

Rational® Rose RealTime® Patch Notes

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This file is located in: <ROSERT_HOME>/rosert_2003_06_00_patch_note.html

Version 2003.06.00

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Purpose of this Patch

This patch addresses defects (see [Defects Addressed in this Patch](#)), and includes a new feature for using GUIDs (see [Advanced Handling of Globally Unique Identifiers \(GUIDs\)](#)).

Files Included in This Patch

The following files are included.

Note: The paths are relative to the <ROSERT_HOME> directory.

Windows

RQART/bin/win32/rqart.dll
RQART/bin/win32/rqartRes.dll
bin/win32/RoseRT.exe
bin/win32/RrtRes.dll
bin/win32/rtcgen.exe
bin/win32/rtcpggen.exe

UNIX

RQART/bin/sun5/librqart.so
RQART/bin/sun5/rqart.rsb
bin/sun5/RationalRose.tlb
bin/sun5/RoseRT
bin/sun5/RoseRT.rsb
bin/sun5/rtcgen
bin/sun5/rtcpggen

What to do Before Installation

Verify that there is a valid version of Rational Rose RealTime v2003.06.00 installed and ensure that file and directory permissions allow writing to the files listed in [Files Included in this Patch](#).

If you installed Rational Rose RealTime using a Network or Administrative installation, the patch applies to the server computer only. Contact your administrator to install this patch.

Note: Some Windows virus checking software will warn you about gzip type files (with a .gz extension). This warning can be safely ignored. There should be no viruses reported during the extraction of the patch files when using WinZip.

How to Install this Patch

To install the GA-01 patch:

1. Ensure there is no running instance of Rational Rose RealTime on the computer you want to update.
2. Copy the appropriate compressed files for your platform to your <ROSERT_HOME> directory.

- For Solaris:

Copy **GA-01.sun5.tar.gz**, then run the following commands:

```
cd $ROSERT_HOME
gunzip < GA-01.sun5.tar.gz | tar xpf -
```

- For Windows:

Copy the self extracting file **GA-01.win32.exe**, then run **GA-01.win32.exe** and click **OK**.

Note: By default, the extraction path is C:\Program Files\Rational\Rose RealTime. If your <ROSERT_HOME> location is different from the default path, prior to extraction, change the path specified in the **Unzip to folder path** box appropriately.

What to do After Installation

The accompanying tar files from the patch are no longer required. However, if you want to retain these files if a re-installation is required, you can move the tar files to <ROSERT_HOME>/specials.

For help on the new features included in this patch, see [Advanced Handling of Globally Unique Identifiers \(GUIDs\)](#).

Toolset

Run the toolset and ensure that the build number is correct. In Rational Rose RealTime, click Help > About Rational Rose RealTime and verify that the version number for Rational Rose RealTime is 6.5.343.0. If the build number is not the same, the patch was not applied correctly.

Code Gen

No additional steps are required.

RQA-RT

No additional steps are required.

RTJava Models

No additional steps are required.

Model Integrator

No additional steps are required.

C++ TargetRTS

No additional steps are required.

C++ Models

No additional steps are required.

C TargetRTS

No additional steps are required.

C Models

No additional steps are required.

Connexis

No additional steps are required.

Which Platforms are Supported

All Rational Rose RealTime 2003.06.00 supported platforms.

Defects Addressed in this Patch

The following defects were addressed in the GA-01 patch:

RATLC ID	Description	Resolution
RATLC00514873	GUIDs corrective content .	Fixed. See <u>Advanced Handling of Globally Unique Identifiers (GUIDs)</u>
RATLC00514527	Codegen generates wrong code for nested classes.	Fixed.
RATLC00514872	RQART - Test with Cardinality.	Fixed.

Advanced Handling of Globally Unique Identifiers (GUIDs)

Background

Rose RealTime assigns Globally Unique Identifiers (GUIDs) to primary model elements (Class, Package, Component, Use Case, etc.) so that the Model Integrator can easily identify model changes where a model element was renamed or moved, and merge the elements from the contributors. GUIDs are normally computed using a time-based algorithm to ensure that they are always unique. GUIDs for element properties

such as operations, attributes, states, transitions, triggers, etc., are optional, and were set as off by default in previous releases of Rose RealTime. A model property stored in the top model file indicates whether optional GUIDs should be used or not. In previous releases of Rose RealTime, disabling optional GUIDs resulted in the optional GUIDs being removed from the model.

Most model elements (such as classes, capsules and protocols) always have GUIDs generated; however, the generation of GUIDs for a number of other elements can be enabled or disabled through the user interface. Rational Rose RealTime generates GUIDs for these model elements when the **Generate unique identifiers for all model elements** on the **General** tab of the **Model Specification for Model** dialog box is selected.

The Problem

Before enabling the feature to turn GUIDs on in a multi-stream or multi-model environment, it was necessary to collapse all the models and streams into a single model. If a model element with a unique ID was imported into a model with this feature turned off, the optional GUIDs were removed. If a model element without a unique ID was imported into a model with this feature turned on, a unique ID was added. Because the unique ID was not protected, it was important to ensure that all models had this feature enabled to ensure that unique identifiers were preserved.

Resolution

This feature provides a controlled mechanism for propagating optional Globally Unique Identifiers (GUIDs) into a multi-stream model environment. The intent of this feature is to support a one-time upgrade of a model to enable GUIDs without having to create a single master model. This patch introduces an alternate position and not time-based algorithm for GUID generation which guarantees that the optional GUID for a property will be the same for properties in models which have the same name and reside in the same location. For example, NewClass1 in model A and B, has a state machine. Each state machine has a state S1. The old behavior of GUID generation would have assigned a time based GUID in each model causing merge conflicts. The new algorithm will use a name-position algorithm to assign the same GUID in each model.

If a model element property has a GUID and it is loaded into a model with optional GUIDs disabled, the GUID will be preserved. If a model element property without a GUID is loaded into a model with optional GUIDs enabled, a GUID will not be added. It is possible to have optional GUIDs enabled but GUIDs not present in the model. The feature provides an easy check to determine if optional GUIDs are missing from the model, and an easy method to add additional alternate GUIDs if optional GUIDs aren't present. In rare circumstances the alternate GUID algorithm could generate a GUID which conflicts with a time-based GUID. For these cases the feature supports the generation of a single GUID. It is unlikely that this feature will be required for the majority of users.

To activate the GUIDS feature for optional model elements, see [Managing GUIDs](#).

Note: By default, all models created from Rational Rose RealTime Frameworks will have the GUIDs feature activated. We strongly recommend that you do not change the default settings for generating GUIDs in your models so as to ensure optimal Model Integrator merge sessions.

New Method for Generating GUIDs

Previously, before you could enable the **Generate unique identifiers for all model elements** option, all development streams had to be merged into one stream. This patch introduces new method of GUID generation that would attempt to generate the same GUIDs for the same elements across development streams.

Recommended Steps for Enabling GUIDs in Multi-Stream Development

To enable optional GUIDs, the simplest approach continues to be to enable them in a single model in a single stream in order to avoid conflicts between time based GUIDs and alternate GUIDs. If you have a

multi-stream development environment where GUIDs are not enabled, we continue to recommend that you merge all streams into one before enabling optional GUIDs. (For a detailed explanation, see the topic **To set the Generate unique identifiers for all elements** option in the Online help.)

For those cases where merging into a single stream is not practical, this feature also supports the incremental introduction of GUIDs into a multistream environment. When optional GUIDs are added incrementally in a multi-stream environment, there is a higher chance for a GUID collision where model elements share the same GUID.

To minimize the change and impact of collisions:

1. Ensure that there are no duplicate GUIDs (different model elements with the same GUID) in any of the streams since duplicate GUIDs will complicate the process.

2. Open each model from the development streams and select **Add/turn on unique identifiers**.

Note: We advise adding optional GUIDs one model at a time and propagating the results across a team before starting the next model.

3. Open Model Integrator and perform a trial merge of the models.

4. Load the resulting model you created from the trial merge process into Rational Rose RealTime.

Note: If you receive the error message:

*Warning: This model has multiple objects with the same unique id
(XXXXXXXXXXXXXX)*

Take note of the duplicate unique IDs, and then identify them in the stream in which they appear.

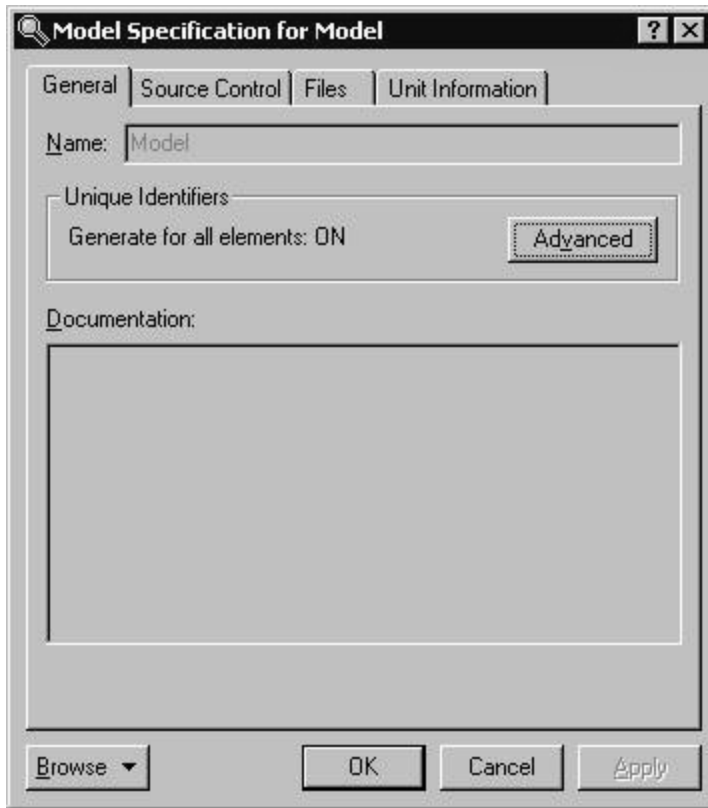
5. For each of the duplicate IDs you encounter, open the model corresponding to the ID and then select **Regenerate unique identifier** to re-generate it.

Note: This scenario is of low probability and not likely to occur.

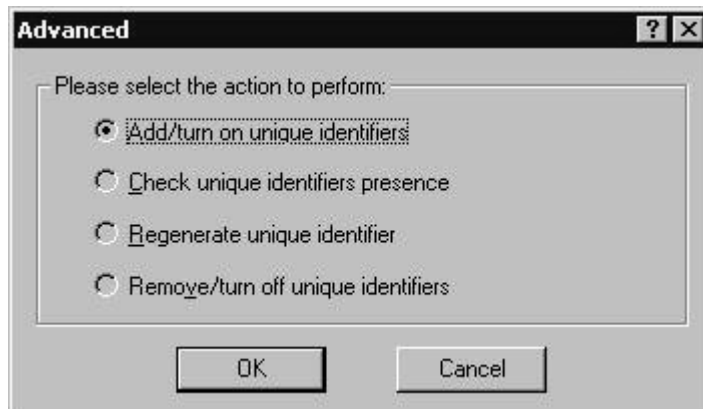
6. Perform a merge again to ensure that all duplicate GUIDs have been resolved. If there are no errors, save the result as the new baseline.

Managing GUIDs

The **General** tab on the **Model Specification for Model** dialog box was modified to include an option that specifies the GUID state of a model. The **Generate for all elements** option specifies the current state for generating unique identifiers for the model: **ON** or **OFF**.



Click **Advanced** to select an action to perform with the unique identifiers.

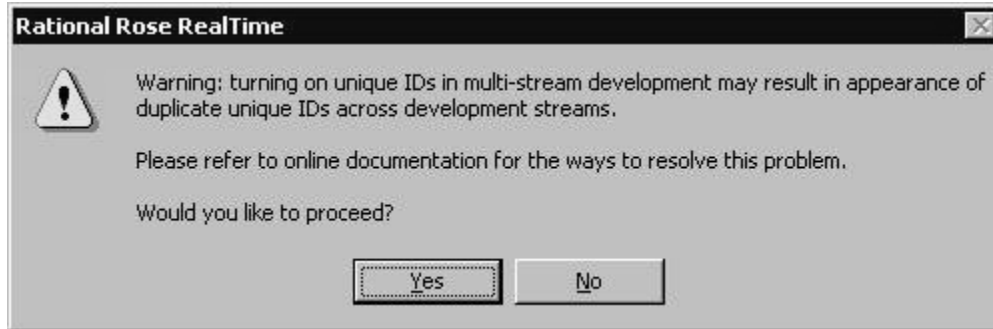


Descriptions

Add/turn on unique identifiers

Activates the GUIDs feature and adds optional GUIDs to the elements that support optional GUIDs, but do not currently have a GUID.

Selecting this option shows the following dialog:



Click **Yes** to start the process.

Note: If you wish to see details in the log, ensure that the toolset option for command logging is enabled. Click **Tools > Options**, then set the **Log commands** option on the **General** tab. The **Log** tab in the Output window shows the number of GUIDs generated using a message like: *Generated NNN hash GUIDs*.

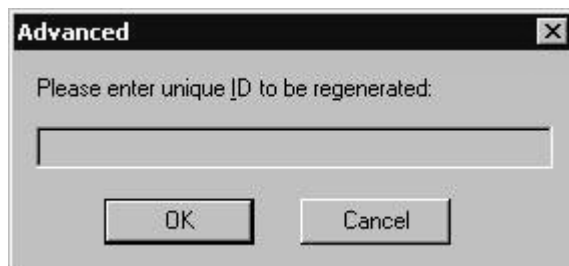
Check unique identifiers presence

Rational Rose RealTime will report how many model elements which support optional GUIDs do not have optional GUID currently assigned. If this is not zero, you need to use the menu item **Add/turn on unique identifiers**.

Regenerate unique identifier

When selected, provides you with the option to regenerate a GUID for a model element.

Selecting this option shows the following dialog:



When specifying the GUID to regenerate, enter it exactly as it appears in the model file or in the **duplicate ID** error message. For example:

3EC115960177

If a GUID cannot be found in the model, the model will not be modified and the following error message is displayed:



If a valid GUID was found in the model, the GUID will be regenerated for the first model element found that matches the supplied GUID, and references to the old GUID are replaced with references to the new GUID.

If the model contains more than one element with the specified GUID, the GUID will be regenerated for the model element that has an optional GUID.

Note: To see details in the log, ensure the toolset option for command logging is enabled. Click **Tools > Options**, then set the **Log commands** option on the **General** tab. After the process of regenerating GUIDs completes, check the log for messages.

Remove/turn off unique identifiers

Deactivates the GUIDs feature and removes optional GUIDs from the model.

Note: We recommend that optional GUIDs always be enabled. Use this feature to remove GUIDs in cases where optional GUIDs are already enabled and you wish to replace them with alternate GUIDs.

Known Issues with GUIDs

Adding or removing unique identifiers might force Rational Rose RealTime to check out controlled units that will not be modified. Typically, those would be units that use elements with changing GUIDs, but do not use that GUID to reference to the element.

When using alternate GUIDs, it is possible to have more than one object with the same GUID, referred to as a collision. We estimate that the number of collisions is approximately one collision per 10MB of model for each development stream. This feature automatically resolves collisions in a single model, however, you should expect GUID collisions when enabling GUIDs in different streams. See [Recommended Steps for Enabling GUIDs in Multi-Stream Development](#).

Naming of Junction Points on State Diagrams and Connectors on Collaboration and Structure Diagrams

Junction points on state diagrams, and connectors on collaboration and structure diagrams used to be named "Junction 1", "Junction 2", etc. and "C1", "C2", etc. These are now be named "J<GUID>" or "C<GUID>", where *GUID* is replaced with the GUID of the object. This affects UI operations only and will not change existing models.

This change prevents Model Integrator merge conflicts. For example contributor 1 adds a transition t1 from state S1 to state S2. Contributor 2 adds a transition t2 from state S1 to S3. This should be a non-conflicting change, but previous versions of Rational Rose RealTime named the originating Junction in S1 for t1 and t2 with the same name, (eg: JUNCTION1) which would result in a merge conflict requiring user intervention during the merge. Using the new naming convention, the merge would be a non-conflicting change and the Model Integrator is able to resolve the changes automatically.

Documentation Updates

For the most recent documentation updates, visit the Product Support section of the Rational Rose RealTime web site at:

<http://www.rational.com/support>

Where printed documentation exists, always refer to the online Help or PDF versions of the book for the latest updates.

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- Your name, company name, telephone number, and e-mail address
- Your operating system, version number, and any service packs or patches you have applied
- Product name and release number
- Your SR# (if you are following up on a previously reported problem)

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