



Enterprise Architect

User Guide Series

Server Based Repositories

What repository to store models in? With Sparx Systems Enterprise Architect you can upgrade or create a large and/or distributed model to be accessed on one of several DBMSs such as Oracle, MySQL, MariaDB, Firebird, PostgreSQL, SQL Anywhere or Access.

Author: Sparx Systems

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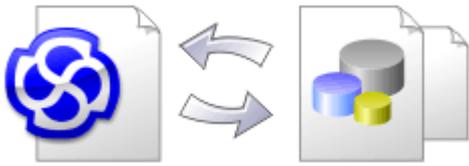
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Server Based Repositories



As an Enterprise Architect repository becomes larger, or the number of concurrent users increases or as organizational policy dictates, it might be more appropriate to use a database management system (DBMS) to store the repository. A File Based Repository can be created and used in any edition of Enterprise Architect; however, if you decide to use a DBMS based repository you will need to use the Corporate, Unified or Ultimate editions. Enterprise Architect has a function to transfer your repository from a file based repository to a server based one, helping you to get started quickly and with no changes in the user interface. Note that the performance of the Repository as experienced by end users will depend very much on the quality and power of the server machine and the network infrastructure on which the DBMS and user are located. Using a DBMS over a very high latency (10ms or higher) network can result in significant delays and visibly inferior performance. When network latency is an issue, Sparx Systems recommends using a Cloud Based Server as the interactions are optimized to reduce the effect of network latency.

Also it is important to note that all models are quite different and although Sparx Systems does its best to maximize performance based on what is expected to be held in a

repository, sometimes this is not quite sufficient. In these rare cases a review of the database indexes would be good practice to maximize data retrieval and access. This will ensure that end users receive the best possible performance even when models contain millions of constructs.

Set up a Project on a DBMS repository

To set up your project on a DBMS repository, you work through these stages:

1. Set up your DBMS software and create a database.
2. Create the required tables in your database, by running a script supplied on the Sparx Systems website.
3. (For certain DBMS products) Set up an ODBC driver to enable connection to the repository.
4. Transfer the project from the source file to the DBMS repository; the source file can be:
 - a .EAP or .FEAP base model, to begin a new project from scratch, or
 - a previously-developed project file, to move an existing project into the DBMS repository
5. Connect to your repository.

DBMS Products you can use

You can set up your project on a repository in:

- Firebird from v2
- MySQL from v5
- MariaDB
- Microsoft SQL Server from 2005, all editions including Express and Azure
- Microsoft Access from 2007
- Oracle from 9i (all editions)
- PostgreSQL from v8

For information on creating a project on a specific DBMS from this list, see *Learn more*.

Notes

- You cannot move a model from a source .eap file of an Enterprise Architect version earlier than 3.5.0 without updating it first
- Before proceeding, you must have MDAC 2.6 or higher installed on your system
- (Optional, but recommended) before actually transferring the project structure from the file to the repository, perform a Project Data Integrity Check on the file

Create a Project in a MariaDB Database

To create a project in a MariaDB repository, you work through these stages:

- Stage 1: Create an empty database repository and set up the data tables
- Stage 2: Set up the ODBC Driver
- Stage 3: Set up initial model data

Prerequisites

- A machine with MariaDB version 10.1.2 or higher installed and running
- MySQL ODBC

1. Create a MariaDB Repository

Step	Action
1.1	Create a new empty database and configure it to your installation's defaults.

1. 2	Open your SQL management console of choice (such as HeidiSQL) and connect to the new database.
1. 3	Load the EASchema_1220_MySQL.sql file from the Sparx Systems website .
1. 4	Run EASchema_1220_MySQL.sql to create the required database schema.

2. Set up the ODBC DSN

Step	Action
2. 1	<p>Create a suitable ODBC Data Source (using the MySQL ODBC driver and NOT the MariaDB driver), to the new database.</p> <p>Make sure you select the extended option:</p> <ul style="list-style-type: none"> • 'Return matched rows instead of affected rows'

3. Set up Initial Data

Enterprise Architect repositories require a basic amount of reference data to function correctly.

You can set up this initial data in one of two different ways:

- Transfer the entire contents of an existing model into the new database, or
- Load initial data using a SQL Script

3.1. Load Initial Data - Transfer existing model

If you choose to set up your new database with the contents of an existing model then Sparx Systems recommend that a Project Integrity check is performed on the existing model to ensure it is 'clean' and free from data-related errors before being copied into the new database.

The Enterprise Architect installation provides a model called EABase.eap, which is copied into the installation folder specifically for the purpose of providing basic data for a new model. However, if you have customized the various drop-down lists in another model then you might prefer to use that. Regardless of what model you choose to use, the process is the same and is outlined here.

Step	Action
3.	In Enterprise Architect, open the existing repository

1. 1	and select the 'Configure > Model > Integrity > Project Integrity' ribbon option.
3. 1. 2	In the 'Action' panel select the 'Report Only' radio button, and in the 'Checks to Run' panel select all check boxes. Click on the Go button.
3. 1. 3	If Enterprise Architect detects that the existing model contains integrity issues, they will be listed in the main panel at the bottom of the dialog. These issues should be resolved before continuing with the project transfer.
3. 1. 4	With Enterprise Architect open, ensure that there is no project loaded, by clicking on the  button and selecting 'Close Project'.
3. 1. 5	Select the 'Configure > Model > Transfer > Project Transfer' ribbon option. The 'Project Transfer' dialog displays.
3. 1. 6	In the 'Transfer Type' panel, select 'File to DBMS'.
3. 1. 7	In the 'Source Project' field, click on the  button and browse for the name of the project file to copy to the repository. If the .EAP file has Replication enabled, this must be

	removed before performing the transfer.
3. 1. 8	At the right of the 'Target Project' field, click on the  button. The 'Datalink Properties' dialog displays.
3. 1. 9	Select 'Microsoft OLE DB Provider for ODBC Drivers' from the list. Click on the Next button.
3. 1. 10	In the 'Use Data source name' field, click on the drop-down arrow and select the ODBC Data Source you configured to point to your new database. Click on the OK button. The 'Project Transfer' dialog redisplay.
3. 1. 11	If required, select the 'Logfile' checkbox and type a path and filename for the data transfer log file.
3. 1. 12	Click on the Transfer button to begin the data transfer process.
3. 1. 13	When the process is complete, you have created a project on a MariaDB database and can now connect to it and open it from Enterprise Architect.

3.2. Load Initial Data - SQL Script

The Sparx Systems website provides a SQL Script that contains a series of INSERT statements that will load an empty database with all the data needed by Enterprise Architect.

Step	Action
3. 2. 1	Open your SQL management console of choice (such as HeidiSQL) and connect to the new database.
3. 2. 2	Load the EABase_1220_MySQL.sql file from the Sparx Systems website .
3. 2. 3	Run EABase_1220_MySQL.sql to create the required database schema.

Create a MariaDB Repository

Creating a MariaDB database is fully documented in the product information provided with your MariaDB installer or on the MariaDB website.

There are many ways to create a new MariaDB database. One common method is to use a SQL-based Management Console such as HeidiSQL, which provides a convenient graphical user interface to enable creating databases, executing scripts, and performing backups and restores. However, the exact method used is not important to this discussion, therefore you are free to use the most convenient or familiar method at your disposal.

Having created your MariaDB database, use the MySQL SQL script provided by Sparx Systems to create the required table definitions for Enterprise Architect. The `EASchema_1220_MySQL.sql` script is freely available on the [DBMS Based Repositories](#) page on the Sparx Systems website.

Notes

- Ensure that the collation is set to the alphabet you use, such as Latin or Cyrillic

Set up a MariaDB ODBC Driver

After you have created a MariaDB database, you will need to set up an ODBC DSN to the new database in order for Enterprise Architect to connect to it. Sparx Systems recommend that the MySQL ODBC driver is used to connect to MariaDB-based repositories, as the native MariaDB ODBC driver is not fully compatible with connection methods employed by Enterprise Architect.

Prerequisites

Install:

- MariaDB DBMS and repository
- MySQL ODBC driver software

Set up the ODBC Driver

Step	Action
1	Under both 32-bit and 64-bit operating systems, Enterprise Architect requires 32-bit ODBC drivers to connect to a repository through ODBC. You can quickly load the correct 32-bit ODBC Data Source

	<p>Administrator by selecting the 'Configure > User Tools > ODBC Data Sources' ribbon option.</p> <p>The ODBC Data Source Administrator window displays.</p>
2	<p>Click on the Add button.</p> <p>The 'Create New Data Source' dialog displays, enabling you to add a new DSN.</p>
3	<p>Select the appropriate MySQL ODBC Driver from the list.</p>
4	<p>Click on the Finish button.</p> <p>The 'MySQL Connector/ODBC' dialog displays.</p>
5	<p>Enter these configuration details:</p> <ul style="list-style-type: none">• A data source name for the connection• A description (optional)• The host address of the DBMS server• User name and password• The database name on the selected server
6	<p>To set the advanced options, click on the Details>> button.</p>
7	<p>Select these checkboxes (where provided):</p> <ul style="list-style-type: none">• 'Return matched rows instead of affected rows'

	<p>('Connection' or 'Cursors/Results' tab)</p> <ul style="list-style-type: none">• 'Allow big result sets' ('Connection' tab)
8	Click on the Test Connection button to confirm that the details are correct.
9	If the test succeeds, click on the OK button to complete the configuration. If the test does not succeed, review your settings.

Notes

- Connecting to DBMS based Repositories is available in the Enterprise Architect Corporate, Unified and Ultimate editions

Connect to a MariaDB Repository

To access your MariaDB repository, you must provide the connection details to Enterprise Architect.

Prerequisites

- The MariaDB repository and the project already exist
- You know the database user credentials that have **SELECT, INSERT, UPDATE, DELETE, EXECUTE** and **SHOW VIEW** access permissions
- The MySQL ODBC driver has been set up

Access

Ribbon	 : Open Project
Keyboard Shortcuts	Ctrl+O

Connect to the repository

Step	Action
1	In the 'Open Project' dialog, select the 'Connect to Server' checkbox.
2	Click on the  button. The 'Data Link Properties' dialog displays.
3	Select 'Microsoft OLE DB Provider for ODBC Drivers' from the list.
4	Click on the Next>> button. The 'Connection' tab displays.
5	Click on the 'Use data source name' radio button and on the drop-down arrow in its field. From the list, select the ODBC driver you have set up to connect to your MariaDB repository.
6	If required, type in a user name and password.
7	If required, type in an initial catalog.
8	Click on the Test Connection button to confirm that the details are correct.
9	If the test does not succeed, revise your settings.

	<p>If the test succeeds, click on the OK button; the 'Connection Name & Type' dialog displays.</p>
10	<p>Give the connection a suitable name so that you can recognize it in the 'Recent Projects' panel on the 'Open Project' dialog.</p>
11	<p>If required, select the 'Encrypt Connection String' checkbox.</p> <p>This encrypts and hides the connection details of the database from the users that the connection string is given to.</p>
12	<p>If required, select the 'Lazy Load' checkbox to not load the full project view when the model is loaded; instead, only the parts that are necessary to display the visible portion of the tree are loaded.</p> <p>With this setting, the model loads faster and users can begin work sooner, but at the expense of later small delays as Enterprise Architect loads specific portions of the model.</p>
13	<p>If required, select the 'Use WAN Optimization' checkbox.</p> <p>Note: this option is only included for historical reasons, the WAN Optimizer product has been replaced by the vastly improved Pro Cloud Server.</p> <p>The WAN Optimizer was originally created to improve performance over a Wide Area Network by</p>

	<p>compressing all database requests from Enterprise Architect to reducing transfer times.</p> <p>If you select this checkbox, complete the next three fields (see your administrator for the correct values); otherwise go to step 17.</p>
14	<p>In the 'Server' field, type the network name or address of the optimizer server.</p>
15	<p>In the 'Port' field, type the Port on which the server is running on the remote machine.</p>
16	<p>In the 'DSN' field, type the data source name of the database as it appears on the remote machine.</p>
17	<p>Click on the OK button to complete the configuration and open the project.</p> <p>This also adds the project name to the 'Recent' list on the 'Start Page'; from now on, you can open the project again just by clicking on this name.</p>

Notes

- Connecting to DBMS based Repositories is available in the Corporate, Unified and Ultimate editions of Enterprise Architect

Create a Project in an MS Access 2007 Database

Setting up a project in a Microsoft Access 2007 repository typically involves the conversion of an existing .EAP or .EAPX file, which can be achieved in two different ways:

- You have a working copy of MS Access 2007 itself, in which case you can convert your existing .EAP/.EAPX project directly to an MS Access 2007 (.ACCDB) file, or
- The existing repository can be transferred into an empty MS Access 2007 database

In either case, before you convert or transfer your existing project, you should perform a project integrity check on the source model to ensure that is 'clean' and free from data related errors.

Prerequisites

- The 'Microsoft Office 12.0 Access Database Engine OLE DB Provider' ODBC driver is installed

1. Perform a Project Integrity Check

While this step is optional, Sparx Systems do recommend that it is performed.

Step	Action
1.1	Using Enterprise Architect, open the source project .EAP/.EAPX file.
1.2	Select the 'Configure > Model > Integrity > Project Integrity' ribbon option.
1.3	Ensure that in the 'Action' panel 'Report Only' is selected, and that all checkboxes in the 'Checks to Run' panel are selected, then click on the Go button.
1.4	If Enterprise Architect detects that the existing model contains integrity issues, they will be listed in the main panel at the bottom of the dialog. These issues should be resolved before continuing with the project transfer.

2a. Convert source project with MS Access 2007

Step	Action
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2a .1	<p>Open MS Access 2007 and load the source .EAP/.EAPX file within this product.</p> <p>Allow Access to convert the source project to a .ACCDB file. Once this process is complete your project will be an MS Access 2007 repository.</p>
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2b. Transfer source project to an empty .ACCDB file

Step	Action
2b .1	<p>Open Enterprise Architect.</p> <p>(If the 'Open Project' dialog displays, click on the Cancel button to open with no project loaded.)</p>
2b .2	<p>Select the 'Configure > Model > Transfer > Project Transfer' ribbon option.</p> <p>The 'Project Transfer' dialog displays.</p>
2b .3	<p>In the 'Transfer Type' panel, select 'File to DBMS'.</p>
2b	<p>In the 'Source Project' field, type the name of the</p>

.4	<p>.EAP/.EAPX file to copy to the repository. If the .EAP file has Replication enabled, this must be removed before performing the transfer.</p>
2b .5	<p>At the right of the 'Target Project' field, click on the  button. The 'Datalink Properties' dialog displays.</p>
2b .6	<p>Select 'Microsoft Office 12.0 Access Database Engine OLE DB Provider' from the list. Click on the Next button.</p>
2b .7	<p>Obtain an empty MS Access 2007 base project from the Sparx Systems DBMS Based Repositories web page, and rename the file to suit the intended purpose.</p>
2b .8	<p>On the 'Data Source Details' page of the 'Datalink Properties' dialog, type in the full path to the Access 2007 .ACCDB file. Click on the OK button to return to the 'Project Transfer' dialog.</p>
2b .9	<p>If required, select the 'Logfile' checkbox and type a path and filename for the data transfer log file.</p>
2b .1	<p>Click on the Transfer button to begin the data transfer process.</p>

0	When the process is complete, you will have created your project in an Access 2007 database and can open it directly from Enterprise Architect, browsing for the .ACCDB file location in the 'Open Project' dialog.
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3. Set up the ODBC DSN

Step	Action
3.1	Create a suitable ODBC Data Source to point to your new database.

Notes

- Connecting to DBMS based Repositories is available in the Enterprise Architect Corporate, Unified and Ultimate editions
- If you do not have Access 2007, you can download the Access Database Engine from the [Microsoft downloads site](#)
- Ensure that the collation is set to the alphabet you use,

such as Latin or Cyrillic

Create a Project in a MySQL Database

To create a project in a MySQL repository, you work through these stages:

- Stage 1: Create an empty database repository and set up the data tables
- Stage 2: Set up the ODBC Driver
- Stage 3: Set up initial model data

Prerequisites

- A machine with MySQL version 5 or higher installed and running
- MySQL 32bit ODBC driver, between versions 5.2.4 and 5.3.6 (other versions are not recommended)

1. Create a MySQL Repository

MySQL supports two different storage engines - InnoDB and MyISAM. In older versions of MySQL, MyISAM was the default storage engine, but from MySQL v5.5 onwards InnoDB is the default. As of Enterprise Architect v13, Sparx Systems will no longer provide updates to the MyISAM script and we recommend all users to choose InnoDB, as it supports transactions and UTF8.

Step	Action
1.1	Create a new empty database and configure it to your installation's defaults.
1.2	Open your SQL management console of choice (such as MySQL Workbench) and connect to the new database.
1.3	Load the EASchema_1220_MySQL.sql file from the Sparx Systems website .
1.4	Run EASchema_1220_MySQL.sql to create the required database schema.

2. Set up the ODBC DSN

Step	Action
2.1	Create a suitable ODBC Data Source (using the MySQL ODBC driver) for the new database. Make sure you select these extended options: <ul style="list-style-type: none"> 'Return matched rows instead of affected rows'

- | |
|---|
| <ul style="list-style-type: none">• 'Allow big result sets' |
|---|

3. Set up Initial Data

Enterprise Architect repositories require a basic amount of reference data to function correctly.

You can set up this initial data in one of two different ways:

- Transfer the entire contents of an existing model into the new database, or
- Load initial data using a SQL Script

3.1 Load Initial Data - Transfer existing model

If you choose to set up your new database with the contents of an existing model then Sparx Systems recommend that a Project Integrity check is performed on the existing model to ensure it is 'clean' and free from data-related errors before being copied into the new database.

The Enterprise Architect installation provides a model called EABase.eap, which is copied into the installation folder specifically for the purpose of providing basic data for a new model. However, if you have customized the various drop-down lists in another model then you might

prefer to use that. Regardless of what model you choose to use, the process is the same and is outlined here.

Step	Action
3. 1. 1	In Enterprise Architect, open the existing repository and select the 'Configure > Model > Integrity > Project Integrity' ribbon option.
3. 1. 2	In the 'Action' panel, select the 'Report Only' radio button, and in the 'Checks to Run' panel select all checkboxes. Click on the Go button.
3. 1. 3	If Enterprise Architect detects that the existing model contains integrity issues, they will be listed in the main panel at the bottom of the dialog. These issues should be resolved before continuing with the project transfer.
3. 1. 4	With Enterprise Architect open ensure that there is no project loaded, by clicking on the  button and selecting 'Close Project'.
3. 1. 5	Select the 'Configure > Model > Transfer > Project Transfer' ribbon option. The 'Project Transfer' dialog displays.
3. 1.	In the 'Transfer Type' panel, select 'File to DBMS'.

6	
3. 1. 7	<p>In the 'Source Project' field, click on the  button and browse for the name of the project file to copy to the repository.</p> <p>If the .EAP file has Replication enabled, this must be removed before performing the transfer.</p>
3. 1. 8	<p>At the right of the 'Target Project' field, click on the  button.</p> <p>The 'Datalink Properties' dialog displays.</p>
3. 1. 9	<p>Select 'Microsoft OLE DB Provider for ODBC Drivers' from the list.</p> <p>Click on the Next button.</p>
3. 1. 10	<p>In the 'Use Data source name' field, click on the drop-down arrow and select the ODBC Data Source you configured to point to your new database.</p> <p>Click on the OK button. The 'Project Transfer' dialog redisplay.</p>
3. 1. 11	<p>If required, select the 'Logfile' checkbox and type a path and filename for the data transfer log file.</p>
3. 1.	<p>Click on the Transfer button to begin the data transfer process.</p>

12	
3. 1. 13	When the process is complete, you have created a project on a MySQL database and can now connect to it and open it from Enterprise Architect.

3.2 Load Initial Data - SQL Script

Step	Action
3. 2. 1	Open your SQL management console of choice (such as MySQL Workbench), and connect to the new database.
3. 2. 2	Load the EABase_1220_MySQL.sql file from the Sparx Systems website .
3. 2. 3	Run EABase_1220_MySQL.sql to create the required database schema.

Create a MySQL Repository

Creating a MySQL database is fully documented in the product information provided with your MySQL installer.

There are many ways to create a new MySQL database. A common method is to use an SQL-based Management Console such as MySQL Workbench, which provides a convenient graphical user interface for the creation of databases, the execution of scripts, and backups and restores. However, the exact method used is not important to this discussion, and you can use the most convenient or familiar method at your disposal.

Having created your MySQL database, use the SQL script provided by Sparx Systems to create the required table definitions for Enterprise Architect. The `EASchema_1220_MySQL.sql` script is freely available on the [DBMS Based Repositories](#) page on the Sparx Systems website.

Notes

- Ensure that the collation is set to the alphabet you use, such as Latin or Cyrillic

Set up a MySQL ODBC Driver

After you have created a MySQL database, you will need to set up an ODBC DSN to the new database in order for Enterprise Architect to connect to it.

Prerequisites

Install:

- MySQL DBMS and repository
- MySQL 32bit ODBC driver, between versions 5.2.4 and 5.3.6

Set up the ODBC Driver

Step	Action
1	Under both 32-bit and 64-bit operating systems, Enterprise Architect requires 32-bit ODBC drivers to connect to a repository through ODBC. You can quickly load the correct 32-bit ODBC Data Source Administrator by selecting the 'Configure > User Tools > ODBC Data Sources' ribbon option. The ODBC Data Source Administrator window

	displays.
2	Click on the Add button. The 'Create New Data Source' dialog displays, enabling you to add a new DSN.
3	Select the appropriate MySQL ODBC Driver from the list.
4	Click on the Finish button. The 'MySQL Connector/ODBC' dialog displays.
5	Enter these configuration details: <ul style="list-style-type: none">• A data source name for the connection• A description (optional)• The host address of the DBMS server• User name and password• The database name on the selected server
6	To set the advanced options, click on the Details>> button.
7	Select these checkboxes (where provided): <ul style="list-style-type: none">• 'Return matched rows instead of affected rows' ('Connection' or 'Cursors/Results' tab)• 'Allow big result sets' ('Connection' tab)

8	Click on the Test Connection button to confirm that the details are correct.
9	If the test succeeds, click on the OK button to complete the configuration. If the test does not succeed, review your settings.

Notes

- Connecting to DBMS based Repositories is available in the Enterprise Architect Corporate, Unified and Ultimate editions

Connect to a MySQL Repository

To access a project in your MySQL data repository, you must connect to the data repository from Enterprise Architect.

Prerequisites

- The MySQL repository and the project already exist
- You know the database user credentials that have **SELECT, INSERT, UPDATE, DELETE, EXECUTE** and **SHOW VIEW** access permissions
- The MySQL ODBC driver has been set up

Access

Ribbon	 : Open Project
Keyboard Shortcuts	Ctrl+O

Connect to the repository

Step	Action
1	In the 'Open Project' dialog, select the 'Connect to Server' checkbox.
2	Click on the  button. The 'Data Link Properties' dialog displays.
3	Select 'Microsoft OLE DB Provider for ODBC Drivers' from the list.
4	Click on the Next>> button. The 'Connection' tab displays.
5	Click on the 'Use data source name' radio button and on the drop-down arrow in the corresponding field. From the list, select the ODBC driver you have set up to connect to your MySQL repository.
6	If required, type in a user name and password.
7	If required, type in an initial catalog.
8	Click on the Test Connection button to confirm that the details are correct.

9	<p>If the test does not succeed, revise your settings. If the test succeeds, click on the OK button; the 'Connection Name & Type' dialog displays.</p>
10	<p>Give the connection a suitable name so that you can recognize it in the 'Recent Projects' panel on the 'Open Project' dialog.</p>
11	<p>If required, select the 'Encrypt Connection String' checkbox.</p> <p>This encrypts and hides the connection details of the database from the users that the connection string is given to.</p>
12	<p>If required, select the 'Lazy Load' checkbox to not load the full project view when the model is loaded; instead, only the parts that are necessary to display the visible portion of the tree are loaded.</p> <p>With this setting, the model loads faster and users can begin work sooner, but at the expense of later small delays as Enterprise Architect loads specific portions of the model.</p>
13	<p>If required, select the 'Use WAN Optimization' checkbox.</p> <p>Note: this option is only included for historical reasons, the WAN Optimizer product has been replaced by the vastly improved Pro Cloud Server.</p>

	<p>The WAN Optimizer was originally created to improve performance over a Wide Area Network by compressing all database requests from Enterprise Architect to reducing transfer times.</p> <p>If you select this checkbox, complete the next three fields (see your administrator for the correct values); otherwise go to step 17.</p>
14	In the 'Server' field, type the network name or address of the optimizer server.
15	In the 'Port' field, type the number of the Port on which the server is running on the remote machine.
16	In the 'DSN' field, type the data source name of the database as it appears on the remote machine.
17	<p>Click on the OK button to complete the configuration and open the project.</p> <p>This also adds the project name to the 'Recent' list on the Start Page; from now on, you can open the project again just by clicking on this name.</p>

Notes

- Connecting to DBMS based Repositories is available in

the Corporate, Unified and Ultimate editions of Enterprise Architect

Create a Project in an Oracle Database

To create a project in a repository on Oracle 9i, 10g, 11g or 12c, you work through these stages:

- Stage 1: Create a new Oracle database user to own the Enterprise Architect tables
- Stage 2: Connect to the Oracle repository; Sparx Systems recommends using Oracle Provider for OLE DB - connecting with either Microsoft OLE DB Provider for ODBC or Microsoft OLE DB Provider for Oracle could cause unexpected behavior or performance issues due to known limitations of those drivers
- Stage 3: Set up initial model data

Prerequisites

- A machine with Oracle 9i, 10g, 11 g or 12c installed and running
- Oracle Client installed on the client machine, please ensure that the OLE/DB drivers are installed (you can download the drivers from the Oracle Technology Network web site, as part of the Oracle Data Access Components (ODAC) package; see *Learn more*)

1. Create Database Repository

Step	Action
1.1	Create a new Oracle database user to own the Enterprise Architect tables.
1.2	Open your SQL management console of choice (such as Oracle SQL Developer) and connect to the newly create Enterprise Architect repository.
1.3	Load the EASchema_1220_Oracle.sql file from the Sparx Systems website .
1.4	Run the script to create the required database schema.

2. Set up Oracle connection

2.1	In order for an OLE/DB connection to connect to an Oracle based Enterprise Architect repository, an entry in each user's local TNSNAMES.ORA needs to be defined, stating the server name, Port and other
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details of the Oracle server.

3. Set up Initial Data

Enterprise Architect repositories require a basic amount of reference data to function correctly.

You can set up this initial data in one of two different ways:

- Transfer the entire contents of an existing model into the new database, or
- Load initial data using a SQL Script

3.1 Load Initial Data - Transfer existing model

If you choose to set up your new database with the contents of an existing model then Sparx Systems recommend that a Project Integrity check is performed on the existing model to ensure it is 'clean' and free from data-related errors before being copied into the new database.

The Enterprise Architect installation provides a model called EABase.eap, which is copied into the installation folder specifically for the purpose of providing basic data for a new model. However, if you have customized the various drop-down lists in another model then you might

prefer to use that. Regardless of what model you choose to use, the process is the same and is outlined here.

Step	Action
3. 1. 1	In Enterprise Architect, open the existing repository and select 'Configure > Model > Integrity > Project Integrity' in the ribbon.
3. 1. 2	Ensure that the 'Action' panel is set to 'Report Only' and that all items in 'Checks to Run' are enabled, then click on the Go button.
3. 1. 3	If Enterprise Architect detects that the existing model contains integrity issues, they will be listed in the main panel at the bottom of the dialog. These issues should be resolved before continuing with the project transfer.
3. 1. 4	With Enterprise Architect open, ensure that there is no project loaded, by selecting 'Close Project' from the  button.
3. 1. 5	Select the 'Configure > Model > Transfer > Project Transfer' ribbon option. The 'Project Transfer' dialog displays.
3. 1.	In the 'Transfer Type' panel, select 'File to DBMS'.

6	
3. 1. 7	<p>At the right of the 'Source Project' field, click on the  button and browse for the name of the project file to copy to Oracle.</p> <p>If the .EAP file has Replication enabled, this must be removed before performing the transfer.</p>
3. 1. 8	<p>At the right of the 'Target Project' field, click on the  button.</p> <p>The 'Datalink Properties' dialog displays.</p>
3. 1. 9	<p>Select 'Oracle Provider for OLE DB' from the list.</p> <p>Click on the Next button.</p>
3. 1. 10	<p>On the 'Connection' page of the 'Datalink Properties' dialog, enter the Oracle service name in the 'Data Source' field, and the user name and password as required.</p> <p>Click on the OK button. The 'Project Transfer' dialog redisplay.</p>
3. 1. 11	<p>If required, select the 'Logfile' checkbox and type a path and filename for the data transfer log file.</p>
3. 1.	<p>Click on the Transfer button to begin the data</p>

12	transfer process.
3. 1. 13	When the process is complete, you have created a project on an Oracle database and can now connect to it and open it from Enterprise Architect.

3.2. Load Initial Data - SQL Script

3. 2. 1	Open your SQL management console of choice (such as SQL Developer) and log in as the owner of the newly created Enterprise Architect repository.
3. 2. 2	Load the EABase_1220_Oracle.sql file from the Sparx Systems website .
3. 2. 3	Run EABase_1220_Oracle.sql to create the required database schema.

Notes

- When transferring a project to Oracle you must have access rights to execute the `CREATE SEQUENCE` command

Create an Oracle Repository

Creating an Oracle database is fully documented in the product information provided with your Oracle installer.

Before creating an Oracle data repository, install the appropriate version of Oracle (9i, 10g, 11g or 12c) and MDAC 2.6 or higher, and obtain access permission to create a new database.

There are many ways to create a new Oracle repository; a common method is to use a SQL-based Management Console such as SQL Developer, which provides a convenient graphical user interface for creating databases, executing scripts, and making backups and restores.

However, the exact method used is not important to this discussion, and you can use the most convenient or familiar method at your disposal.

Having created your Oracle repository, use the SQL script provided by Sparx Systems to create the required table definitions and indexes for Enterprise Architect. The `EASchema_1220_Oracle.sql` is freely available on the [DBMS Based Repositories](#) page on the Sparx Systems website.

Notes

- Enterprise Architect only supports the 32-bit versions of Oracle's OLE/DB and ODBC drivers

- For performance reasons, Sparx Systems recommends the use of the Oracle's OLE/DB driver over the Oracle ODBC driver
- Enterprise Architect is not compatible with the Microsoft OLE DB Provider for Oracle driver
- Set the collation to the alphabet you use, such as Latin or Cyrillic

Set up an Oracle ODBC Driver

After you have created an Oracle repository, you can either set up an ODBC DSN to the new database in order for Enterprise Architect to connect to it, or configure Enterprise Architect to use the Oracle OLE DB provider in connection strings to the new database.

Notes:

- For performance reasons, Sparx Systems recommends using Oracle Provider for OLE DB
- Enterprise Architect does not support the 'Microsoft OLE DB Provider for Oracle' driver

Prerequisites

- Install the Oracle DBMS and repository

Set up the Oracle ODBC driver

Your Oracle driver is now available to connect to the repository from Enterprise Architect.

Step	Action
1	Under both 32-bit and 64-bit operating systems,

	<p>Enterprise Architect requires 32-bit ODBC drivers to connect to a repository through ODBC. You can quickly load the correct 32-bit ODBC Data Source Administrator by selecting the 'Configure > User Tools > ODBC Data Sources' ribbon option.</p> <p>The ODBC Data Source Administrator window displays.</p>
2	<p>Click on the Add button.</p> <p>The 'Create New Data Source' dialog displays, enabling you to add a new DSN.</p>
3	<p>Select 'Oracle in OraDB11g_home1' from the list (or similar, depending on the ODBC installation).</p>
4	<p>Click on the Finish button.</p> <p>The 'Oracle ODBC Driver Configuration' dialog displays.</p>
5	<p>Enter these configuration details:</p> <ul style="list-style-type: none">• A data source name for the connection• A description (optional)• The TNS Service Name (click on the drop down arrow and select from the list)• User ID
6	<p>Click on the Test Connection button and enter the Oracle user password to confirm that the details are</p>

	correct.
7	<p>If the test succeeds, click on the OK button to complete the configuration.</p> <p>If the test does not succeed, review your settings.</p>

Connect to an Oracle Repository (ODBC)

To access a your Oracle repository, you must provide the connection details to Enterprise Architect.

Note: For performance reasons, Sparx Systems recommends using Oracle Provider for OLE DB (see *Connect to an Oracle Data Repository (OLE DB)*).

Note: Enterprise Architect does not support the 'Microsoft OLE DB Provider for Oracle' driver.

Prerequisites

- The Oracle repository and the project already exist
- You have SELECT, UPDATE, INSERT and DELETE access permissions
- The Oracle ODBC driver has been set up

Access

Ribbon	 : Open Project
Keyboard	Ctrl+O

Shortcuts

Connect to an Oracle Data Repository using an ODBC Driver

Step	Action
1	In the 'Open Project' dialog, select the 'Connect to Server' checkbox.
2	Click on the  button. The 'Data Link Properties' dialog displays.
3	Select 'Microsoft OLE DB Provider for ODBC Drivers' from the list.
4	Click on the Next>> button. The 'Connection' tab displays.
5	In the 'Data source' field, click on the drop-down arrow and select the data source name.
6	Type in the user name and password.

7	Click on the Test Connection button to confirm that the details are correct.
8	If the test does not succeed, revise your settings. If the test succeeds, click on the OK button; Oracle prompts you for the password.
9	Type in the password. The 'Connection Name and Type' dialog displays.
10	Give the connection a suitable name so that you can recognize it in the 'Recent Projects' panel on the 'Open Project' dialog.
11	If you want to encrypt and hide the connection details of the database from the users that the connection string is given to, select the 'Encrypt Connection String' checkbox.
12	The Lazy Load facility does not load the full project view when the model is loaded; instead, it loads only the parts that are necessary to display the visible portion of the tree. With this set, the model loads faster and users can begin work sooner, but at the expense of later small delays as Enterprise Architect loads specific portions of the model. If you want to use the Lazy load facility, select the 'Lazy Load' checkbox.

13	<p>If required, select the 'Use WAN Optimization' checkbox.</p> <p>Note: this option is only included for historical reasons, the WAN Optimizer product has been replaced by the vastly improved Pro Cloud Server. The WAN Optimizer was originally created to improve performance over a Wide Area Network by compressing all database requests from Enterprise Architect to reducing transfer times.</p> <p>If you select this checkbox, complete the next two fields (see your administrator for the correct values); otherwise go to step 16.</p>
14	<p>In the 'Server' field, type the network name or address of the optimizer server.</p>
15	<p>In the 'Port' field, type the number of the Port on which the server is running on the remote machine.</p>
16	<p>Click on the OK button to complete the configuration and open the project.</p> <p>This also adds the project name to the 'Recent' list on the Start Page; from now on, you can open the project again just by clicking on this name.</p>

Notes

- Connecting to DBMS based Repositories is available in the Corporate, Unified and Ultimate editions of Enterprise Architect

Connect to an Oracle Repository (OLE DB)

To access your Oracle repository, you must provide the connection details to Enterprise Architect.

Prerequisites

- Oracle Client already installed on the client machine; please ensure that the OLE/DB drivers are installed (you can download the drivers from the Oracle Technology Network web site, as part of the Oracle Data Access Components (ODAC) package - see *Learn more*)
- The Oracle repository and the project already exist
- You have SELECT, UPDATE, INSERT and DELETE access permissions

Access

Ribbon	 : Open Project
Keyboard Shortcuts	Ctrl+O

Connect to an Oracle Repository using OLE DB

Step	Action
1	In the 'Open Project' dialog, select the 'Connect to Server' checkbox.
2	Click on the  button. The 'Data Link Properties' dialog displays.
3	Select 'Oracle Provider for OLE DB' from the list. Do not select 'Microsoft OLE DB Provider for Oracle'; Enterprise Architect might not work as expected.
4	Click on the Next>> button. The 'Connection' tab displays.
5	In the 'Data source' field, click on the drop-down arrow and select the data source name (the service name of the Oracle database).
6	Type in the user name and password.

7	Click on the Test Connection button to confirm that the details are correct.
8	If the test does not succeed, revise your settings. If the test succeeds, click on the OK button; the 'Connection Name and Type' dialog displays.
9	Give the connection a suitable name so that you can recognize it in the 'Recent Projects' panel on the 'Open Project' dialog.
10	If you want to encrypt and hide the connection details of the database from the users that the connection string is given to, select the 'Encrypt Connection String' checkbox.
11	<p>If required, select the 'Lazy Load' checkbox to not load the full project view when the model is loaded; instead, only the parts that are necessary to display the visible portion of the tree are loaded.</p> <p>With this setting, the model loads faster and users can begin work sooner, but at the expense of later small delays as Enterprise Architect loads specific portions of the model.</p>
12	<p>If required, select the 'Use WAN Optimization' checkbox.</p> <p>Note: this option is only included for historical</p>

	<p>reasons, the WAN Optimizer product has been replaced by the vastly improved Pro Cloud Server. The WAN Optimizer was originally created to improve performance over a Wide Area Network by compressing all database requests from Enterprise Architect to reducing transfer times.</p> <p>If you select this checkbox, complete the next two fields (see your administrator for the correct values); otherwise go to step 15.</p>
13	<p>In the 'Server' field, type the network name or address of the optimizer server.</p>
14	<p>In the 'Port' field, type the number of the Port on which the server is running on the remote machine.</p>
15	<p>Click on the OK button to complete the configuration and open the project.</p> <p>This also adds the project name to the 'Recent' list on the Start Page; from now on, you can open the project again just by clicking on this name.</p>

Notes

- This feature is available in the Corporate, Unified and Ultimate editions of Enterprise Architect

Create a Project in a PostgreSQL Database

To create a project in a repository on PostgreSQL, you work through these stages:

- Stage 1: Create an empty database repository and set up the data tables
- Stage 2: Set up the PostgreSQL ODBC Driver
- Stage 3: Set up initial model data

Prerequisites

- A machine with PostgreSQL 9 or higher installed and running
- psqlODBC, version 8.03 or higher has been installed (do not use version 8.3.4 or 8.4.1)

1. Create Database Repository

Step	Action
1.1	Create the empty database and configure it to your installation's defaults.

1. 2	Open your SQL management console of choice (such as pgAdmin) and connect to the new database.
1. 3	Load the EASchema_1220_PostgreSQL.sql file from the Sparx Systems website .
1. 4	Run the EASchema_1220_PostgreSQL.sql to create the required database schema.

2. Set up the ODBC DSN

Step	Action
2. 1	<p>Create a suitable ODBC Data Source to the new database, making sure to select these extended options:</p> <p>Page 1:</p> <p>Disable Genetic Optimizer - Uncheck</p> <p>Use Declare/Fetch - Check</p> <p>Unknowns as LongVarChar - Check</p> <p>Bools as Char - Uncheck</p> <p>Max Varchar - 1024</p>

Max LongVarChar - 1000000

Page 2:

bytea as LO - **Check**

Disallow Premature - **Check**

Protocol - **7.4+**

3. Set up Initial Data

Enterprise Architect repositories require a basic amount of reference data to function correctly.

You can set up this initial data in one of two different ways:

- Transfer the entire contents of an existing model into the new database, or
- Load initial data using a SQL Script

3.1 Load Initial Data - Transfer existing model

If you choose to set up your new database with the contents of an existing model then Sparx Systems recommend that a Project Integrity check is performed on the existing model to ensure it is 'clean' and free from data-related errors before

being copied into the new database.

The Enterprise Architect installation provides a model called EABase.eap, which is copied into the installation folder specifically for the purpose of providing basic data for a new model. However, if you have customized the various drop-down lists in another model then you might prefer to use that. Regardless of what model you choose to use, the process is the same and is outlined here.

Step	Action
3. 1. 1	In Enterprise Architect, open the existing repository and select 'Configure > Model > Integrity > Project Integrity' in the ribbon.
3. 1. 2	Ensure that the 'Action' panel is set to 'Report Only' and that all items in 'Checks to Run' are enabled, then click on the Go button.
3. 1. 3	If Enterprise Architect detects that the existing model contains integrity issues then it will list them in the main panel at the bottom of the dialog. These issues should be resolved before continuing with the project transfer.
3. 1. 4	With Enterprise Architect open, ensure that there is no project loaded, by selecting 'Close Project' from the  button.

<p>3. 1. 5</p>	<p>Select the 'Configure > Model > Transfer > Project Transfer' ribbon option.</p> <p>The 'Project Transfer' dialog displays.</p>
<p>3. 1. 6</p>	<p>In the 'Transfer Type' panel, select 'File to DBMS'.</p>
<p>3. 1. 7</p>	<p>In the 'Source Project' field, click on the  button and browse for the name of the project file to copy to the repository.</p> <p>If the .EAP file has Replication enabled, this must be removed before performing the transfer.</p>
<p>3. 1. 8</p>	<p>At the right of the 'Target Project' field, click on the  button.</p> <p>The 'Datalink Properties' dialog displays.</p>
<p>3. 1. 9</p>	<p>Select 'Microsoft OLE DB Provider for ODBC Drivers' from the list.</p> <p>Click on the Next button.</p>
<p>3. 1. 10</p>	<p>On the 'Use Data Source Name' field, click on the drop-down arrow and select the ODBC Data Source you configured to point to your new database.</p> <p>Click on the OK button. The 'Project Transfer' dialog redisplays.</p>

3. 1. 11	If required, select the 'Logfile' checkbox and type a path and filename for the data transfer log file.
3. 1. 12	Click on the Transfer button to begin the data transfer process.
3. 1. 13	When the process is complete, you have created a project on a PostgreSQL database and can now connect to it and open it from Enterprise Architect.

3.2 Load Initial Data - SQL Script

3. 2. 1	Open your SQL management console of choice (such as pgAdmin) and connect to the new database.
3. 2. 2	Load the EABase_1220_PostgreSQL.sql file from the Sparx Systems website .
3. 2.	Run EABase_1220_PostgreSQL.sql to create the required database schema.

3	
---	--

Notes

- During the transfer, if an error message displays reporting '`...nonstandard use of \\ in a string literal...`', set the server variable in the `postgresql.conf` file to:
`escape_string_warning = off`

Create a PostgreSQL Repository

Creating a PostgreSQL database is fully documented in the product information provided with your PostgreSQL installer.

There are many ways to create a new PostgreSQL database. A common method is to use an SQL-based Management Console such as pgAdmin, which provides a convenient graphical user interface for creating databases, executing scripts, and performing backups and restores. However, the exact method used is not important to this discussion, and you can use the most convenient or familiar method at your disposal.

Having created your PostgreSQL database, use the SQL script provided by Sparx Systems to create the required table definitions for Enterprise Architect. The `EASchema_1220_PostgreSQL.sql` script is freely available on the [DBMS Based Repositories](#) page on the Sparx Systems website.

Notes

- Ensure that the collation is set to the alphabet you use, such as Latin or Cyrillic

Set up a PostgreSQL ODBC Driver

After you have created a PostgreSQL database, you will need to set up an ODBC DSN to the new database in order for Enterprise Architect to connect to it.

Prerequisites

Install:

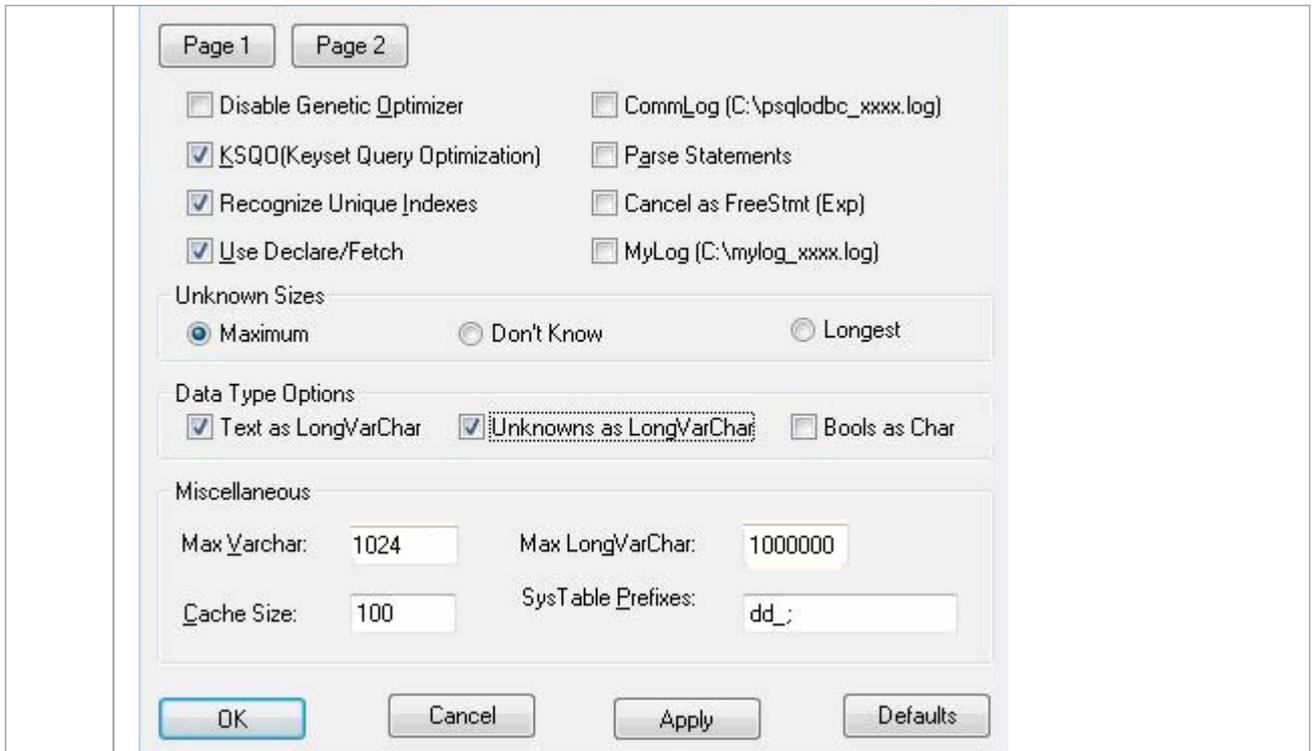
- PostgreSQL DBMS and repository
- PostgreSQL ODBC driver software version 7.03.01.00 or above (note that versions 8.3.4, 8.4.1 and 9.03 of the PostgreSQL ODBC Driver are not supported)

Set up the ODBC driver

Your PostgreSQL driver is now available to connect to the repository from Enterprise Architect.

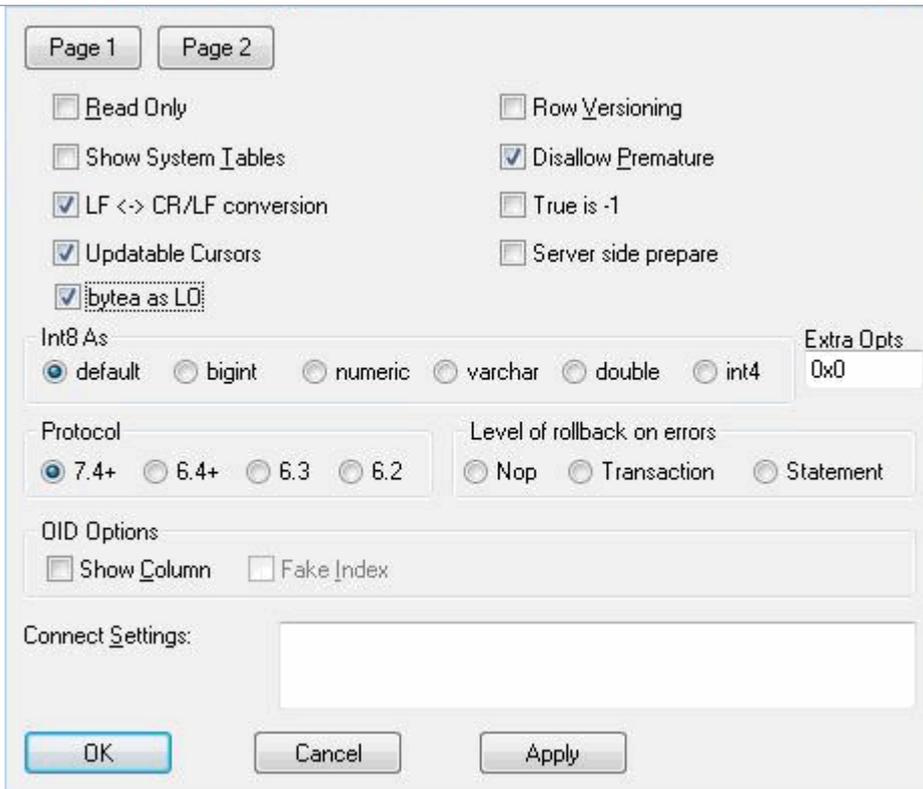
Step	Action
1	Under both 32-bit and 64-bit operating systems, Enterprise Architect requires 32-bit ODBC drivers to connect to a repository through ODBC. You can quickly load the correct 32-bit ODBC Data Source

	<p>Administrator by selecting the 'Configure > User Tools > ODBC Data Sources' ribbon option.</p> <p>The ODBC Data Source Administrator window displays.</p>
2	<p>Click on the Add button.</p> <p>The 'Create New Data Source' dialog displays, enabling you to add a new DSN.</p>
3	<p>Select 'PostgreSQL UNICODE' from the list.</p>
4	<p>Click on the Finish button.</p> <p>The 'PostgreSQL Connector/ODBC' dialog displays.</p>
5	<p>Enter these configuration details:</p> <ul style="list-style-type: none">• A data source name for the connection• The actual name of the database• The host address of the DBMS server• User name• A description (optional)• The password
6	<p>To set the advanced options, click on the Datasource button and set the options on 'Page 1' as shown:</p>



Note: From version 9.5.4 onwards some options shown in this image are no longer available and can be ignored.

7 If you are using a version of PostgreSQL between 8 and 9.5.4, set the options on Page 2 as shown:



- The 'Disallow Premature' checkbox should be checked
- In the 'Protocol' panel, the '7.4+' radio button should be selected

Note: From version 9.5.4 onwards the two options are no longer available and can be ignored.

8 Click on the OK button to complete the configuration.

Connect to a PostgreSQL Repository

To access your PostgreSQL repository, you must provide the connection details to Enterprise Architect.

Prerequisites

- The PostgreSQL repository and the project already exist
- You know the database user credentials that have SELECT, UPDATE, INSERT and DELETE access permissions
- The PostgreSQL ODBC driver has been set up

Access

Ribbon	 : Open Project
Keyboard Shortcuts	Ctrl+O

Connect to the repository

Step	Action
1	In the 'Open Project' dialog, select the 'Connect to Server' checkbox.
2	Click on the  button. The 'Data Link Properties' dialog displays.
3	Select 'Microsoft OLE DB Provider for ODBC Drivers' from the list.
4	Click on the Next>> button. The 'Connection' tab displays.
5	Click on the 'Use data source name' radio button and on the drop-down arrow in its field. From the list, select the ODBC driver you have set up to connect to your PostgreSQL repository.
6	Click on the Test Connection button to confirm that the details are correct.
7	If the test does not succeed, revise your settings. If the test succeeds, click on the OK button; the 'Connection Name & Type' dialog displays.
8	Give the connection a suitable name so that you can

	<p>recognize it in the 'Recent Projects' panel on the 'Open Project' dialog.</p>
9	<p>If required, select the 'Encrypt Connection String' checkbox.</p> <p>This encrypts and hides the connection details of the database from the users that the connection string is given to.</p>
10	<p>If required, select the 'Lazy Load' checkbox to not load the full project view when the model is loaded; instead, only the parts that are necessary to display the visible portion of the tree are loaded.</p> <p>With this setting, the model loads faster and users can begin work sooner, but at the expense of later small delays as Enterprise Architect loads specific portions of the model.</p>
11	<p>If required, select the 'Use WAN Optimization' checkbox.</p> <p>Note: this option is only included for historical reasons, the WAN Optimizer product has been replaced by the vastly improved Pro Cloud Server. The WAN Optimizer was originally created to improve performance over a Wide Area Network by compressing all database requests from Enterprise Architect to reducing transfer times.</p> <p>If you select this checkbox, complete the next three fields (see your administrator for the correct values);</p>

	otherwise go to step 15.
12	In the 'Server' field, type the network name or address of the optimizer server.
13	In the 'Port' field, type the number of the Port on which the server is running on the remote machine.
14	In the 'DSN' field, type the data source name of the database as it appears on the remote machine.
15	Click on the OK button to complete the configuration and open the project. This also adds the project name to the 'Recent' list on the Start Page; from now on, you can open the project again just by clicking on this name.

Notes

- This feature is available in the Corporate, Unified and Ultimate editions of Enterprise Architect

Create a Project in a SQL Server Database

To create a project on a repository in SQL Server 2005 and above, or SQL Server Express 2005 and above, work through these stages:

- Stage 1: Create an empty database repository and set up the data tables
- Stage 2: Set up initial model data

Prerequisites

- A machine with SQL Server installed and running
- MDAC 2.6 or higher on the client machine
- Permissions to create databases on SQL Server (see the *SQL Server Security Permissions* Help topic)
- ALTER permission on the t_image table in Enterprise Architect, to be able to import model images

1. Create a SQL Server Repository

Step	Action

1. 1	Create a new empty database and configure it to your installation's defaults.
1. 2	Open your SQL management console of choice (such as Microsoft SQL Server Management Studio) and connect to the new database.
1. 3	Load the EASchema_1220_SQLServer.sql file from the Sparx Systems website .
1. 4	Run EASchema_1220_SQLServer.sql to create the required database schema.

2. Set up Initial Data

Enterprise Architect repositories require a basic amount of reference data to function correctly.

You can set up this initial data in one of two different ways:

- Transfer the entire contents of an existing model into the new database, or
- Load initial data using a SQL Script

2.1 Load Initial Data - Transfer existing model

If you choose to set up your new database with the contents of an existing model then Sparx Systems recommend that a Project Integrity check is performed on the existing model to ensure it is 'clean' and free from data-related errors before being copied into the new database.

The Enterprise Architect installation provides a model called EABase.eap, which is copied into the installation folder specifically for the purpose of providing basic data for a new model. However, if you have customized the various drop-down lists in another model then you might prefer to use that. Regardless of what model you choose to use, the process is the same and is outlined here.

Step	Action
2. 1. 1	In Enterprise Architect, open the existing repository and select 'Configure > Model > Integrity > Project Integrity' in the ribbon.
2. 1. 2	Ensure that the 'Action' panel is set to 'Report Only' and that all items in 'Checks to Run' are enabled, then click on the Go button.
2. 1. 3	If Enterprise Architect detects that the existing model contains integrity issues, they will be listed in the main panel at the bottom of the dialog. These issues should be resolved before continuing with the project transfer.

2. 1. 4	With Enterprise Architect open, ensure that there is no project loaded, by selecting 'Close Project' from the  button.
2. 1. 5	Select the 'Configure > Model > Transfer > Project Transfer' ribbon option. The 'Project Transfer' dialog displays.
2. 1. 6	In the 'Transfer Type' panel, select '.EAP to DBMS'.
2. 1. 7	In the 'Source Project' field, type the name of the project file to copy to the repository. If the .EAP file has Replication enabled, this must be removed before performing the transfer.
2. 1. 8	At the right of the 'Target Project' field, click on the  button. The 'Datalink Properties' dialog displays.
2. 1. 9	Select 'Microsoft OLE DB Provider for SQL Server' or 'Microsoft OLE DB Driver for SQL Server' from the list. Click on the Next button.
2.	On the 'Data Source Details' page of the 'Datalink

<p>1. 10</p>	<p>Properties' dialog, type in the server name, database name and any security details required. Click on the OK button. The 'Project Transfer' dialog redisplay.</p>
<p>2. 1. 11</p>	<p>If required, select the 'Logfile' checkbox and type a path and filename for the data transfer log file.</p>
<p>2. 1. 12</p>	<p>Click on the Transfer button to begin the data transfer process.</p>
<p>2. 1. 3</p>	<p>When the process is complete, you have created a project on a SQL Server database and can now connect to it and open it from Enterprise Architect.</p>

2.2 Load Initial Data - SQL Script

The Sparx Systems website provides a SQL Script that contains a series of INSERT statements that will load an empty database with all the data needed by Enterprise Architect.

Step	Action

2. 2. 1	Open your SQL management console of choice (such as Microsoft SQL Server Management Studio), and connect to the new database.
2. 2. 2	Load the EABase_1220_SQLServer.sql file from the Sparx Systems website .
2. 2. 3	Run EABase_1220_SQLServer.sql to create the required database schema.

Create a SQL Server Repository

Creating a SQL Server database is fully documented in the product information provided with your SQL Server installer.

There are many ways to create a new SQL Server database. A common method is to use an SQL-based Management Console such as Microsoft SQL Server Management Studio, which provides a convenient graphical user interface to create databases, execute scripts, and perform backups and restores. However, the exact method used is not important to this discussion, and you can use the most convenient or familiar method at your disposal.

Having created your SQL Server database, use the SQL script provided by Sparx Systems to create the required table definitions for Enterprise Architect. The `EASchema_1220_SQLServer.sql` script is freely available on the [DBMS Based Repositories](#) page on the Sparx Systems website.

SQL Server Management Studio example

Step	Action
1	In SQL Server Management Studio, locate the server on which to create your new repository (such as

	DBSERVER02\SQLEXPRESS) and login with administrator privileges.
2	Right-click and choose the 'New Database' option.
3	Enter a suitable name for the database. Set any file options as required. Ensure that the database collation is set to the alphabet you use, such as Latin or Cyrillic, and case-insensitive.
4	Click on the database to select it, then select the 'New Query' menu option.
5	In the Query window, use the 'Open File' dialog to locate the EASchema_1220_SQLServer.sql script file.
6	Click on the Open button. In the drop-down menu, check that you have selected the correct database to run the script in.
7	Click on the Execute button; SQL Server executes the script, which creates the base tables for an Enterprise Architect project.

Notes

- You should have ALTER permission on the t_image table in Enterprise Architect, to be able to import model images
- When creating a project in a SQL Server database you must have 'db_ddladmin' permission in order to execute the SET IDENTITY_INSERT (table) {ON | OFF} command

SQL Server Security Permissions

The security model implemented by Microsoft's SQL Server is quite powerful and highly configurable, supporting many different possible solutions for securing the data contained in SQL Server databases and ensuring it is only accessible to users with the required permissions. For a more detailed description and explanation of SQL Server permissions, see the SQL Server documentation.

Enterprise Architect users who plan to add, edit and delete contents in a SQL Server repository must have permissions to execute SELECT, UPDATE, INSERT and DELETE statements on all Tables in the Enterprise Architect database. The easiest way to achieve this is to grant the database roles of 'db_datareader' and 'db_datawriter' to each user.

Additional Permissions for Diagram Images

When an Enterprise Architect repository has not been defined with the optional schema update (EASchema_1220_SQLServer_Update1.sql) database users will require additional permissions in order to be able to perform Project Transfers and XML imports that include diagram images.

Why is this the case? In order for Enterprise Architect to be able to store unique images in each repository the value used as the key in T_IMAGE records needs to be set; however,

the original schema definition of the T_IMAGE table did not allow this and as a result Enterprise Architect needed to execute SET IDENTITY_INSERT T_IMAGE {ON | OFF} commands, which requires higher permissions; i.e. the role of 'db_ddladmin'.

To avoid the need for each user to have an elevated level of permissions, an optional schema update (EASchema_1220_SQLServer_Update1.sql) was developed which unfortunately is not backward compatible with earlier versions of Enterprise Architect. Therefore the optional schema update (EASchema_1220_SQLServer_Update1.sql) should only be applied if all users are using Enterprise Architect 14 or later. see <https://sparxsystems.com/resources/repositories/index.html>

Does Enterprise Architect support Windows Authentication?

Enterprise Architect does support Windows Authentication. However, the type of authentication is determined by the configuration of the connection used, and not by Enterprise Architect.

Windows Authentication to SQL Server is commonly used by Enterprise Architect users, but this requires that all Windows users in Enterprise Architect be defined on the SQL Server server and be granted the security roles 'db_datareader' and 'db_datawriter' for the repository.

Connect to a SQL Server Repository

After you have created a Microsoft SQL Server database, you can connect to it immediately without any further configuration directly from Enterprise Architect.

Prerequisites

- The Microsoft SQL Server database/repository already exists and you know the details
- You have the details of a database user with the required permissions within the database, see [SQL Server Security Permissions](#)
- Microsoft SQL Server OLE DB driver

Access

Ribbon	 : Open Project
Keyboard Shortcuts	Ctrl+O

Connect to the repository

Step	Action
1	In the 'Open Project' dialog, select the 'Connect to Server' checkbox.
2	Click on the  button. The 'Data Link Properties' dialog displays.
3	<p>Select 'Microsoft OLE DB Provider for SQL Server' or 'Microsoft OLE DB Driver for SQL Server' from the list.</p> <p>Note:</p> <ul style="list-style-type: none"> • 'Microsoft OLE DB Provider for SQL Server' is usually part of the Windows Operating System, otherwise it can be installed as part of MDAC 2.8 • 'Microsoft OLE DB Driver for SQL Server' is a newly released driver that adds support for TLS v1.2 and other more recent features of Microsoft SQL Server (such as multi-subnet failover capabilities); this driver is available from the Microsoft website
4	Click on the Next>> button. The 'Connection' tab displays.

5	Type in the server details, including Server Name, User Name and Password.
6	Click on the 'Select the database on the server' option and on the drop-down arrow. From the list, select the project to connect to.
7	Click on the Test Connection button to confirm that the details are correct.
8	If the test does not succeed, revise your settings. If the test succeeds, click on the OK button; the 'Connection Name & Type' dialog displays.
9	Give the connection a suitable name so that you can recognize it in the 'Recent Projects' panel on the 'Open Project' dialog.
10	If required, select the 'Encrypt Connection String' checkbox. This encrypts and hides the connection details of the database from the users that the connection string is given to.
11	If required, select the 'Lazy Load' checkbox to not load the full project view when the model is loaded; instead, only the parts that are necessary to display the visible portion of the tree are loaded.

	<p>With this setting, the model loads faster and users can begin work sooner, but at the expense of later small delays as Enterprise Architect loads specific portions of the model.</p>
12	<p>If required, select the 'Use WAN Optimization' checkbox.</p> <p>Note: this option is only included for historical reasons, the WAN Optimizer product has been replaced by the vastly improved Pro Cloud Server. The WAN Optimizer was originally created to improve performance over a Wide Area Network by compressing all database requests from Enterprise Architect to reducing transfer times.</p> <p>If you select this checkbox, complete the next two fields (see your administrator for the correct values); otherwise go to step 15.</p>
13	<p>In the 'Server' field, type the network name or address of the optimizer server.</p>
14	<p>In the 'Port' field, type the number of the Port on which the server is running on the remote machine.</p>
15	<p>Click on the OK button to complete the configuration and open the project.</p> <p>This also adds the project name to the 'Recent' list on the Start Page; from now on, you can open the</p>

	project again just by clicking on this name.
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Notes

- Connecting to DBMS based Repositories is available in the Corporate, Unified and Ultimate editions

Create a Project in a Sybase ASA/SQL Anywhere Database

To create a project in a repository on Sybase Adaptive Server Anywhere 8 or 9, or SQL Anywhere 10, 11 or 12, you work through these stages:

- Stage 1: Create an empty database repository
- Stage 2: Set up the ASA ODBC Driver
- Stage 3: Set up initial data

Prerequisites

- A machine with Adaptive Server Anywhere installed and running
- Install SQL Anywhere Studio, this also installs the ASA ODBC driver

1. Create Database Repository

Step	Action
1.1	Create a new empty database.

1. 2	Open your SQL management console of choice (such as Sybase Central) and connect to the new database.
1. 3	Load the EASchema_1220_SybaseASA.sql file from the Sparx Systems website .
1. 4	Run the EASchema_1220_SybaseASA.sql to create the required database schema.

2. Set up the ODBC DSN

Step	Action
2. 1	Create a suitable ODBC Data Source using the Sybase Adaptive Server Anywhere ODBC driver to the new database.

3. Set up Initial Data

Enterprise Architect repositories require a basic amount of

reference data to function correctly. For Sybase ASA-based models you can provide this by transferring the contents of an existing model into the new database.

Step	Action
3.1	In Enterprise Architect, open the existing repository and select 'Configure > Model > Integrity > Project Integrity' in the ribbon.
3.2	Ensure that the 'Action' panel is set to 'Report Only' and that all items in 'Checks to Run' are enabled, then click on the Go button.
3.3	If Enterprise Architect detects that the existing model contains integrity issues, they will be listed in the main panel at the bottom of the dialog. These issues should be resolved before continuing with the project transfer.
3.4	With Enterprise Architect open, ensure that there is no project loaded, by selecting 'Close Project' from the  button.
3.5	Select the 'Configure > Model > Transfer > Project Transfer' ribbon option. The 'Project Transfer' dialog displays.
3.	

6	In the 'Transfer Type' panel, select '.EAP to DBMS'.
3. 7	In the 'Source Project' field, type the name of the project file to copy to the repository. If the .EAP file has Replication enabled, this must be removed before performing the transfer.
3. 8	At the right of the 'Target Project' field, click on the  button. The 'Datalink Properties' dialog displays.
3. 9	Select 'Microsoft OLE DB Provider for ODBC Drivers' from the list. Click on the Next button.
3. 10	In the 'Use Data source name' field, click on the drop-down arrow and select the ODBC Data Source you configured to point to your new database. Click on the OK button. The 'Project Transfer' dialog redisplay.
3. 11	If required, select the 'Logfile' checkbox and type a path and filename for the data transfer log file.
3. 12	Click on the Transfer button to begin the data transfer process.
3.	When the process is complete, you have created a

13	project on an ASA database and can now connect to it and open it from Enterprise Architect.
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Create an Adaptive Server Anywhere Repository

Creating an ASA database is fully documented in the product information provided with your ASA installer.

There are many ways to create a new Adaptive Server Anywhere database. A common method is to use an SQL-based Management Console such as Sybase Central, which provides a convenient graphical user interface to for creating databases, executing scripts, and performing backups and restores. However the exact method used is not important to this discussion, and you can use the most convenient or familiar method at your disposal.

Having created your ASA database, use the SQL script provided by Sparx Systems to create the required table definitions for Enterprise Architect. The `EASchema_1220_SybaseASA.sql` script is freely available on the [DBMS Based Repositories](#) page on the Sparx Systems website.

Notes

- Ensure that the collation is set to the alphabet you use, such as Latin or Cyrillic

Set up an ASA ODBC Driver

After you have created a Sybase ASA database, you will need to set up an ODBC DSN to the new database in order for Enterprise Architect to connect to it.

Prerequisites

Install:

- Adaptive Server Anywhere - SQL Anywhere Studio 8 or higher, and create a repository
- ASA ODBC driver software (installed with the ASA DBMS)

Set up the ODBC Driver

Step	Action
1	Under both 32-bit and 64-bit operating systems, Enterprise Architect requires 32-bit ODBC drivers to connect to a repository through ODBC. You can quickly load the correct 32-bit ODBC Data Source Administrator by selecting the 'Configure > User Tools > ODBC Data Sources' ribbon option.

	The ODBC Data Source Administrator window displays.
2	Click on the Add button. The 'Create New Data Source' dialog displays, enabling you to add a new DSN.
3	Select 'Adaptive Server Anywhere' or 'SQL Anywhere' from the list.
4	Click on the Finish button. The 'ASA Connector/ODBC' dialog displays.
5	Enter these configuration details: <ul style="list-style-type: none">• A data source name for the connection, on the 'ODBC' tab• User name and password on the 'Login' tab ('dba' and 'sql' are the defaults when ASA is installed)• The server name and the path to the database, on the 'Database' tab• The network protocol on the 'Network' tab (if the database is on a network location)
6	Return to the 'ODBC' tab and click on the Test Connection button to confirm that the details are correct.
7	If the test succeeds, click on the OK button to

	<p>complete the configuration.</p>
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	<p>If the test does not succeed, review your settings.</p>
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Connect to an ASA Data Repository

To access a project in your Adaptive Server Anywhere (ASA) data repository, you must connect to the data repository from Enterprise Architect.

Prerequisites

- The ASA repository and the project already exist
- You have SELECT, UPDATE, INSERT and DELETE access permissions
- The ASA ODBC driver has been set up

Access

Ribbon	 : Open Project
Keyboard Shortcuts	Ctrl+O

Connect to the repository

Step	Action
1	In the 'Open Project' dialog, click on the Connect to Server button.
2	Click on the  button. The 'Data Link Properties' dialog displays.
3	Select 'Microsoft OLE DB Provider for ODBC Drivers' from the list.
4	Click on the Next>> button. The 'Connection' tab displays.
5	Click on the 'Use data source name' radio button and on the drop-down arrow in its field. From the list, select the ODBC driver you have set up to connect to your ASA repository.
6	Click on the Test Connection button to confirm that the details are correct.
7	If the test does not succeed, revise your settings. If the test succeeds, click on the OK button; the 'Connection Name & Type' dialog displays.
8	Give the connection a suitable name so that you can

	<p>recognize it in the 'Recent Projects' panel on the 'Open Project' dialog.</p>
9	<p>If required, select the 'Encrypt Connection String' checkbox.</p> <p>This encrypts and hides the connection details of the database from the users that the connection string is given to.</p>
10	<p>If required, select the 'Lazy Load' checkbox to not load the full project view when the model is loaded; instead, only the parts that are necessary to display the visible portion of the tree are loaded.</p> <p>With this setting, the model loads faster and users can begin work sooner, but at the expense of later small delays as Enterprise Architect loads specific portions of the model.</p>
11	<p>If required, select the 'Use WAN Optimization' checkbox.</p> <p>Note: this option is only included for historical reasons, the WAN Optimizer product has been replaced by the vastly improved Pro Cloud Server. The WAN Optimizer was originally created to improve performance over a Wide Area Network by compressing all database requests from Enterprise Architect to reducing transfer times.</p> <p>If you select this checkbox, complete the next three fields (see your administrator for the correct values);</p>

	otherwise go to step 15.
12	In the 'Server' field, type the network name or address of the optimizer server.
13	In the 'Port' field, type the number of the Port on which the server is running on the remote machine.
14	In the 'DSN' field, type the data source name of the database as it appears on the remote machine.
15	Click on the OK button to complete the configuration and open the project. This also adds the project name to the 'Recent' list on the Start Page; from now on, you can open the project again just by clicking on this name.

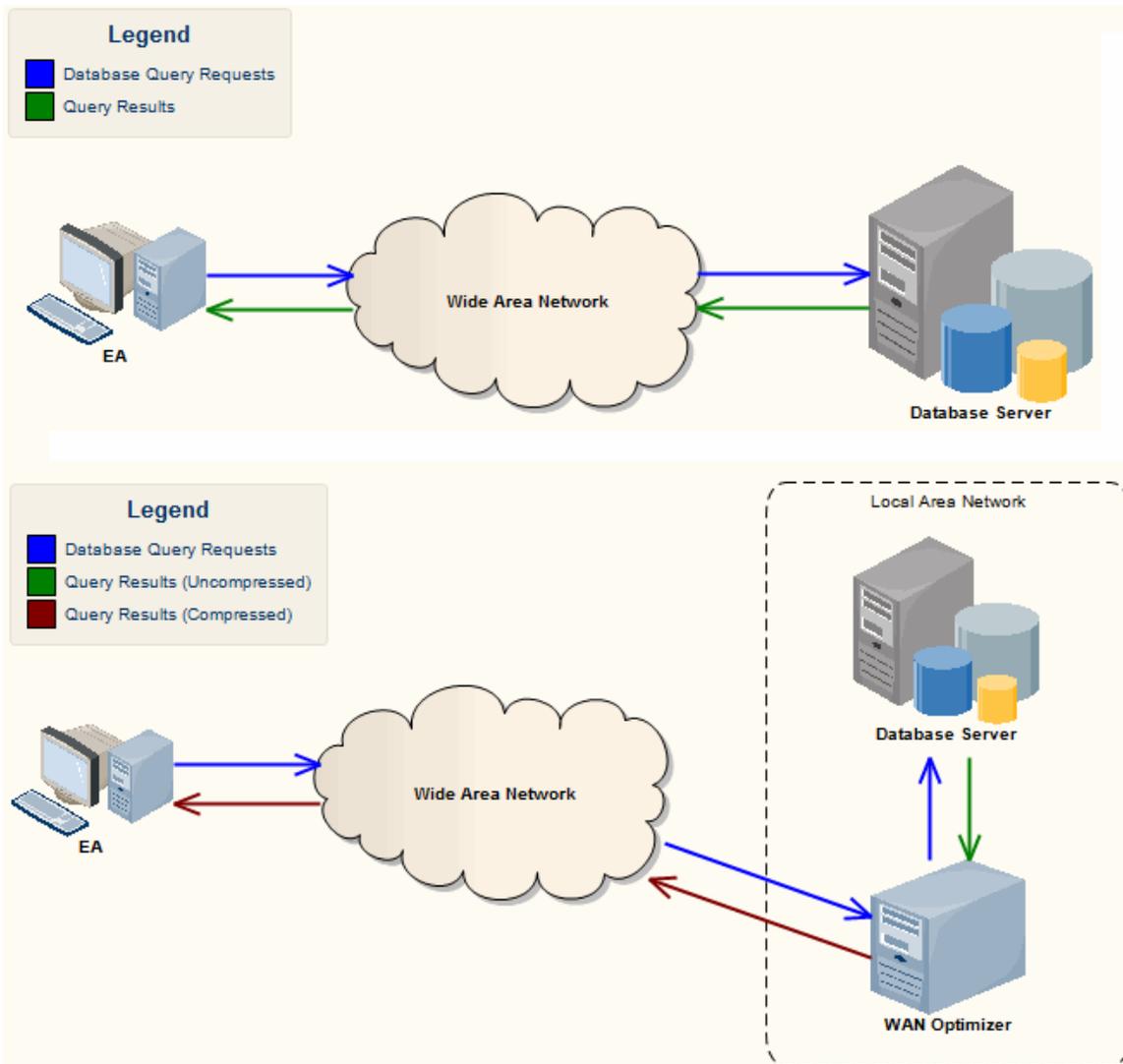
Notes

- Connecting to DBMS based Repositories is available in the Corporate, Unified and Ultimate editions of Enterprise Architect

The WAN Optimizer

You can significantly improve Enterprise Architect's performance in a Wide Area Network (WAN) by reducing the amount of data transmitted and the number of network calls made. To achieve this, you can use the Sparx Systems Wide Area Network (WAN) Optimizer, a lightweight server installed on a Local Area Network (LAN) connection to a Database Management System (DBMS) that hosts an Enterprise Architect repository. You can configure the server to listen for client connections on a particular port; it acts as a local proxy to execute queries and return the results in a compressed format to the client.

In this diagram, transmission between Enterprise Architect and a DBMS is depicted first without and then with the WAN Optimizer.



You can download the WAN Optimizer installer from the 'Downloads' page of the Registered Users section of the Sparx Systems website. The Wan Optimizer Service installer package provides two installable features for the target machine:

- WAN Optimizer Service - the installer also helps register and start the service on the target machine, and add it to the Windows Startup folder
- WAN Optimizer Admin Client - to enable an administrator to administer and configure the service from a remote client

The Optimizer has its own *Sparx Systems WAN Optimizer User Guide*. See that Guide for more information on:

- WAN Optimizer Components
- Installing and Starting the WAN Optimizer Service
- Configuring the Service
- Troubleshooting

Notes

- The WAN optimizer was the first generation product
- The Sparx Systems Cloud Services was the second generation and replaced the WAN optimizer
- The Sparx Systems Pro Cloud Server is the third generation and has replaced the Sparx Systems Cloud Services
- All Cloud products provided similar basic functionality of the WAN Optimizer, but the later generations do so faster and more securely; they also have many more additional features

Whilst you can still use the WAN Optimizer as described here, we recommend that the Pro Cloud Server should now be used instead of both the WAN Optimizer and Cloud Services products.

