForceWork` `com.gams.api.GAMSOptions.getForceWork ()`

get Force newer GAMS systems to translate and read save files generated by older systems

Exceptions

<i>GAMSEException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
---------------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.23 `int` `com.gams.api.GAMSOptions.getForLim ()`

get Gams looping limit

Exceptions

<i>GAMSEException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
---------------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.24 `String` `com.gams.api.GAMSOptions.getGDX ()`

get Gams data exchange file name

Exceptions

<i>GAMSEException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available..
---------------------------------------	-----------------------------------------------------------------------------------------------------------------------

4.23.2.25 `GAMSOptions.EgdxCompress` `com.gams.api.GAMSOptions.getgdxCompress ()`

get Compression of generated gdx file

Exceptions

<i>GAMSEException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
---------------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.26 `GAMSOptions.EgdxConvert` `com.gams.api.GAMSOptions.getgdxConvert ()`

get Version of gdx files generated (for backward compatibility)

Exceptions

<i>GAMSEException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
---------------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.27 `String` `com.gams.api.GAMSOptions.getGridDir ()`

get Grid file directory

Exceptions

<i>GAMSEException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
---------------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.28 String com.gams.api.GAMSOPTIONS.getGridScript ()

get Grid submission script

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.29 double com.gams.api.GAMSOPTIONS.getHeapLimit ()

get Maximum Heap size allowed in MB

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.30 GAMSOPTIONS.EHoldFixed com.gams.api.GAMSOPTIONS.getHoldFixed ()

get Treat fixed variables as constants

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.31 List<String> com.gams.api.GAMSOPTIONS.getIdir ()

get input file directories

4.23.2.32 String com.gams.api.GAMSOPTIONS.getIdir (int index)

get an input file directory of specified index

4.23.2.33 List<String> com.gams.api.GAMSOPTIONS.getInputDirectories ()

get input file directories

4.23.2.34 int com.gams.api.GAMSOPTIONS.getInteger1 ()

get Integer communication cell N

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.35 int com.gams.api.GAMSOPTIONS.getInteger2 ()

get Integer communication cell N

Exceptions

<i>GAMSException</i>	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.36 int com.gams.api.GAMSOPTIONS.getInteger3 ()

get Integer communication cell N

Exceptions

<i>GAMSException</i>	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.37 int com.gams.api.GAMSOPTIONS.getInteger4 ()

get Integer communication cell N

Exceptions

<i>GAMSException</i>	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.38 int com.gams.api.GAMSOPTIONS.getInteger5 ()

get Integer communication cell N

Exceptions

<i>GAMSException</i>	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.39 GAMSOPTIONS.EInteractiveSolver com.gams.api.GAMSOPTIONS.getInteractiveSolver ()

get Allow solver to interact via command line

Exceptions

<i>GAMSException</i>	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.40 int com.gams.api.GAMSOPTIONS.getIterLim ()

get Iteration limit solver default

Exceptions

<i>GAMSException</i>	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.41 `GAMSOPTIONS.KEEP com.gams.api.GAMSOPTIONS.getKeep ()`

get Do not delete scratch files

Exceptions

<i>GAMSEException</i>	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
---------------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.42 `String com.gams.api.GAMSOPTIONS.getLibIncDir ()`

get LibInclude directory

Exceptions

<i>GAMSEException</i>	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
---------------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.43 `String com.gams.api.GAMSOPTIONS.getLicense ()`

get Use alternative license file

Exceptions

<i>GAMSEException</i>	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
---------------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.44 `String com.gams.api.GAMSOPTIONS.getLP ()`

get default LP solver

Exceptions

<i>GAMSEException</i>	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
---------------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.45 `int com.gams.api.GAMSOPTIONS.getMaxProcDir ()`

get Maximum number of 225* process directories

Exceptions

<i>GAMSEException</i>	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
---------------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.46 `String com.gams.api.GAMSOPTIONS.getMCP ()`

get default MCP solver

Exceptions

<i>GAMSEException</i>	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
---------------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.47 String com.gams.api.GAMSOptions.getMINLP ()

get default MINLP solver

Exceptions

<i>GAMSEException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
---------------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.48 String com.gams.api.GAMSOptions.getMIP ()

get default MIP solver

Exceptions

<i>GAMSEException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
---------------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.49 String com.gams.api.GAMSOptions.getMIQCP ()

get default MIQCP solver

Exceptions

<i>GAMSEException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
---------------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.50 String com.gams.api.GAMSOptions.getMPEC ()

get default MPEC solver

Exceptions

<i>GAMSEException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
---------------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.51 String com.gams.api.GAMSOptions.getNLP ()

get default NLP solver

Exceptions

<i>GAMSEException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
---------------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.52 int com.gams.api.GAMSOptions.getNodLim ()

get Node limit in branch and bound tree

Exceptions

<i>GAMSEException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
---------------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.53 int com.gams.api.GAMSOptions.getOpt ()

get Fold constant \$ expressions

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.54 double com.gams.api.GAMSOptions.getOptCA ()

get Absolute Optimality criterion solver default

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.55 double com.gams.api.GAMSOptions.getOptCR ()

get Relative Optimality criterion solver default

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.56 String com.gams.api.GAMSOptions.getOptDir ()

get Option file directory

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.57 int com.gams.api.GAMSOptions.getOptFile ()

get Default option file

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
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4.23.2.58 String com.gams.api.GAMSOptions.getPLicense ()

get Privacy license file name

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.59 `int com.gams.api.GAMSOptions.getProfile ()`

get Execution profiling

Exceptions

<i>GAMSEException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
---------------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.60 `String com.gams.api.GAMSOptions.getProfileFile ()`

get Write profile information to this file

Exceptions

<i>GAMSEException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
---------------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.61 `double com.gams.api.GAMSOptions.getProfileTol ()`

get Minimum time a statement must use to appear in profile generated output

Exceptions

<i>GAMSEException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
---------------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.62 `String com.gams.api.GAMSOptions.getPutDir ()`

get Put file directory

Exceptions

<i>GAMSEException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
---------------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.63 `String com.gams.api.GAMSOptions.getQCP ()`

get default QCP solver

Exceptions

<i>GAMSEException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
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4.23.2.64 `double com.gams.api.GAMSOptions.getResLim ()`

get Resource (CPU) solver default limit

Exceptions

<i>GAMSEException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
---------------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.65 String com.gams.api.GAMSOPTIONS.getRMINLP ()

get default RMINLP solver

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.66 String com.gams.api.GAMSOPTIONS.getRMIP ()

get default RMIP solver

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.67 String com.gams.api.GAMSOPTIONS.getRMIQCP ()

get default RMIQCP solver

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.68 String com.gams.api.GAMSOPTIONS.getRMPEC ()

get default RMPEC solver

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.69 GAMSOPTIONS.ESavePoint com.gams.api.GAMSOPTIONS.getSavePoint ()

get Save solver point in GDX file

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.70 int com.gams.api.GAMSOPTIONS.getSeed ()

get Random number seed

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
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4.23.2.71 String com.gams.api.GAMSOptions.getSelectedSolvers (int *index*)

get selected solvers

4.23.2.72 GAMSOptions.ESolPrint com.gams.api.GAMSOptions.getSolPrint ()

get Solution report print option

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.73 GAMSOptions.ESolveLink com.gams.api.GAMSOptions.getSolveLink ()

get Solver link options 0 save 1 script 2 module

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.74 GAMSOptions.EStepSum com.gams.api.GAMSOptions.getStepSum ()

get Summary of computing resources used by job steps

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
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4.23.2.75 GAMSOptions.EStringChk com.gams.api.GAMSOptions.getStringChk ()

get String substitution options

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.76 GAMSOptions.ESys11 com.gams.api.GAMSOptions.getSys11 ()

get Dynamic resorting if indices in assignment/data statements are not in natural order

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.77 int com.gams.api.GAMSOPTIONS.getSys12 ()

get Pass model with generation errors to solver

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
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4.23.2.78 String com.gams.api.GAMSOPTIONS.getSysIncDir ()

get SysInclude directory

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
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4.23.2.79 GAMSOPTIONS.ESysOut com.gams.api.GAMSOPTIONS.getSysOut ()

get Solver Status file reporting option

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.80 int com.gams.api.GAMSOPTIONS.getTabIn ()

get Tab spacing

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
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4.23.2.81 GAMSOPTIONS.ETFormat com.gams.api.GAMSOPTIONS.getTFormat ()

get Time format

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
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4.23.2.82 int com.gams.api.GAMSOPTIONS.getThreads ()

get Number of threads to be used by a solver

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.83 `int com.gams.api.GAMSOptions.getTimer ()`

get Instruction timer threshold in milli seconds

Exceptions

<i>GAMSEException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
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4.23.2.84 `String com.gams.api.GAMSOptions.getUser1 ()`

get User string N

Exceptions

<i>GAMSEException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
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4.23.2.85 `String com.gams.api.GAMSOptions.getUser2 ()`

get User string N

Exceptions

<i>GAMSEException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
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4.23.2.86 `String com.gams.api.GAMSOptions.getUser3 ()`

get User string N

Exceptions

<i>GAMSEException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
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4.23.2.87 `String com.gams.api.GAMSOptions.getUser4 ()`

get User string N

Exceptions

<i>GAMSEException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
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4.23.2.88 `String com.gams.api.GAMSOptions.getUser5 ()`

get User string N

Exceptions

<i>GAMSEException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
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4.23.2.89 int com.gams.api.GAMSOPTIONS.getWarnings ()

get Number of warnings permitted before a run terminates

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.90 double com.gams.api.GAMSOPTIONS.getWorkFactor ()

get Work space multiplier for some solvers

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
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4.23.2.91 double com.gams.api.GAMSOPTIONS.getWorkSpace ()

get Work space for some solvers in MB

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.92 double com.gams.api.GAMSOPTIONS.getZeroRes ()

get The results of certain operations will be set to zero if abs(result) .le.

ZeroRes

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.93 GAMSOPTIONS.EZeroResRep com.gams.api.GAMSOPTIONS.getZeroResRep ()

get Report underflow as a warning when abs(results) .le.

ZeroRes and result set to zero

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
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4.23.2.94 boolean com.gams.api.GAMSOPTIONS.isDefinitionEmpty ()

check if the list of GAMS Dash options dictionaries is empty

4.23.2.95 `boolean com.gams.api.GAMSOptions.isDirEmpty ()`

check if the list of input file directories is empty

4.23.2.96 `void com.gams.api.GAMSOptions.readFromStr (String str)`

read from string

Exceptions

<i>GAMSEException</i>	If this GAMSOptions instance has already been disposed,, therefore resources are no longer available..
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4.23.2.97 `void com.gams.api.GAMSOptions.ResetToDefault ()`

Reset all GAMS options to default.

4.23.2.98 `void com.gams.api.GAMSOptions.setAction (GAMSOptions.EAction x)`

set Gams processing requests

Exceptions

<i>GAMSEException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
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4.23.2.99 `void com.gams.api.GAMSOptions.setAllModelTypes (String value)`

Set default solver for all model types which the solver can handle.

Exceptions

<i>GAMSEException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
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4.23.2.100 `void com.gams.api.GAMSOptions.setAllSelectedSolvers (List< String > solvers)`

set all selected solvers

4.23.2.101 `void com.gams.api.GAMSOptions.setBratio (double x)`

set Basis acceptance threshold

Exceptions

<i>GAMSEException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
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4.23.2.102 `void com.gams.api.GAMSOptions.setCase (GAMSOptions.ECase x)`

set Output case option

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.103 void com.gams.api.GAMSOPTIONS.setCERR (int x)

set Compile time error limit

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.104 void com.gams.api.GAMSOPTIONS.setCharSet (GAMSOPTIONS.ECharSet x)

set Character set flag

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
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4.23.2.105 void com.gams.api.GAMSOPTIONS.setCNS (String x)

set default CNS solver

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
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4.23.2.106 void com.gams.api.GAMSOPTIONS.setDFormat (GAMSOPTIONS.EDFormat x)

set Date format

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
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4.23.2.107 void com.gams.api.GAMSOPTIONS.setDNLP (String x)

set default DNLP solver

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
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4.23.2.108 void com.gams.api.GAMSOptions.setDomLim (int *x*)

set Domain violation limit solver default

Exceptions

<i>GAMSException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
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4.23.2.109 void com.gams.api.GAMSOptions.setEMP (String *x*)

set default EMP solver

Exceptions

<i>GAMSException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
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4.23.2.110 void com.gams.api.GAMSOptions.setETLim (double *x*)

set Elapsed time limit in seconds

Exceptions

<i>GAMSException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
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4.23.2.111 void com.gams.api.GAMSOptions.setExecErr (int *x*)

set Execution time error limit

Exceptions

<i>GAMSException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
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4.23.2.112 void com.gams.api.GAMSOptions.setExecMode (GAMSOptions.EExecMode *x*)

set Limits on external programs that are allowed to be executed

Exceptions

<i>GAMSException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
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4.23.2.113 void com.gams.api.GAMSOptions.setFileCase (GAMSOptions.EFileCase *x*)

set Casing of new file names (put,.gdx, ref etc.)

Exceptions

<i>GAMSException</i>	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.114 void com.gams.api.GAMSOptions.setForceWork (GAMSOptions.EForceWork x)

set Force newer GAMS systems to translate and read save files generated by older systems

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.115 void com.gams.api.GAMSOptions.setForLim (int x)

set Gams looping limit

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
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4.23.2.116 void com.gams.api.GAMSOptions.setGDx (String.gdxFileName)

set Gams data exchange file name

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.117 void com.gams.api.GAMSOptions.setgdxCompress (GAMSOptions.EgdxCompress x)

set Compression of generated gdx file

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.118 void com.gams.api.GAMSOptions.setgdxConvert (GAMSOptions.EgdxConvert x)

set Version of gdx files generated (for backward compatibility)

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
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4.23.2.119 void com.gams.api.GAMSOptions.setGridDir (String x)

set Grid file directory

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.120 void com.gams.api.GAMSOptions.setGridScript (String x)

set Grid submission script

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.121 void com.gams.api.GAMSOptions.setHeapLimit (double x)

set Maximum Heap size allowed in MB

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
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4.23.2.122 void com.gams.api.GAMSOptions.setHoldFixed (GAMSOptions.EHoldFixed x)

set Treat fixed variables as constants

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
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4.23.2.123 void com.gams.api.GAMSOptions.setInteger1 (int x)

set Integer communication cell N

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
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4.23.2.124 void com.gams.api.GAMSOptions.setInteger2 (int x)

set Integer communication cell N

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.125 void com.gams.api.GAMSOptions.setInteger3 (int x)

set Integer communication cell N

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.126 void com.gams.api.GAMSOPTIONS.setInteger4 (int x)

set Integer communication cell N

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
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4.23.2.127 void com.gams.api.GAMSOPTIONS.setInteger5 (int x)

set Integer communication cell N

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.128 void com.gams.api.GAMSOPTIONS.setInteractiveSolver (GAMSOPTIONS.EInteractiveSolver x)

set Allow solver to interact via command line

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.129 void com.gams.api.GAMSOPTIONS.setIterLim (int x)

set Iteration limit solver default

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.130 void com.gams.api.GAMSOPTIONS.setKeep (GAMSOPTIONS.EKeep x)

set Do not delete scratch files

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.131 void com.gams.api.GAMSOPTIONS.setLibIncDir (String x)

set LibInclude directory

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.132 void com.gams.api.GAMSOptions.setLicense (String x)

set Use alternative license file

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.133 void com.gams.api.GAMSOptions.setLP (String x)

set default LP solver

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.134 void com.gams.api.GAMSOptions.setMaxProcDir (int x)

set Maximum number of 225* process directories

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
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4.23.2.135 void com.gams.api.GAMSOptions.setMCP (String x)

set default MCP solver

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.136 void com.gams.api.GAMSOptions.setMINLP (String x)

set default MINLP solver

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.137 void com.gams.api.GAMSOptions.setMIP (String x)

set default MIP solver

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.138 void com.gams.api.GAMSOPTIONS.setMIQCP (String x)

set default MIQCP solver

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.139 void com.gams.api.GAMSOPTIONS.setModelTypesForSolvers ()

Set default solver for all model types which the solver can handle.

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.140 void com.gams.api.GAMSOPTIONS.setMPEC (String x)

set default MPEC solver

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.141 void com.gams.api.GAMSOPTIONS.setNLP (String x)

set default NLP solver

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.142 void com.gams.api.GAMSOPTIONS.setNodLim (int x)

set Node limit in branch and bound tree

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.143 void com.gams.api.GAMSOPTIONS.setOpt (int x)

set Fold constant \$ expressions

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.144 void com.gams.api.GAMSOptions.setOptCA (double x)

set Absolute Optimality criterion solver default

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.145 void com.gams.api.GAMSOptions.setOptCR (double x)

set Relative Optimality criterion solver default

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.146 void com.gams.api.GAMSOptions.setOptDir (String x)

set Option file directory

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.147 void com.gams.api.GAMSOptions.setOptFile (int x)

set Default option file

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.148 void com.gams.api.GAMSOptions.setPLicense (String x)

set Privacy license file name

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.149 void com.gams.api.GAMSOptions.setProfile (int x)

set Execution profiling

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.150 void com.gams.api.GAMSOPTIONS.setProfileFile (String x)

set Write profile information to this file

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.151 void com.gams.api.GAMSOPTIONS.setProfileTol (double x)

set Minimum time a statement must use to appear in profile generated output

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.152 void com.gams.api.GAMSOPTIONS.setPutDir (String x)

set Put file directory

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.153 void com.gams.api.GAMSOPTIONS.setQCP (String x)

set default QCP solver

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.154 void com.gams.api.GAMSOPTIONS.setResLim (double x)

set Resource (CPU) solver default limit

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.155 void com.gams.api.GAMSOPTIONS.setRMINLP (String x)

set default RMINLP solver

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.156 void com.gams.api.GAMSOptions.setRMIP (String x)

set default RMIP solver

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.157 void com.gams.api.GAMSOptions.setRMIQCP (String x)

set default RMIQCP solver

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.158 void com.gams.api.GAMSOptions.setRMPEC (String x)

set default RMPEC solver

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.159 void com.gams.api.GAMSOptions.setSavePoint (GAMSOptions.ESavePoint x)

set Save solver point in GDX file

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.160 void com.gams.api.GAMSOptions.setSeed (int x)

set Random number seed

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.161 void com.gams.api.GAMSOptions.setSolPrint (GAMSOptions.ESolPrint x)

set Solution report print option

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.162 void com.gams.api.GAMSOptions.setSolveLink (GAMSOptions.ESolveLink x)

set Solver link options 0 save 1 script 2 module

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.163 void com.gams.api.GAMSOptions.setSolversOptions (List< String > solvers)

set all selected solvers

4.23.2.164 void com.gams.api.GAMSOptions.setStepSum (GAMSOptions.EStepSum x)

set Summary of computing resources used by job steps

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.165 void com.gams.api.GAMSOptions.setStringChk (GAMSOptions.EStringChk x)

set String substitution options

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.166 void com.gams.api.GAMSOptions.setSys11 (GAMSOptions.ESys11 x)

set Dynamic resorting if indices in assignment/data statements are not in natural order

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.167 void com.gams.api.GAMSOptions.setSys12 (int x)

set Pass model with generation errors to solver

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.168 void com.gams.api.GAMSOptions.setSysIncDir (String x)

set SysInclude directory

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.169 void com.gams.api.GAMSOptions.setSysOut (GAMSOptions.ESysOut x)

set Solver Status file reporting option

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.170 void com.gams.api.GAMSOptions.setTabIn (int x)

set Tab spacing

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.171 void com.gams.api.GAMSOptions.setTFormat (GAMSOptions.ETFormat x)

set Time format

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.172 void com.gams.api.GAMSOptions.setThreads (int x)

set Number of threads to be used by a solver

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.173 void com.gams.api.GAMSOptions.setTimer (int x)

set Instruction timer threshold in milli seconds

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.174 void com.gams.api.GAMSOPTIONS.setUser1 (String x)

set User string N

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.175 void com.gams.api.GAMSOPTIONS.setUser2 (String x)

set User string N

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.176 void com.gams.api.GAMSOPTIONS.setUser3 (String x)

set User string N

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.177 void com.gams.api.GAMSOPTIONS.setUser4 (String x)

set User string N

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.178 void com.gams.api.GAMSOPTIONS.setUser5 (String x)

set User string N

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.179 void com.gams.api.GAMSOPTIONS.setWarnings (int x)

set Number of warnings permitted before a run terminates

Exceptions

GAMSEException	If this GAMSOPTIONS instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.180 void com.gams.api.GAMSOptions.setWorkFactor (double x)

set Work space multiplier for some solvers

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.181 void com.gams.api.GAMSOptions.setWorkSpace (double x)

set Work space for some solvers in MB

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.182 void com.gams.api.GAMSOptions.setZeroRes (double x)

set The results of certain operations will be set to zero if abs(result) .le.

ZeroRes

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.183 void com.gams.api.GAMSOptions.setZeroResRep (GAMSOptions.EZeroResRep x)

set Report underflow as a warning when abs(results) .le.

ZeroRes and result set to zero

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.23.2.184 int com.gams.api.GAMSOptions.writeParameterFile (String fileName)

write parameter file

Exceptions

GAMSEException	If this GAMSOptions instance has already been disposed, therefore resources are no longer available..
--------------------------------	-----------------------------------------------------------------------------------------------------------------------

4.23.3 Member Data Documentation

4.23.3.1 `Map<String, String> com.gams.api.GAMSOptions.definitions = null`

Dictionaries for GAMS Dash options.

4.23.3.2 `List<String> com.gams.api.GAMSOptions.IDir = null`

Input file directories (up to 40 are allowed)

4.24 com.gams.api.GAMSOptions.EAction Enum Reference

Gams processing requests.

Public Member Functions

- `String value ()`
- `EAction (String val)`

Static Public Member Functions

- static `EAction lookup (String val)`

Public Attributes

- `RestartAfterSolve` =("R")
- `CompileOnly` =("C")
- `ExecuteOnly` =("E")
- `CompileAndExecute` =("CE")
- `GlueCodeGeneration` =("G")
- `TraceReport` =("GT")
- `UndefinedAction` =(GAMSGlobals.EMPTY_STRING)

4.24.1 Detailed Description

Gams processing requests.

4.25 com.gams.api.GAMSOptions.ECase Enum Reference

Output case option.

Public Member Functions

- `int value ()`

Static Public Member Functions

- static `ECase lookup (int val)`

Public Attributes

- **MixedCase**
- **UpperCase**

4.25.1 Detailed Description

Output case option.

4.26 com.gams.api.GAMSOptions.ECharSet Enum Reference

Character set flag.

Public Member Functions

- int **value** ()

Static Public Member Functions

- static [ECharSet](#) **lookup** (int val)

Public Attributes

- **LimitedGAMSCharSet**
- **AnyChar**

4.26.1 Detailed Description

Character set flag.

4.27 com.gams.api.GAMSOptions.EDFormat Enum Reference

Date format.

Public Member Functions

- int **value** ()

Static Public Member Functions

- static [EDFormat](#) **lookup** (int val)

Public Attributes

- **Slash**
- **Dot**
- **Dash**

4.27.1 Detailed Description

Date format.

4.28 com.gams.api.GAMSOptions.EExecMode Enum Reference

Limits on external programs that are allowed to be executed.

Public Member Functions

- int **value** ()

Static Public Member Functions

- static [EExecMode](#) **lookup** (int val)

Public Attributes

- **EverythingAllowed**
- **InteractiveShellsProhibited**
- **CallAndExecuteProhibited**
- **EchoAndPutOnlyToWorkdir**
- **EchoAndPutProhibited**

4.28.1 Detailed Description

Limits on external programs that are allowed to be executed.

4.29 com.gams.api.GAMSOptions.EFileCase Enum Reference

Casing of new file names (put,.gdx, ref etc.)

Public Member Functions

- int **value** ()

Static Public Member Functions

- static [EFileCase](#) **lookup** (int val)

Public Attributes

- **DefaultCase**
- **UpperCase**
- **LowerCase**

4.29.1 Detailed Description

Casing of new file names (put,.gdx, ref etc.)

4.30 com.gams.api.GAMSOptions.EForceWork Enum Reference

Force newer GAMS systems to translate and read save files generated by older systems.

Public Member Functions

- `int value ()`

Static Public Member Functions

- `static EForceWork lookup (int val)`

Public Attributes

- `NoTranslation`
- `TryTranslation`

4.30.1 Detailed Description

Force newer GAMS systems to translate and read save files generated by older systems.

4.31 com.gams.api.GAMSOptions.EgdxCompress Enum Reference

Compression of generated.gdx file.

Public Member Functions

- `int value ()`

Static Public Member Functions

- `static EgdxCompress lookup (int val)`

Public Attributes

- `DoNotCompressGDX`
- `CompressGDX`

4.31.1 Detailed Description

Compression of generated.gdx file.

4.32 com.gams.api.GAMSOptions.EgdxConvert Enum Reference

Version of gdx files generated (for backward compatibility)

Public Member Functions

- String **value** ()
- **EgdxConvert** (String val)

Static Public Member Functions

- static **EgdxConvert lookup** (String val)

Public Attributes

- **Version5** =("v5")
- **Version6** =("v6")
- **Version7** =("v7")
- **UndefinedgdxConvert** =(GAMSGlobals.EMPTY_STRING)

4.32.1 Detailed Description

Version of gdx files generated (for backward compatibility)

4.33 com.gams.api.GAMSOptions.EHoldFixed Enum Reference

Treat fixed variables as constants.

Public Member Functions

- int **value** ()

Static Public Member Functions

- static **EHoldFixed lookup** (int val)

Public Attributes

- **FixedVarsNotTreatedAsConstants**
- **FixedVarsTreatedAsConstants**

4.33.1 Detailed Description

Treat fixed variables as constants.

4.34 com.gams.api.GAMSOptions.ElInteractiveSolver Enum Reference

Allow solver to interact via command line.

Public Member Functions

- `int value ()`

Static Public Member Functions

- static [EInteractiveSolver](#) `lookup` (int val)

Public Attributes

- **NoInteraction**
- **AllowInteraction**

4.34.1 Detailed Description

Allow solver to interact via command line.

4.35 com.gams.api.GAMSOptions.EKeep Enum Reference

Do not delete scratch files.

Public Member Functions

- `int value ()`

Static Public Member Functions

- static [EKeep](#) `lookup` (int val)

Public Attributes

- **DeleteAllFiles**
- **KeepAllTempFiles**

4.35.1 Detailed Description

Do not delete scratch files.

4.36 com.gams.api.GAMSOptions.ESavePoint Enum Reference

Save solver point in GDX file.

Public Member Functions

- `int value ()`

Static Public Member Functions

- static [ESavePoint](#) **lookup** (int val)

Public Attributes

- **NoPointFile**
- **LastSolvePointFile**
- **EverySolvePointFile**

4.36.1 Detailed Description

Save solver point in GDX file.

4.37 com.gams.api.GAMSOptions.ESolPrint Enum Reference

Solution report print option.

Public Member Functions

- int **value** ()

Static Public Member Functions

- static [ESolPrint](#) **lookup** (int val)

Public Attributes

- **RemoveSolLstFollowingSolves**
- **IncludeSolLstFollowingSolves**
- **SuppressAllSolInfo**

4.37.1 Detailed Description

Solution report print option.

4.38 com.gams.api.GAMSOptions.ESolveLink Enum Reference

Solver link options 0 save 1 script 2 module.

Public Member Functions

- int **value** ()

Static Public Member Functions

- static [ESolveLink](#) **lookup** (int val)

Public Attributes

- **ChainScript**
- **CallScript**
- **CallModule**
- **AsyncGrid**
- **AsyncSimulate**
- **LoadLibrary**

4.38.1 Detailed Description

Solver link options 0 save 1 script 2 module.

4.39 com.gams.api.GAMSOptions.EStepSum Enum Reference

Summary of computing resources used by job steps.

Public Member Functions

- **int value ()**

Static Public Member Functions

- static [EStepSum](#) **lookup** (int val)

Public Attributes

- **NoStepSummmary**
- **StepSummary**

4.39.1 Detailed Description

Summary of computing resources used by job steps.

4.40 com.gams.api.GAMSOptions.EStringChk Enum Reference

String substitution options.

Public Member Functions

- **int value ()**

Static Public Member Functions

- static [EStringChk](#) **lookup** (int val)

Public Attributes

- **NoError**
- **Error**
- **NoErrorRemoveSymbol**

4.40.1 Detailed Description

String substitution options.

4.41 com.gams.api.GAMSOptions.ESys11 Enum Reference

Dynamic resorting if indices in assignment/data statements are not in natural order.

Public Member Functions

- int **value** ()

Static Public Member Functions

- static [ESys11](#) **lookup** (int val)

Public Attributes

- **AutomaticOptimization**
- **NoOptimization**
- **AlwaysOptimize**

4.41.1 Detailed Description

Dynamic resorting if indices in assignment/data statements are not in natural order.

4.42 com.gams.api.GAMSOptions.ESysOut Enum Reference

Solver Status file reporting option.

Public Member Functions

- int **value** ()

Static Public Member Functions

- static [ESysOut](#) **lookup** (int val)

Public Attributes

- **SuppressAdditionalSolverOutput**
- **IncludeAdditionalSolverOutput**

4.42.1 Detailed Description

Solver Status file reporting option.

4.43 com.gams.api.GAMSOptions.ETFormat Enum Reference

Time format.

Public Member Functions

- `int value ()`

Static Public Member Functions

- `static ETFormat lookup (int val)`

Public Attributes

- **Colon**
- **Dot**

4.43.1 Detailed Description

Time format.

4.44 com.gams.api.GAMSOptions.EZeroResRep Enum Reference

Report underflow as a warning when `abs(results) .le.`

Public Member Functions

- `int value ()`

Static Public Member Functions

- `static EZeroResRep lookup (int val)`

Public Attributes

- **NoWarning**
- **IssueWarning**

4.44.1 Detailed Description

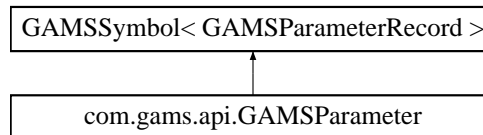
Report underflow as a warning when `abs(results) .le.`

ZeroRes and result set to zero

4.45 com.gams.api.GAMSPParameter Class Reference

This is the representation of a parameter symbol in GAMS.

Inheritance diagram for com.gams.api.GAMSPParameter:



Protected Member Functions

- [GAMSPParameterRecord](#) **CheckAndReturnRecord** (long symItrPtr)

4.45.1 Detailed Description

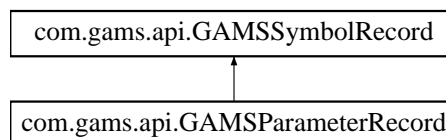
This is the representation of a parameter symbol in GAMS.

It exists in a [GAMSDatabase](#) and contains [GAMSPParameterRecords](#) which one can iterate through.

4.46 com.gams.api.GAMSPParameterRecord Class Reference

This is the representation of a single record of a [GAMSPParameter](#) instance.

Inheritance diagram for com.gams.api.GAMSPParameterRecord:



Public Member Functions

- double [getValue](#) ()
Get the content of this [GAMSPParameterRecord](#) instance.
- void [setValue](#) (double value)
Set the content of this [GAMSPParameterRecord](#) instance.

Additional Inherited Members

4.46.1 Detailed Description

This is the representation of a single record of a [GAMSPParameter](#) instance.

4.46.2 Member Function Documentation

4.46.2.1 double com.gams.api.GAMSPParameterRecord.getValue ()

Get the content of this [GAMSPParameterRecord](#) instance.

Returns

the value

Exceptions

GAMSEException	If this GAMSDatabase instance has already been disposed therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.46.2.2 void com.gams.api.GAMSPParameterRecord.setValue (double *value*)

Set the content of this [GAMSPParameterRecord](#) instance.

Parameters

<i>value</i>	the value
--------------	-----------

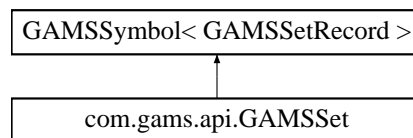
Exceptions

GAMSEException	If this GAMSDatabase instance has already been disposed therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.47 com.gams.api.GAMSSet Class Reference

This is the representation of a set symbol in GAMS.

Inheritance diagram for com.gams.api.GAMSSet:

**Protected Member Functions**

- [GAMSSetRecord](#) **CheckAndReturnRecord** (long symItrPtr)

4.47.1 Detailed Description

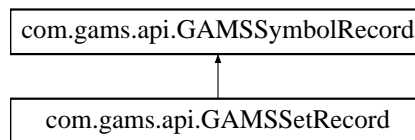
This is the representation of a set symbol in GAMS.

It exists in a [GAMSDatabase](#) and contains [GAMSSetRecords](#) which one can iterate through.

4.48 com.gams.api.GAMSSetRecord Class Reference

This is the representation of a single record of a [GAMSSet](#) instance.

Inheritance diagram for com.gams.api.GAMSSetRecord:



Public Member Functions

- String [getText](#) ()
Get the content of this [GAMSSetRecord](#) instance.
- void [setText](#) (String value)
Set the content of this [GAMSSetRecord](#) instance.

Additional Inherited Members

4.48.1 Detailed Description

This is the representation of a single record of a [GAMSSet](#) instance.

4.48.2 Member Function Documentation

4.48.2.1 String com.gams.api.GAMSSetRecord.getText ()

Get the content of this [GAMSSetRecord](#) instance.

Returns

the content text

Exceptions

GAMSEException	If this GAMSDatabase instance has already been disposed therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.48.2.2 void com.gams.api.GAMSSetRecord.setText (String value)

Set the content of this [GAMSSetRecord](#) instance.

Parameters

<i>value</i>	the content text
--------------	------------------

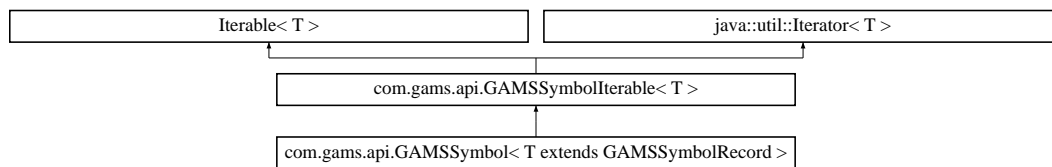
Exceptions

GAMSEException	If this GAMSDatabase instance has already been disposed therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.49 com.gams.api.GAMSSymbol< T extends GAMSSymbolRecord > Class Reference

This is the representation of a symbol in GAMS.

Inheritance diagram for `com.gams.api.GAMSSymbol< T extends GAMSSymbolRecord >`:



Public Member Functions

- `T` [getFirstRecord](#) ()
Get the first record of GAMSSymbol.
- `T` [getFirstRecord](#) (String[] slice)
Retrieve the first record in GAMSSymbol that meets the slice criteria.
- `T` [getLastRecord](#) ()
Get the last record of GAMSSymbol.
- `T` [getLastRecord](#) (String[] slice)
Retrieve the last record in GAMSSymbol that meets the slice criteria.
- `T` [findRecord](#) ()
Find record in [GAMSPParameter](#).
- `T` [findRecord](#) (String key)
Find record in GAMSSymbol.
- `T` [findRecord](#) (String[] keys)
Find record in GAMSSymbol.
- `T` [addRecord](#) (Vector< String > keys)
Add record T to GAMSSymbol.
- `T` [addRecord](#) ()
Add record T to GAMSSymbol.
- `T` [addRecord](#) (String key)
Add record T to GAMSSymbol.
- `T` [addRecord](#) (String[] keys)
Add record T to GAMSSymbol.
- boolean [deleteRecord](#) (String[] keys)
Delete record T from GAMSSymbol.
- boolean [clear](#) ()
Clear symbol.
- void [compact](#) ()
Dispose temporary external resources in database (advanced use)
- void [copySymbol](#) (GAMSSymbol<?> target)
Copy all records of this GAMSSymbol to target GAMSSymbol (if target had records, they will be deleted)
- [GAMSDatabase](#) [getDatabase](#) ()
Get [GAMSDatabase](#) containing GAMSSymbol.
- int [getDimension](#) ()
Get GAMSSymbol dimension.
- String [getName](#) ()
Get GAMSSymbol name.
- String [getText](#) ()
Get GAMSSymbol explanatory text.
- int [getNumberOfRecords](#) ()
Get the number of records of the GAMSSymbol.

- `Iterator< T > iterator ()`
Returns an iterator over a set of elements of type T.
- `void remove ()`
Removes from the underlying collection the last element returned by this iterator (optional operation).
- `boolean hasNext ()`
Checks if the iteration has more elements.
- `T next ()`
Return the next element T in the iteration.

Protected Member Functions

- `GAMSSymbol (GAMSDatabase database, long sPtr)`
Create a GAMS Symbol instance.
- `GAMSSymbol (GAMSDatabase database, String identifier, int dimension, String explanatoryText)`
Create a GAMS Symbol instance.
- `abstract T CheckAndReturnRecord (long symIterPtr)`
This method constructor assumes that the GAMSDatabase instance is not disposed (resources are still available).
- `void resetIteratorInfo ()`
Reset the iteration information.
- `void updateIteratorInfo (long iterationptr)`
Update the iteration information.

Protected Attributes

- `long currentIterPtr = 0`
Current iteration pointer.
- `long currentIterPosition = -1`
Current iteration position.
- `boolean removable = false`
Removeable flag.

4.49.1 Detailed Description

This is the representation of a symbol in GAMS.

It exists in a [GAMSDatabase](#) and contains [GAMSSymbolRecords](#) which one can iterate through. Derived classes are [GAMSEquation](#), [GAMSPParameter](#), [GAMSSet](#) and [GAMSVariable](#).

Parameters

<code>< T ></code>	GAMSSymbolRecord or its subclass
--------------------------	--------------------------------------------------

4.49.2 Constructor & Destructor Documentation

- 4.49.2.1 `com.gams.api.GAMSSymbol< T extends GAMSSymbolRecord >.GAMSSymbol (GAMSDatabase database, long sPtr)` `[protected]`

Create a GAMS Symbol instance.

The constructor assumes that the [GAMSDatabase](#) instance is not disposed (resources are still available) and not record-locked (it is possible to update a record in [GAMSDatabase](#) instance).

Parameters

<i>database</i>	GAMSDatabase instance
<i>sPtr</i>	symbol pointer

Exceptions

GAMSEException	If the GAMSDatabase instance of this symbol has already been disposed.
--------------------------------	----------------------------------------------------------------------------------------

4.49.2.2 `com.gams.api.GAMSSymbol< T extends GAMSSymbolRecord >.GAMSSymbol (GAMSDatabase database, String identifier, int dimension, String explanatoryText)` [protected]

Create a GAMS Symbol instance.

The constructor assumes that the [GAMSDatabase](#) instance is not disposed (resources are still available) and

Parameters

<i>database</i>	GAMSDatabase instance
<i>identifier</i>	symbol identifier
<i>dimension</i>	symbol dimension
<i>explanatoryText</i>	symbol explanatory text

Exceptions

GAMSEException	If the GAMSDatabase instance of this symbol has already been disposed.
--------------------------------	----------------------------------------------------------------------------------------

4.49.3 Member Function Documentation

4.49.3.1 `T com.gams.api.GAMSSymbol< T extends GAMSSymbolRecord >.addRecord (Vector< String > keys)`

Add record T to GAMSSymbol.

Parameters

<i>keys</i>	List of keys
-------------	--------------

Returns

Reference to the added [GAMSPParameterRecord](#)

Exceptions

GAMSEException	If the GAMSSymbolRecord instance containing keys could not be successfully added, or the GAMSDatabase instance of this symbol has already been disposed.
--------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

4.49.3.2 `T com.gams.api.GAMSSymbol< T extends GAMSSymbolRecord >.addRecord ()`

Add record T to GAMSSymbol.

Returns

Reference to the added T

Exceptions

GAMSException	If a GAMSSymbolRecord instance could not be successfully added, or the GAMS-Database instance of this symbol has already been disposed.
-------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------

4.49.3.3 T com.gams.api.GAMSSymbol< T extends GAMSSymbolRecord >.addRecord (String key)

Add record T to GAMSSymbol.

Parameters

<i>key</i>	a key
------------	-------

Returns

Reference to added T

Exceptions

GAMSException	If the GAMSSymbolRecord instance containing the key could not be successfully added, or the GAMSDatabase instance of this symbol has already been disposed.
-------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

4.49.3.4 T com.gams.api.GAMSSymbol< T extends GAMSSymbolRecord >.addRecord (String[] keys)

Add record T to GAMSSymbol.

Parameters

<i>keys</i>	List of keys
-------------	--------------

Returns

Reference to added T

Exceptions

GAMSException	If the GAMSSymbolRecord instance containing keys could not be successfully added, or the GAMSDatabase instance of this symbol has already been disposed.
-------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

4.49.3.5 abstract T com.gams.api.GAMSSymbol< T extends GAMSSymbolRecord >.CheckAndReturnRecord (long symIterPtr) [protected],[pure virtual]

This method constructor assumes that the [GAMSDatabase](#) instance is not disposed (resources are still available).

Parameters

<i>symIterPtr</i>	symbol iteration pointer
-------------------	--------------------------

4.49.3.6 boolean com.gams.api.GAMSSymbol< T extends GAMSSymbolRecord >.clear ()

Clear symbol.

Returns

True if cleared successfully, otherwise false

Exceptions

GAMSEException	If the instance could not be successfully cleared, or the GAMSDatabase instance of this symbol has already been disposed.
--------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------

4.49.3.7 void com.gams.api.GAMSSymbol< T extends [GAMSSymbolRecord](#) >.compact ()

Dispose temporary external resources in database (advanced use)

Exceptions

GAMSEException	If the GAMSDatabase instance of this symbol has already been disposed.
--------------------------------	----------------------------------------------------------------------------------------

4.49.3.8 void com.gams.api.GAMSSymbol< T extends [GAMSSymbolRecord](#) >.copySymbol ([GAMSSymbol](#)<?> target)

Copy all records of this GAMSSymbol to target GAMSSymbol (if target had records, they will be deleted)

Parameters

<i>target</i>	Target GAMSSymbol
---------------	-----------------------------------

Exceptions

GAMSEException	If the target symbol is contained in a record-locked database, or the GAMSDatabase instance of either this symbol or target symbol has already been disposed.
--------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

4.49.3.9 boolean com.gams.api.GAMSSymbol< T extends [GAMSSymbolRecord](#) >.deleteRecord (String[] keys)

Delete record T from [GAMSSymbol](#).

In case [GAMSSymbolRecord](#) T has been successfully deleted, the iteration reference will be reseted as it is no longer possible to iterate to the next symbol using using reference of T.

Parameters

<i>keys</i>	List of keys
-------------	--------------

Returns

true if deleted successfully, otherwise false

Exceptions

GAMSEException	If the GAMSSymbolRecord instance containing the keys could not be successfully deleted, or the GAMSDatabase instance of this symbol has already been disposed.
--------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

4.49.3.10 T com.gams.api.GAMSSymbol< T extends GAMSSymbolRecord >.findRecord ()

Find record in [GAMSPParameter](#).

Returns

Reference to the found [GAMSSetRecord](#) record

Exceptions

GAMSEException	If a GAMSSymbolRecord instance could not be found, or the GAMSDatabase instance of this symbol has already been disposed.
--------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------

4.49.3.11 T com.gams.api.GAMSSymbol< T extends GAMSSymbolRecord >.findRecord (String key)

Find record in GAMSSymbol.

Parameters

<i>key</i>	a key
------------	-------

Returns

Reference to found record

Exceptions

GAMSEException	If a GAMSSymbolRecord instance containing key could not be found, or the GAMS-Database instance of this symbol has already been disposed.
--------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------

4.49.3.12 T com.gams.api.GAMSSymbol< T extends GAMSSymbolRecord >.findRecord (String[] keys)

Find record in GAMSSymbol.

Parameters

<i>keys</i>	List of keys
-------------	--------------

Returns

Reference to found record

Exceptions

GAMSEException	If a GAMSSymbolRecord instance containing keys could not be found, or the GAMS-Database instance of this symbol has already been disposed.
--------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------

4.49.3.13 [GAMSDatabase](#) com.gams.api.GAMSSymbol< T extends GAMSSymbolRecord >.getDatabase ()

Get [GAMSDatabase](#) containing GAMSSymbol.

Returns

Reference to GAMSDatabse object

4.49.3.14 `int com.gams.api.GAMSSymbol< T extends GAMSSymbolRecord >.getDimension ()`

Get GAMSSymbol dimension.

Returns

the dimension of the GAMSSymbol

4.49.3.15 `T com.gams.api.GAMSSymbol< T extends GAMSSymbolRecord >.getFirstRecord ()`

Get the first record of GAMSSymbol.

Returns

Reference to the first [GAMSSymbolRecord](#)

Exceptions

GAMSEException	If the database of this GAMSSymbol instance has already been disposed.
--------------------------------	------------------------------------------------------------------------

4.49.3.16 `T com.gams.api.GAMSSymbol< T extends GAMSSymbolRecord >.getFirstRecord (String[] slice)`

Retrieve the first record in GAMSSymbol that meets the slice criteria.

For example:

```
try {
    System.out.println("Transportation costs from Seattle");
    String[] slice = new String[] { "Seattle", " " };
    GAMSPParameter c = job.OutDB.GetParameter("c");
    GAMSPParameterRecord x = c.getFirstRecord(slice);
    while (c.hasNext()) {
        x = c.next();
        System.out.println(x.getKeys()[1] + ":" + x.getValue());
    }
} catch (GAMSEException e) {
    System.out.println("No records found");
}
```

Parameters

<i>slice</i>	Define filter for elements whose record should be retrieved
--------------	-------------------------------------------------------------

Returns

Reference to record

Exceptions

GAMSEException	If the GAMSDatabase instance of this symbol has already been disposed.
--------------------------------	----------------------------------------------------------------------------------------

4.49.3.17 T com.gams.api.GAMSSymbol< T extends GAMSSymbolRecord >.getLastRecord ()

Get the last record of GAMSSymbol.

Returns

Reference to the last [GAMSSymbolRecord](#)

Exceptions

GAMSEException	If the GAMSDatabase instance of this symbol has already been disposed.
--------------------------------	----------------------------------------------------------------------------------------

4.49.3.18 T com.gams.api.GAMSSymbol< T extends GAMSSymbolRecord >.getLastRecord (String[] slice)

Retrieve the last record in GAMSSymbol that meets the slice criteria.

Parameters

<i>slice</i>	Define filter for elements whose record should be retrieved
--------------	-------------------------------------------------------------

Returns

Reference to record

Exceptions

GAMSEException	If the last GAMSSymbolRecord instance could not be found, or the GAMSDatabase instance of this symbol has already been disposed.
--------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------

4.49.3.19 String com.gams.api.GAMSSymbol< T extends GAMSSymbolRecord >.getName ()

Get GAMSSymbol name.

Returns

the name of the GAMSSymbol

4.49.3.20 int com.gams.api.GAMSSymbol< T extends GAMSSymbolRecord >.getNumberOfRecords ()

Get the number of records of the GAMSSymbol.

Returns

the number of records of the GAMSSymbol

Exceptions

GAMSEException	If the GAMSDatabase instance of this symbol has already been disposed.
--------------------------------	----------------------------------------------------------------------------------------

4.49.3.21 String com.gams.api.GAMSSymbol< T extends GAMSSymbolRecord >.getText ()

Get GAMSSymbol explanatory text.

Returns

the name of the GAMSSymbol

4.49.3.22 `boolean com.gams.api.GAMSSymbol< T extends GAMSSymbolRecord >.hasNext ()`

Checks if the iteration has more elements.

Returns

true Checks if the iteration has more elements.

Exceptions

GAMSEException	If the GAMSDatabase instance of this symbol has already been disposed.
--------------------------------	----------------------------------------------------------------------------------------

4.49.3.23 `Iterator<T> com.gams.api.GAMSSymbol< T extends GAMSSymbolRecord >.iterator ()`

Returns an iterator over a set of elements of type T.

Returns

an iterator over a set of elements of type T.

4.49.3.24 `T com.gams.api.GAMSSymbol< T extends GAMSSymbolRecord >.next ()`

Return the next element T in the iteration.

Returns

element T

Exceptions

GAMSEException	If there is no next record or the GAMSDatabase instance of this symbol has already been disposed.
--------------------------------	-------------------------------------------------------------------------------------------------------------------

4.49.3.25 `void com.gams.api.GAMSSymbol< T extends GAMSSymbolRecord >.remove ()`

Removes from the underlying collection the last element returned by this iterator (optional operation).

Exceptions

GAMSEException	If either there is no GAMSSymbolRecord to remove
GAMSEException	If this symbol instance is contained in a record-locked database, or the GAMSDatabase instance of this symbol has already been disposed, or an element could not be successfully removed.

4.49.3.26 `void com.gams.api.GAMSSymbol< T extends GAMSSymbolRecord >.resetIteratorInfo ()` [protected]

Reset the iteration information.

4.49.3.27 void com.gams.api.GAMSSymbol< T extends GAMSSymbolRecord >.updateIteratorInfo (long *iterationptr*)
[protected]

Update the iteration information.

Exceptions

GAMSEException	If the GAMSDatabase instance of this symbol has already been disposed.
--------------------------------	----------------------------------------------------------------------------------------

4.49.4 Member Data Documentation

4.49.4.1 long com.gams.api.GAMSSymbol< T extends GAMSSymbolRecord >.currentIterPosition = -1 [protected]

Current iteration position.

4.49.4.2 long com.gams.api.GAMSSymbol< T extends GAMSSymbolRecord >.currentIterPtr = 0 [protected]

Current iteration pointer.

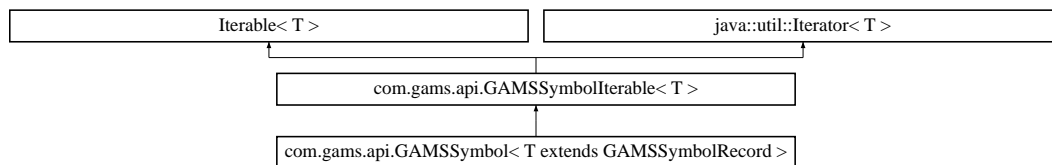
4.49.4.3 boolean com.gams.api.GAMSSymbol< T extends GAMSSymbolRecord >.removable = false [protected]

Removeable flag.

4.50 com.gams.api.GAMSSymbolIterable< T > Interface Reference

An iterator over a collection.

Inheritance diagram for com.gams.api.GAMSSymbolIterable< T >:



Public Member Functions

- Iterator< T > [iterator](#) ()
Returns an iterator over a set of elements of type T.
- void [remove](#) ()
Removes from the underlying collection the last element returned by the iterator.
- boolean [hasNext](#) ()
Checks if the iteration has more elements.
- T [next](#) ()
Returns the next element T in the iteration.

4.50.1 Detailed Description

An iterator over a collection.

The behavior of an iterator is unspecified if the underlying collection is modified while the iteration is in progress.

Parameters

<code><T></code>	an element in a collection
------------------------	----------------------------

4.50.2 Member Function Documentation

4.50.2.1 `boolean com.gams.api.GAMSSymbolIterable< T >.hasNext ()`

Checks if the iteration has more elements.

Returns

true if the iterator has more elements, false otherwise.

4.50.2.2 `Iterator<T> com.gams.api.GAMSSymbolIterable< T >.iterator ()`

Returns an iterator over a set of elements of type T.

Returns

Iterator of type T

4.50.2.3 `T com.gams.api.GAMSSymbolIterable< T >.next ()`

Returns the next element T in the iteration.

Returns

the next element T in the iteration.

Exceptions

<i>GAMSEException</i>	If the next element is not found
---------------------------------------	----------------------------------

4.50.2.4 `void com.gams.api.GAMSSymbolIterable< T >.remove ()`

Removes from the underlying collection the last element returned by the iterator.

This method can be called only once per call to [`next\(\)`](#). The behavior of an iterator is unspecified if the underlying collection is modified while the iteration is in progress in any way other than by calling this method.

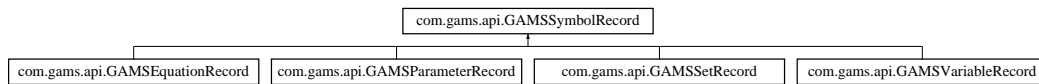
Exceptions

<i>GAMSEException</i>	if the last element could not be removed.
---------------------------------------	-------------------------------------------

4.51 `com.gams.api.GAMSSymbolRecord` Class Reference

This is the representation of a single record of a `GAMSSymbol` instance.

Inheritance diagram for `com.gams.api.GAMSSymbolRecord`:



Public Member Functions

- `String[] getKeys ()`
Retrieve keys of this *GAMSSymbolRecord* instance.

Protected Member Functions

- `GAMSSymbolRecord (GAMSSymbol<?> symbol, long ptr)`
Create a new *GAMSSymbolRecord* instance.
- `GAMSSymbolRecord (GAMSSymbolRecord record)`
Create a new *GAMSSymbolRecord* instance.

4.51.1 Detailed Description

This is the representation of a single record of a *GAMSSymbol* instance.

Derived classes are *GAMSEquationRecord*, *GAMSPParameterRecord*, *GAMSSetRecord* and *GAMSVVariableRecord*.

4.51.2 Constructor & Destructor Documentation

4.51.2.1 `com.gams.api.GAMSSymbolRecord.GAMSSymbolRecord (GAMSSymbol<?> symbol, long ptr)` [protected]

Create a new *GAMSSymbolRecord* instance.

The constructor assumes that the *GAMSDatabase* instance is not disposed (resources are still available).

Parameters

<i>record</i>	<i>GAMSSymbolRecord</i> to initialize this instance from
---------------	----------------------------------------------------------

Exceptions

<i>GAMSEException</i>	If the <i>GAMSDatabase</i> instance of this symbol has already been disposed, therefore resources are no longer available.
-----------------------	----------------------------------------------------------------------------------------------------------------------------

4.51.2.2 `com.gams.api.GAMSSymbolRecord.GAMSSymbolRecord (GAMSSymbolRecord record)` [protected]

Create a new *GAMSSymbolRecord* instance.

The constructor assumes that the *GAMSDatabase* instance is not disposed (resources are still available).

Parameters

<i>record</i>	<i>GAMSSymbolRecord</i> to initialize this instance from
---------------	----------------------------------------------------------

Exceptions

<i>GAMSEException</i>	If the <i>GAMSDatabase</i> instance of this symbol has already been disposed, therefore resources are no longer available.
-----------------------	----------------------------------------------------------------------------------------------------------------------------

4.51.3 Member Function Documentation

4.51.3.1 String [] com.gams.api.GAMSSymbolRecord.getKeys ()

Retrieve keys of this [GAMSSymbolRecord](#) instance.

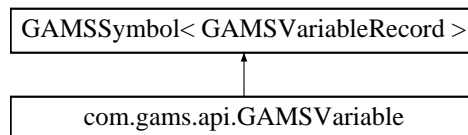
Exceptions

GAMSEException	If a record could not be retrieved, or the GAMSDatabase instance of this symbol has already been disposed therefore resources are no longer available.
--------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------

4.52 com.gams.api.GAMSVariable Class Reference

This is the representation of a variable symbol in GAMS.

Inheritance diagram for com.gams.api.GAMSVariable:



Public Member Functions

- GAMSGlobals.VarType [getVarType](#) ()
Retrieve subtype of the [GAMSVariable](#) object.

Protected Member Functions

- [GAMSVariableRecord](#) **CheckAndReturnRecord** (long symIterPtr)

4.52.1 Detailed Description

This is the representation of a variable symbol in GAMS.

It exists in a [GAMSDatabase](#) and contains [GAMSVariableRecord](#)s which one can iterate through.

4.52.2 Member Function Documentation

4.52.2.1 GAMSGlobals.VarType com.gams.api.GAMSVariable.getVarType ()

Retrieve subtype of the [GAMSVariable](#) object.

Returns

the enumerate VarType of the [GAMSVariable](#)

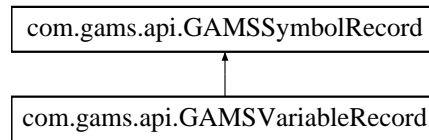
See Also

[GAMSGlobals.VarType](#)

4.53 com.gams.api.GAMSVariableRecord Class Reference

This is the representation of a single record of a [GAMSVariable](#) instance.

Inheritance diagram for com.gams.api.GAMSVariableRecord:



Public Member Functions

- double [getLevel](#) ()
Retrieve the the level of this [GAMSVariableRecord](#) instance.
- void [setLevel](#) (double value)
Set the level of this [GAMSVariableRecord](#) instance.
- double [getMarginal](#) ()
Retrieve the marginal of this [GAMSVariableRecord](#) instance.
- void [setMarginal](#) (double value)
Set the marginal of this [GAMSVariableRecord](#) instance.

Additional Inherited Members

4.53.1 Detailed Description

This is the representation of a single record of a [GAMSVariable](#) instance.

4.53.2 Member Function Documentation

4.53.2.1 double com.gams.api.GAMSVariableRecord.getLevel ()

Retrieve the the level of this [GAMSVariableRecord](#) instance.

Returns

the level value

Exceptions

GAMSEException	If this GAMSDatabase instance has already been disposed therefore resources are no longer available.
--------------------------------	----------------------------------------------------------------------------------------------------------------------

4.53.2.2 double com.gams.api.GAMSVariableRecord.getMarginal ()

Retrieve the marginal of this [GAMSVariableRecord](#) instance.

Returns

the marginal value

Exceptions

GAMSException	If this GAMSDatabase instance has already been disposed therefore resources are no longer available.
-------------------------------	----------------------------------------------------------------------------------------------------------------------

4.53.2.3 void com.gams.api.GAMSVariableRecord.setLevel (double value)

Set the level of this [GAMSVariableRecord](#) instance.

Parameters

<i>value</i>	the level value
--------------	-----------------

Exceptions

GAMSException	If this GAMSDatabase instance has already been disposed therefore resources are no longer available.
-------------------------------	----------------------------------------------------------------------------------------------------------------------

4.53.2.4 void com.gams.api.GAMSVariableRecord.setMarginal (double value)

Set the marginal of this [GAMSVariableRecord](#) instance.

Parameters

<i>value</i>	the marginal value
--------------	--------------------

Exceptions

GAMSException	If this GAMSDatabase instance has already been disposed therefore resources are no longer available.
-------------------------------	----------------------------------------------------------------------------------------------------------------------

4.54 com.gams.api.GAMSWorkspace Class Reference

Public Member Functions

- [GAMSWorkspace](#) ()
- [GAMSWorkspace](#) ([GAMSWorkspaceInfo](#) info)
- [GAMSWorkspace](#) (String [workingDirectory](#), String [systemDirectory](#), boolean [debug](#))
- [GAMSJob addJobFromGamsLib](#) (String modelName)
Retrieves model from GAMS Model Library.
- [GAMSJob addJobFromTestLib](#) (String modelName)
Retrieves model from GAMS Test Library.
- [GAMSJob addJobFromDataLib](#) (String modelName)
Retrieves model from GAMS Data Utilities Library.
- [GAMSJob addJobFromFinLib](#) (String modelName)
Retrieves model from GAMS Practical Financial Optimization Library.
- [GAMSJob addJobFromEmpLib](#) (String modelName)
Retrieves model from Extended Math Programming Library.
- [GAMSJob addJobFromFile](#) (String fileName)
Create [GAMSJob](#) from model file.
- [GAMSJob addJobFromFile](#) (String fileName, String jobName)
Create [GAMSJob](#) from model file.

- [GAMSJob addJobFromFile](#) (String fileName, [GAMSCheckpoint](#) checkpoint, String jobName)
Create [GAMSJob](#) from model file.
- [GAMSDatabase addDatabaseFromGDX](#) (String.gdxFileName)
Database creation from an existing GDX file.
- [GAMSDatabase addDatabaseFromGDX](#) (String.gdxFileName, String databaseName)
Database creation from an existing GDX file.
- [GAMSJob addJobFromString](#) (String source)
Create [GAMSJob](#) from string model source.
- [GAMSJob addJobFromString](#) (String source, [GAMSCheckpoint](#) checkpoint)
Create [GAMSJob](#) from string model source.
- [GAMSJob addJobFromString](#) (String source, [GAMSCheckpoint](#) checkpoint, String jobName)
Create [GAMSJob](#) from string model source.
- [GAMSDatabase addDatabase](#) ()
Create an empty [GAMSDatabase](#).
- [GAMSDatabase addDatabase](#) (String databaseName)
Create an empty [GAMSDatabase](#).
- [GAMSCheckpoint addCheckpoint](#) ()
Create a [GAMSCheckpoint](#).
- [GAMSCheckpoint addCheckpoint](#) (String checkpointName)
Create [GAMSCheckpoint](#).
- [GAMSOptions addOptions](#) ()
Create [GAMSOptions](#).
- String [workingDirectory](#) ()
Retrieve the working directory.
- String [systemDirectory](#) ()
Retrieve the system directory.
- boolean [debug](#) ()
Retrieve the debug mode.
- void [debug](#) (boolean debug)
Set the debug mode.

4.54.1 Detailed Description

The [GAMSWorkspace](#) is the base class in the com.gams.api package. Most instances of API program under the package (such as [GAMSDatabase](#), [GAMSJob](#), and [GAMSCheckpoint](#)) have to be created by an "add" method provided by [GAMSWorkspace](#).

When creating a [GAMSWorkspace](#) instance, it is possible to use a default configuration or specify attributes (system directory, working directory, and debug flag) of the instance. The system directory is the directory where GAMS system has been installed. It provides most resources from GAMS required by an API program. The working directory is the anchor directory where all file based operation inside a running GAMS model should be relative to this location (e.g. \$GDXIN and \$include). Though there are also options to add input search paths (e.g. IDir) and output path (e.g. PutDir) to specify other file system locations provided by [GAMSOptions](#). The debug flag can be enabled when more information is needed during the run-time.

For a default configuration, a [GAMSWorkspace](#) instance is created by the default constructor without a parameter. In such case, the system directory will be determined automatically from the environment variable ("PATH" on Window-based platform, "DYLD_LIBRARY_PATH" on Mac OS family, or "LD_LIBRARY_PATH" on other Unix-based platforms) which must be set up before running a program. If the directory found from the environment variable is not a valid GAMS system directory, [GAMSException](#) will be raised during the run-time. The working directory will be determined from [GAMSGlobals.workingDirectory](#) which by default is the user working directory (the java property "user.dir"). The debug flag is disabled by default.

To create a [GAMSWorkspace](#) instance with a user-defined configuration, it is possible to specify attributes (system directory, working directory, and debug flag) by either using one of the [GAMSWorkspace](#) constructors or first

creating a [GAMSWorkspaceInfo](#) instance that contains attribute values and passing it as input parameter for one of the [GAMSWorkspace](#) constructors. Either way, the specified system directory attribute will be verified and then compared with the location of the GAMS installation which is determined from the the environment variable. If the specified directory is not valid or there is a conflict with the system directory found from the environment variable, [GAMSEException](#) will be raised during the run-time. The specified working directory attribute will also be verified. If the specified directory does not exist or it is not a valid directory, [GAMSEException](#) will also be raised during the run-time.

In a situation where there is more than one GAMS installation existing on the machine, one potential problem occurs when there is a conflict between the system directory found from environment variable and the user-defined system directory. In such case, [GAMSEException](#) will be raised during the execution of a program. Another potential problem occurs from an incorrect setting "java.library.path" when running a program. For most operations performed by an API program such as option or database operations, it is important to set java property "java.library.path" to the directory containing shared libraries when running a program. If the property is not set or it contains a shared library that is incompatible with the libraries under the system directory found from the environment variable, either `java.lang.UnsatisfiedLinkError` or [GAMSEException](#) will be raised during the run-time.

See Also

[GAMSCheckpoint](#)
[GAMSDatabase](#)
[GAMSGlobals](#)
[GAMSJob](#)
[GAMSOptions](#)
[GAMSWorkspaceInfo](#)

4.54.2 Constructor & Destructor Documentation

4.54.2.1 `com.gams.api.GAMSWorkspace.GAMSWorkspace ()`

Construct a new [GAMSWorkspace](#) instance using the default configuration.

The GAMS system directory of the workspace will be searched from the environment variable ("PATH" on Window-based platform, "DYLD_LIBRARY_PATH" on Mac-OS family, or "LD_LIBRARY_PATH" on other Unix-based platforms). The first GAMS installation directory found from the variable will be taken. If the environment variable does not contain a valid GAMS system directory, [GAMSEException](#) will be raised.

For the working directory of the workspace, the user working directory (the java system property "user.dir", also specified by [GAMSGlobals.workingDirectory](#)) will be taken.

Exceptions

GAMSEException	If the environment variable does not contain a valid GAMS system directory or its sub directory.
--------------------------------	--------------------------------------------------------------------------------------------------

See Also

[GAMSGlobals.workingDirectory](#)

4.54.2.2 `com.gams.api.GAMSWorkspace.GAMSWorkspace (GAMSWorkspaceInfo info)`

Construct a new [GAMSWorkspace](#) instance from [GAMSWorkspaceInfo](#) instance.

In case the specified system directory of the [GAMSWorkspaceInfo](#) instance is null or empty string, GAMS system directory will be searched from the environment variable ("PATH" on Window-based platform, "DYLD_LIBRARY_PATH" on Mac-os family, or "LD_LIBRARY_PATH" on other Unix-based platforms). The first GAMS installation directory found from the variable will be taken. If the environment variable does not contain a valid GAMS system directory, [GAMSEException](#) will be raised.

Otherwise, the specified system directory will be first verified its existence and then compared with the location of the GAMS installation that is determined which is automatically from the environment variable. If the specified directory does not exist or it is not a directory or it conflicts with the first path found from the environment variable, [GAMSEException](#) will be raised.

In case the specified working directory is null or empty string, the user working directory (the java system property "user.dir") will be taken. Otherwise, the specified working directory will be verified its existence. If the specified directory does not exist or it is not a directory, [GAMSEException](#) will be raised.

Parameters

<i>info</i>	a GAMSWorkspaceInfo instance containing information about the user-specified working directory, the user-specified GAMS system directory, and debug status.
-------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Exceptions

GAMSEException	If either a specified GAMS system directory or working directory does not exist, or the environment variable does not contain a valid GAMS system directory or its sub directory, or a specified GAMS system directory conflicts with the GAMS system directory first found from the environment variable.
--------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

See Also

[GAMSWorkspaceInfo](#)

4.54.2.3 com.gams.api.GAMSWorkspace.GAMSWorkspace (String *workingDirectory*, String *systemDirectory*, boolean *debug*)

Construct a new [GAMSWorkspace](#) instance.

In case the specified system directory of the [GAMSWorkspaceInfo](#) instance is null or empty string, GAMS system directory will be searched from the environment variable ("PATH" on Window-based platform, "DYLD_LIBRARY_PATH" on Mac-os family, or "LD_LIBRARY_PATH" on other Unix-based platforms). The first GAMS installation directory found from the variable will be taken. If the environment variable does not contain a valid GAMS system directory, [GAMSEException](#) will be raised.

Otherwise, the specified system directory will be first verified its existence and then compared with the location of the GAMS installation which is determined automatically from the environment variable. If the specified directory does not exist or it is not a directory or it conflicts with the first path found from the environment variable, [GAMSEException](#) will be raised.

In case the specified working directory is null or empty string, the user working directory (the java system property "user.dir") will be taken. Otherwise, the specified working directory will be verified its existence. If the specified directory does not exist or it is not a directory, [GAMSEException](#) will be raised.

Parameters

<i>workingDirectory</i>	the user-specified working directory where all GAMS files will be stored
<i>systemDirectory</i>	the user-specified GAMS system directory
<i>debug</i>	debug flag

Exceptions

GAMSEException	If either a specified GAMS system directory or working directory does not exist, or the environment variable does not contain a valid GAMS system directory or its sub directory, or a specified GAMS system directory conflicts with the GAMS system directory first found from the environment variable.
--------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

4.54.3 Member Function Documentation

4.54.3.1 `GAMSCheckpoint com.gams.api.GAMSWorkspace.addCheckpoint ()`

Create a [GAMSCheckpoint](#).

The name of a [GAMSCheckpoint](#) object is generated automatically.

Returns

Reference to [GAMSCheckpoint](#) object

Exceptions

GAMSEException	If GAMSCheckpoint could not be successfully created
--------------------------------	---------------------------------------------------------------------

4.54.3.2 `GAMSCheckpoint com.gams.api.GAMSWorkspace.addCheckpoint (String checkpointName)`

Create [GAMSCheckpoint](#).

Parameters

<i>checkpointName</i>	Identifier of GAMSCheckpoint or filename for existing checkpoint
-----------------------	----------------------------------------------------------------------------------

Returns

Reference to [GAMSCheckpoint](#) object

Exceptions

GAMSEException	If GAMSCheckpoint could not be successfully created
--------------------------------	---------------------------------------------------------------------

4.54.3.3 `GAMSDatabase com.gams.api.GAMSWorkspace.addDatabase ()`

Create an empty [GAMSDatabase](#).

The name of a [GAMSDatabase](#) object is generated automatically.

Returns

Reference to [GAMSDatabase](#) object

Exceptions

GAMSEException	If GAMSDatabase could not be successfully created
--------------------------------	-------------------------------------------------------------------

4.54.3.4 `GAMSDatabase com.gams.api.GAMSWorkspace.addDatabase (String databaseName)`

Create an empty [GAMSDatabase](#).

Parameters

<i>databaseName</i>	Identifier of GAMSDatabase
---------------------	--------------------------------------------

Returns

Reference to [GAMSDatabase](#) object

Exceptions

GAMSEException	If GAMSDatabase could not be successfully created
--------------------------------	-------------------------------------------------------------------

4.54.3.5 GAMSDatabase com.gams.api.GAMSWorkspace.addDatabaseFromGDX (String *gdxFileName*)

Database creation from an existing GDX file.

Parameters

<i>gdxFileName</i>	File to initialize Database from
--------------------	----------------------------------

Returns

Reference of [GAMSDatabase](#) instance

Exceptions

GAMSEException	If GAMSDatabase could not be successfully created
--------------------------------	-------------------------------------------------------------------

4.54.3.6 GAMSDatabase com.gams.api.GAMSWorkspace.addDatabaseFromGDX (String *gdxFileName*, String *databaseName*)

Database creation from an existing GDX file.

Parameters

<i>gdxFileName</i>	File to initialize Database from
<i>databaseName</i>	Identifier of GAMSDatabase (determined automatically if null)

Returns

Reference of [GAMSDatabase](#) instance

Exceptions

GAMSEException	If GAMSDatabase could not be successfully created
--------------------------------	-------------------------------------------------------------------

4.54.3.7 GAMSJob com.gams.api.GAMSWorkspace.addJobFromDataLib (String *modelName*)

Retrieves model from GAMS Data Utilities Library.

Parameters

<i>modelName</i>	input model name (without path)
------------------	---------------------------------

Returns

Reference to [GAMSJob](#) instance

Exceptions

GAMSEException	If the model name could not be found in GAMS Data Utilities Library
--------------------------------	---------------------------------------------------------------------

4.54.3.8 **GAMSJob** com.gams.api.GAMSWorkspace.addJobFromEmpLib (*String modelName*)

Retrieves model from Extended Math Programming Library.

Parameters

<i>modelName</i>	input model name (without path)
------------------	---------------------------------

Returns

Reference to [GAMSJob](#) instance

Exceptions

GAMSEException	If the model name could not be found in GAMS Extended Math Programming Library
--------------------------------	--------------------------------------------------------------------------------

4.54.3.9 **GAMSJob** com.gams.api.GAMSWorkspace.addJobFromFile (*String fileName*)

Create [GAMSJob](#) from model file.

Parameters

<i>fileName</i>	Source file name
-----------------	------------------

Returns

Reference to [GAMSJob](#) instance

Exceptions

GAMSEException	If GAMSJob could not be successfully created from the source file name
--------------------------------	----------------------------------------------------------------------------------------

4.54.3.10 **GAMSJob** com.gams.api.GAMSWorkspace.addJobFromFile (*String fileName*, *String jobName*)

Create [GAMSJob](#) from model file.

Parameters

<i>fileName</i>	Source file name
<i>jobName</i>	Job name (determined automatically if null)

Returns

Reference to [GAMSJob](#) instance

Exceptions

GAMSEException	If GAMSJob could not be successfully created
--------------------------------	--------------------------------------------------------------

4.54.3.11 GAMSJob com.gams.api.GAMSWorkspace.addJobFromFile (String *fileName*, GAMSCheckpoint *checkpoint*, String *jobName*)

Create [GAMSJob](#) from model file.

Parameters

<i>fileName</i>	Source file name
<i>checkpoint</i>	GAMSCheckpoint to initialize GAMSJob from
<i>jobName</i>	Job name (determined automatically if null)

Returns

Reference to [GAMSJob](#) instance

Exceptions

GAMSEException	If GAMSJob could not be successfully created
--------------------------------	--------------------------------------------------------------

4.54.3.12 GAMSJob com.gams.api.GAMSWorkspace.addJobFromFinLib (String *modelName*)

Retrieves model from GAMS Practical Financial Optimization Library.

Parameters

<i>modelName</i>	input model name (without path)
------------------	---------------------------------

Returns

Reference to [GAMSJob](#) instance

Exceptions

GAMSEException	If the model name could not be found in GAMS Financial Optimization Library
--------------------------------	-----------------------------------------------------------------------------

4.54.3.13 GAMSJob com.gams.api.GAMSWorkspace.addJobFromGamsLib (String *modelName*)

Retrieves model from GAMS Model Library.

Parameters

<i>modelName</i>	input model name (without path)
------------------	---------------------------------

Returns

Reference to [GAMSJob](#) instance

Exceptions

GAMSEException	If the model name could not be found in GAMS Model Library
--------------------------------	------------------------------------------------------------

4.54.3.14 **GAMSJob** `com.gams.api.GAMSWorkspace.addJobFromString (String source)`

Create [GAMSJob](#) from string model source.

Parameters

<i>source</i>	GAMS model as string
---------------	----------------------

Returns

Reference to [GAMSJob](#) object

Exceptions

GAMSEException	If GAMSJob could not be successfully created
--------------------------------	--------------------------------------------------------------

4.54.3.15 **GAMSJob** `com.gams.api.GAMSWorkspace.addJobFromString (String source, GAMSCheckpoint checkpoint)`

Create [GAMSJob](#) from string model source.

The job name is generated automatically.

Parameters

<i>source</i>	GAMS model as string
<i>checkpoint</i>	GAMSCheckpoint to initialize GAMSJob from

Returns

Reference to [GAMSJob](#) object

Exceptions

GAMSEException	If GAMSJob could not be successfully created
--------------------------------	--------------------------------------------------------------

4.54.3.16 **GAMSJob** `com.gams.api.GAMSWorkspace.addJobFromString (String source, GAMSCheckpoint checkpoint, String jobName)`

Create [GAMSJob](#) from string model source.

Parameters

<i>source</i>	GAMS model as string
<i>checkpoint</i>	GAMSCheckpoint to initialize GAMSJob from
<i>jobName</i>	Job name

Returns

Reference to [GAMSJob](#) object

Exceptions

GAMSEException	If GAMSJob could not be successfully created
--------------------------------	--------------------------------------------------------------

4.54.3.17 GAMSJob com.gams.api.GAMSWorkspace.addJobFromTestLib (String *modelName*)

Retrieves model from GAMS Test Library.

Parameters

<i>modelName</i>	input model name (without path)
------------------	---------------------------------

Returns

Reference to [GAMSJob](#) instance

Exceptions

GAMSEException	If the model name could not be found in GAMS Test Library
--------------------------------	-----------------------------------------------------------

4.54.3.18 GAMSOPTIONS com.gams.api.GAMSWorkspace.addOptions ()

Create [GAMSOPTIONS](#).

Returns

Reference to [GAMSOPTIONS](#) object

Exceptions

GAMSEException	If GAMSOPTIONS could not be successfully created
--------------------------------	------------------------------------------------------------------

4.54.3.19 boolean com.gams.api.GAMSWorkspace.debug ()

Retrieve the debug mode.

Returns

debug flag (true if in debug mode, false otherwise)

4.54.3.20 void com.gams.api.GAMSWorkspace.debug (boolean *debug*)

Set the debug mode.

Parameters

<i>debug</i>	boolean flag to determine a debug mode (true if in debug mode, false otherwise)
--------------	---------------------------------------------------------------------------------

4.54.3.21 String com.gams.api.GAMSWorkspace.systemDirectory ()

Retrieve the system directory.

Returns

String described the system directory

4.54.3.22 String com.gams.api.GAMSWorkspace.workingDirectory ()

Retrieve the working directory.

Returns

String described the working directory

4.55 com.gams.api.GAMSWorkspaceInfo Class Reference

Public Member Functions

- [GAMSWorkspaceInfo](#) ()
Constructs a new [GAMSWorkspaceInfo](#) instance.
- [GAMSWorkspaceInfo](#) (String workingDir, String systemDir, boolean debugFlag)
Constructs a new [GAMSWorkspaceInfo](#) instance.
- void [setWorkingDirectory](#) (String directory)
Set GAMS working directory.
- String [getWorkingDirectory](#) ()
Get GAMS working directory from this [GAMSWorkspaceInfo](#) instance.
- void [setSystemDirectory](#) (String directory)
Set GAMS system directory.
- String [getSystemDirectory](#) ()
Get GAMS system directory from this [GAMSWorkspaceInfo](#) instance.
- void [setDebug](#) (boolean debugFlag)
Set GAMS debug mode.
- boolean [isDebugged](#) ()
Get GAMS debug mode from this [GAMSWorkspaceInfo](#) instance.

4.55.1 Detailed Description

The [GAMSWorkspaceInfo](#) can be used as input parameter for the [GAMSWorkspace](#) constructor. The [GAMSWorkspaceInfo](#) contains essential information for initializing [GAMSWorkspace](#); GAMS working directory, GAMS System directory, and GAMS debug flag.

GAMS working directory anchors for all file-based operations, whereas GAMS system directory is the directory where GAMS has been installed. If not initialized, the working directory is determined automatically, as in user's temporary folder, when creating a workspace.

GAMS system directory is the directory where GAMS has been installed. If not initialized, the system directory is determined automatically from the system property java.library.path, when creating a workspace.

GAMS debug flag indicates whether to produce debug messages to the standard output during execution.

For example:

```
GAMSWorkspaceInfo wsInfo = new GAMSWorkspaceInfo();
String workingDirectory = System.getProperty("user.dir");
wsInfo.workingDirectory( workingDirectory );
wsInfo.debug(true);
GAMSWorkspace workspace = new GAMSWorkspace(wsInfo);
```

4.55.2 Constructor & Destructor Documentation

4.55.2.1 com.gams.api.GAMSWorkspaceInfo.GAMSWorkspaceInfo ()

Constructs a new [GAMSWorkspaceInfo](#) instance.

The default value of GAMS working directory and GAMS System directory are NULL, and of GAMS debug flag is false.

4.55.2.2 com.gams.api.GAMSWorkspaceInfo.GAMSWorkspaceInfo (String *workingDir*, String *systemDir*, boolean *debugFlag*)

Constructs a new [GAMSWorkspaceInfo](#) instance.

Parameters

<i>workingDir</i>	the name of working Directory, anchor for all file-based operations
<i>systemDir</i>	the name of system directory, where GAMS is installed
<i>debugFlag</i>	Boolean flag for debug mode

4.55.3 Member Function Documentation

4.55.3.1 String com.gams.api.GAMSWorkspaceInfo.getSystemDirectory ()

Get GAMS system directory from this [GAMSWorkspaceInfo](#) instance.

Returns

the name of system directory (NULL if not initialized).

4.55.3.2 String com.gams.api.GAMSWorkspaceInfo.getWorkingDirectory ()

Get GAMS working directory from this [GAMSWorkspaceInfo](#) instance.

Returns

the name of GAMS working directory (null if not initialized).

4.55.3.3 boolean com.gams.api.GAMSWorkspaceInfo.isDebugged ()

Get GAMS debug mode from this [GAMSWorkspaceInfo](#) instance.

Returns

Boolean flag for debug mode (false if not initialized)

4.55.3.4 void com.gams.api.GAMSWorkspaceInfo.setDebug (boolean *debugFlag*)

Set GAMS debug mode.

The debug mode will be verified later when a [GAMSWorkspace](#) instance is created from the information specified by this [GAMSWorkspaceInfo](#) instance.

Parameters

<i>debugFlag</i>	Boolean flag for debug mode
------------------	-----------------------------

4.55.3.5 void com.gams.api.GAMSWorkspaceInfo.setSystemDirectory (String *directory*)

Set GAMS system directory.

The specified directory will be verified later when a [GAMSWorkspace](#) instance is created from the information specified by this [GAMSWorkspaceInfo](#) instance.

Parameters

<i>directory</i>	the name of system directory.
------------------	-------------------------------

See Also

[GAMSWorkspace](#)

4.55.3.6 void com.gams.api.GAMSWorkspaceInfo.setWorkingDirectory (String *directory*)

Set GAMS working directory.

The specified directory will be verified later when a [GAMSWorkspace](#) instance is created from the information specified by this [GAMSWorkspaceInfo](#) instance.

Parameters

<i>directory</i>	the name of GAMS working directory, anchor all file-based operations
------------------	----------------------------------------------------------------------

See Also

[GAMSWorkspace](#)

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