ENTERPRISE ARCHITECT

User Guide Series

Project Maintenance

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CREATED WITH ENTERPRISE ARCHITECT

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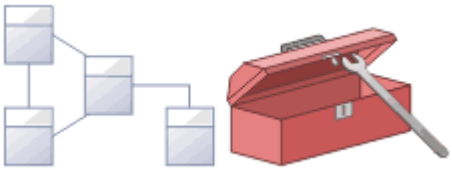


The repository is an important data store that must be maintained to ensure that it is running efficiently and that the information it contains has integrity. Enterprise Architect has built-in features that allow you to keep the repository in good health. These include tools to maintain the database itself, such as Repair and Compact functions (for file based repositories), and a series of tools to manage the data and models, such as model validation and data integrity checks. Reference data can be imported and exported from the repository, and can be shared between repositories, ensuring consistency. The Browser window allows repositories to be refactored easily by dragging and dropping Packages, elements, features and diagrams to new locations. The Discussion and Library features allow the model to be critically analyzed and reviewed.

Facilities

Facility	Detail
Check the integrity of the data in a project	If you have a failed XMI import, network crash or other unforeseen event that could disrupt the integrity of information in the model, it is recommended that you run a Project Integrity Check.
Reset Auto Increment Columns in Tables	XML Import and Export can affect the table auto increment column values and push them towards their maximum allowed value; you can re-sequence the columns to avoid this problem.
Upgrade an old project to enable use of new features	The structure of Enterprise Architect project files is occasionally changed to support more features; when this happens, existing project files must be upgraded to the new format to ensure correct operation and to take advantage of all the new features.
Rename a project	If you want to rename an Enterprise Architect file-based project, you can do so through Windows Explorer.
Compact a project	As with many relational database products .QEA/.QEAX and .EAP/.EAPX files do not physically release allocated space after data is deleted, therefore from time to time it can be beneficial to perform a 'compact', to reduce the physical size of the project file.
Repair a project if it did not close properly	If a .EAP/.EAPX project has not been closed properly, such as during system or network outages, it is possible that the project will report inconsistency errors the next time it is opened. To resolve such issues a 'Repair' can be performed.

Notes

- You can only rename, compact and repair models created as .EAP/.EAPX files with Enterprise Architect; while

most DBMS products provide similar functionality, they typically require an elevated level of permissions and therefore are usually performed by your Database Administrator (DBA).

Maintenance Overview

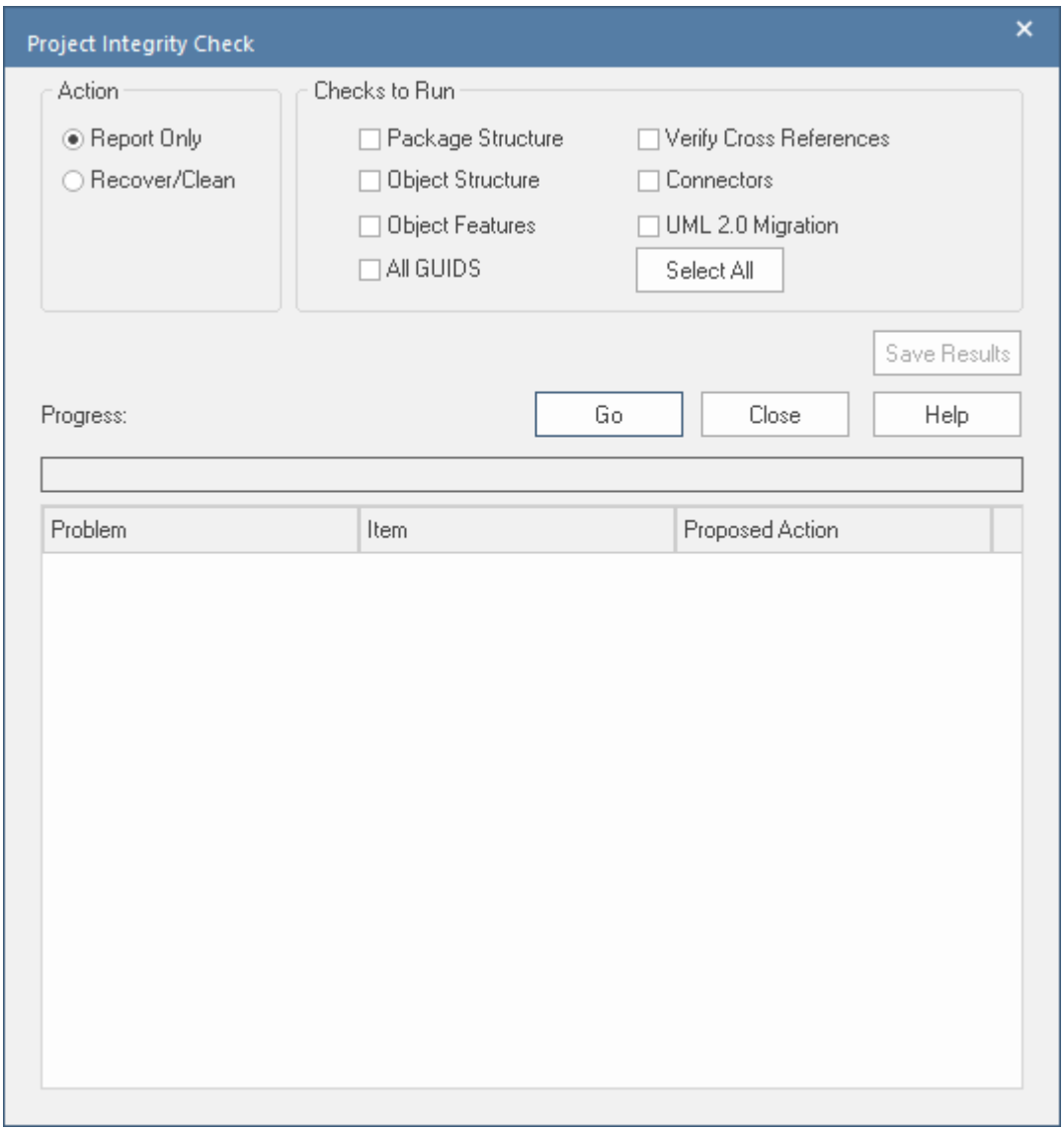
An Enterprise Architect repository is continuously evolving as you add new items or change or delete existing items. During this evolution events can occur that have some minor internal impact on the integrity of the records stored in the database. New product enhancements are also made as a result of the company's strong commitment to innovation and from feedback from customers. These enhancements need to be incorporated into existing product installations so that customers continue to derive the benefit and value from the tool. In this topic you will learn about some of the remedial functions that can be used to keep you repository in good health and operating at optimal speed, as listed here:

- Check Project Data Integrity - perform a health check
- Reset Auto Increments - reset the auto-increment column on system tables
- Upgrade a Project - augment the files to support new features or enhancements
- Run SQL Patches - run a SQL script to correct or enhance a database
- Rename a Project - change the name of a project file
- Compact a Project - decrease the size of a file based database
- Repair a Project - correct a problem due to file corruption from an unexpected network shutdown

Check Data Integrity

As the models in your repository evolve over time, small aberrations can occur in the database, typically as a result of badly formed XMI imported from third-party systems, network crashes or other unforeseen events that disrupt the integrity of information in the repository. To ensure your repository is in good-health it is recommended that you run the 'Project Integrity Check' function to check that your project data is structurally complete.

You can select a variety of items to check. The integrity check examines all database records and ensures there are no 'orphaned' records or inaccurate or unset identifiers. This function does NOT check UML or other modeling language conformance, only the data relationships and repository structure. So it will check that all attributes have identifiers but it will NOT check that you have used the correct relationship between a Use Case and an Actor.



You can conveniently run the Integrity Checker first in 'Report Only' mode to discover and analyze problems it has located. Once you have looked through the list of problems that the check has found and viewed the proposed actions you can then run it again in 'Recover/Clean' mode.

Other than for quite small repositories it is recommended that you don't run all the available checks together as this can take some time to complete. Either run them individually or in small sets.

When Enterprise Architect 'Cleans' the model, it attempts to recover any lost Packages and elements, and generates a new Package called _Recovered_. Check through any elements that are found and, if required, drag them back to where they belong in the Browser window. If they are not required, you can choose to delete them or export them as an XMI export to serve as a backup.

Access

Ribbon	Settings > Model > Integrity > Project Integrity

Check the data integrity of your project

Step	Action
1	Open the project.
2	Select the 'Project Integrity' menu option. The 'Project Integrity Check' dialog displays.
3	Select the checkbox for each check to run: • Package Structure • Object Structure • Object Features • All GUIDs • Cross References • Connectors Alternatively, to select all checks together, click on the Select All button. This does not select the 'UML 2.0 Migration' option. Do not run the migration with any other check; this is a facility that should be run by itself. (See the *UML 2.0 Migration* section after this table.)
4	Select either: • The 'Report Only' option to just view a report on the state of your model, or • The 'Recover/Clean' option to recover and clean your project; before selecting this option, back up your project file
5	To write a log of the integrity check, click on the Save Results button and select a log file.
6	Click on the Go button to run the check. If you want to display the resulting information in a more readable layout, you can resize the dialog and its columns.

UML 2.0 Migration

The UML 2.0 Migration check enables you to migrate the project from UML 1.3 semantics to UML 2.0 semantics. The migration process currently converts activities that are invocations of operations into called operation actions as per the UML 2.0 specification.

The UML 2.0 Migration option is an exclusive process that does not enable any of the other checks to be selected. When

you click on the Go button to perform the migration, a prompt displays for you to confirm the operation.

Notes

- In the Corporate, Unified and Ultimate Editions of Enterprise Architect, if security is enabled you must have 'Check Data Integrity' permission to perform a data integrity check

Reset Auto Increments

Enterprise Architects models are natively stored in tables in a relational database. It uses the auto-increment feature of these database system when inserting new rows in its system tables. There are a number of operations such as bulk imports and exports from XML files that can cause a table's auto-increment column to approach its largest allowed value. This topic explains how auto-increment issues can arise and what is the best practice for re-sequencing the identifier values in any affected tables.

Impacts

Impact Due To	Impact
XML Export/Import	XML Export/Import can cause gaps in the numbering sequence of auto increment columns. Each XML Import deletes rows from several tables; the import then adds rows starting from the largest previous value of the auto increment column. Repeated XML imports can result in the value of the auto increment approaching the maximum value of the database datatype; for example, SQL Server's int datatype has a maximum value of 2,147,483,647.
Replication	Large auto increment values can also arise where the project originated as an QEA or EAP replica or design master. The SQLite and Jet engines assign random values for auto increment columns with each XML Import into the project. These random values can approach the maximum range of the repository data type, which could present a problem when the QEA or EAP project is transferred to another repository.

Access

Ribbon	Settings > Model > Transfer > Full Project Transfer via Native XML > Export Complete Project Settings > Model > Transfer > Full Project Transfer via Native XML > Import Complete Project

Re-sequence auto increment columns

Step	Description
1	Open the project.
2	Create a base model of the repository-type that you want to export to.

3	• Select: Settings > Model > Transfer > Full Project Transfer via Native XML > Export Complete Project • Set the *Directory* for where the XEA export is to be stored.
4	Open the newly created repository.
5	• Select: Settings > Model > Transfer > Full Project Transfer via Native XML > Import Complete Project • Ensure the *Directory* is set to the same file-directory where the XEA was exported above.

Notes

- It is recommend that this task is performed when there are no active users accessing the Project.

Upgrade a Project

The structure of Enterprise Architect project files is occasionally changed to support new features. In such cases, the project might have to be upgraded. Upgrading to the new file structure is a simple and quick process that brings your project to the current level to:

- Ensure correct operation and
- Support all the latest Enterprise Architect features

Initial Check

When you load a project that was created in an earlier release of Enterprise Architect (for example, an archived project) using a recent release of Enterprise Architect, the system determines whether the project should be upgraded and, if the upgrade is necessary, displays the Upgrade Wizard.

The Upgrade Project Wizard

The Upgrade Project Wizard takes you through the upgrade process and:

- Advises you of the necessity to upgrade
- Advises you to back up the current project; it is essential to back up before any changes are made
- Checks which upgrade path is required
- Guides you through the steps to perform the upgrade
- Opens the newly converted project

Notes

- If you are using replication in your models, and the upgrade wizard detects that the project you are opening is a replica and not a Design Master, a different upgrade path is required
- Once upgraded, the project cannot be opened with the version of Enterprise Architect in which it was created

Upgrade Replicas

Models that have replication features added might have to be upgraded differently from regular projects.

- If the model is a Design Master (the root model of all other replicas) then you can upgrade the model to suit the current version of Enterprise Architect; after upgrading a Design Master you should re-create the replicas, rather than synchronizing
- If the model is not a Design Master, you must first remove the replication features, then upgrade the project in the normal manner; the Upgrade Wizard guides you through the steps

Run SQL Patches

Enterprise Architect is a robust platform and there are many internal checks that are applied to ensure that the integrity of the information in the repository is maintained. Occasionally an issue might arise and Sparx Systems might choose to release a patch to rectify the problem.

The patch generally checks how many records are to be updated, and reports on what is to be done.

Access

Ribbon	Settings > Model > Integrity > Run Patch

Run SQL Patch

1	Open Enterprise Architect and load the Project that requires the patch applied.
2	Select the 'Run Patch' option. The 'Run Patch' dialog displays.
3	Click the Browse button and select the supplied patch file (*.XML) in the file browser. Upon loading the select file, the Description will then be loaded with the explanation of what action the patch will perform.
4	Click the Run button to apply the patch to the current Project.

Rename a Project

Occasionally the purpose of your repository will change, or you might for any number of reasons want to change its name. While you can change the name of the root Package in the repository to change the name of the repository itself, you will need to rename the file at the Windows file system level, using Windows Explorer.

Rename an Enterprise Architect project file

Step	Action
1	If you have the project open, close it.
2	Ensure no other users have the file open.
3	Open Windows Explorer and navigate to the project.
4	Rename the project file using Windows Explorer.
5	You should keep the file extension to preserve compatibility with the default project type, as installed in the registry at installation time.

Compact a .QEA/.QEAX Project

After a period of time, through general use, a .QEA or .QEAX project file might occupy more disc space than necessary. You can move the project to a local drive and compact the file to recover the unused space.

Enterprise Architect provides two separate but similar options to compact a .QEA or .QEAX repository:

1. Run the compact process against the selected project
2. Compact the selected project to a new file, this option keeps the original repository unchanged

Access

Ribbon	Settings > Model > Integrity > Manage .QEA/.QEAX File > Compact .QEA/.QEAX File Settings > Model > Integrity > Manage .QEA/.QEAX File > Compact .QEA/.QEAX to new file

Compact a .QEA/.QEAX file

Step	Action
1	Identify a .QEA/.QEAX project file to compact
2	Ensure no other users (or other instances of Enterprise Architect) have the identified .QEA/.QEAX project .file open.
3	Select the 'Compact .QEA/.QEAX File...' option.
4	When prompted, select (or enter) the filename of the .QEA/.QEAX project file to compact.
5	Follow the on-screen instructions to complete the process. Once the process completes Enterprise Architect will display a message indicating both original and compacted sizes.

Compact a .QEA/.QEAX file to new file

Step	Action
1	Identify a .QEA/.QEAX project file to compact
2	Ensure no other users (or other instances of Enterprise Architect) have the identified .QEA/.QEAX project .file open.

3	Select the 'Compact .QEA/.QEAX to new file...' option.
4	When prompted, select (or enter) the filename of the .QEA/.QEAX project file to compact.
5	When prompted, enter the file name of the new file; this will be the file that receives the compacted version of the selected repository.
6	Follow the on-screen instructions to complete the process. Once the process completes Enterprise Architect will display a message indicating both original and compacted sizes.

Notes

- Always compact projects on a local drive, never on a network drive
- In the Corporate, Unified and Ultimate Editions of Enterprise Architect, if security is enabled you must have 'Administer Database' permission to compact a project

Compact a .EAP/.EAPX Project

After a period of time, through general use, a project .eapx or .eap file might occupy more disc space than necessary. You can move the project to a local drive and compact the file to recover the unused space.

Access

Ribbon	Settings > Model > Integrity > Manage .EAPX/.EAP File > Compact .EAPX/.EAP File

Compact a .EAPX/.EAP File

Step	Action
1	Either: • Open the .EAP or EAPX project to compact or • Ensure that there is no project open (you will be prompted after step 3)
2	Ensure no other users have the file open.
3	Select the 'Compact .EAPX/.EAP File...' option.
4	Follow the on-screen instructions to complete the process.

Notes

- Always compact projects on a local drive, never on a network drive
- In the Corporate, Unified and Ultimate Editions of Enterprise Architect, if security is enabled you must have 'Administer Database' permission to compact a project

Re-Index a Firebird Project

After a period of time, through general use, a Firebird-based project file can develop non-optimized indexes, causing data retrievals to be slow and affecting the general performance of Enterprise Architect while using that repository.

To resolve such issues you can move the project to a local drive and request the database engine to rebuild all indexes the next time they are used; this is referred to as Updating the Statistics of the Indexes.

Access

Ribbon	Settings > Model > Integrity > Manage Firebird > Update Index Statistics

Index a Firebird Project

Step	Action
1	Open the Firebird project to re-index.
2	Ensure no other users have the file open.
3	Select the 'Update Index Statistics...' option.
4	Follow the on-screen instructions to complete the process.

Notes

- The process to re-index a project should always be performed on a local drive, never on a network drive
- Over the years Sparx Systems have improved the default indexes that are defined within an Enterprise Architect repository, so whenever a new .EAP/EAPX is created it will be created with the latest indexes; however, if a .EAP/.EAPX repository has been in use for many years then the defined indexes are most likely not ideal, but you can use another ribbon option - 'Update .EAP and .EAPX file indexes' - to remove all old indexes and generate the latest index definitions
- In the Corporate, Unified and Ultimate Editions of Enterprise Architect, if security is enabled you must have 'Administer Database' permission to re-index a project

Repair a Project

If a project has not been closed properly, such as during system or network outages or on poor network connections, on rare occasions the .eap file does not re-open correctly. A message displays informing you the project is of an unrecognized database format or is not a database file. In such cases, you can move the project file to a local drive and repair it.

Access

Ribbon	Settings > Model > Integrity > Manage .EAPX/.EAP File > Repair .EAPX/.EAP File

Repair a project that was not closed properly

Step	Action
1	Ensure that all users are logged off the project you are attempting to repair.
2	Copy the project file to a local drive on your workstation.
3	Close and restart Enterprise Architect - you do not need to open any model, including the one you are repairing.
4	Select the 'Repair .EAPX/.EAP File...' menu option, and follow the on-screen instructions.
5	Once you have repaired the project, it is recommended that you perform a data integrity check.

Notes

- Always repair projects on a local drive, never on a network drive
- The 'Compact a Project' option can also repair corrupt .eap files
- In the Corporate, Unified and Ultimate Editions of Enterprise Architect, if security is enabled you must have 'Administer Database' permission to repair a project