

CA ERwin® Data Modeler Workgroup Edition

Workgroup Edition Implementation and Administration Guide

Release 9.5.1



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CA Technologies Product References

This document references the following CA Technologies products:

- CA ERwin® Data Modeler Workgroup Edition (CA ERwin DM WE)
- CA ERwin® Data Modeler Standard Edition (CA ERwin DM)
- CA ERwin® Data Modeler Navigator Edition (CA ERwin DM NE)

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Documentation Changes

This guide replaces the following guides that were available in the previous versions:

- Workgroup Edition Implementation Guide
- Workgroup Edition Administration Guide

The information in the two guides are merged to create this guide.

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Chapter 1: Modeling in the Multiuser Environment

CA ERwin Data Modeler Workgroup Edition coordinates the development and management of data models created with CA ERwin Data Modeler.

This section contains the following topics:

[CA ERwin Data Modeler Workgroup Edition](#) (see page 13)

[Model Life Cycle Frameworks](#) (see page 14)

CA ERwin Data Modeler Workgroup Edition

CA ERwin Data Modeler Workgroup Edition provides a multiuser modeling environment that makes coordinated, large-scale modeling possible. It enables collaboration among project managers, data modeling team members, and standards administrators by providing workgroup modeling services, including conflict resolution, versioning, security, and standards management. You can coordinate the efforts of model teams to document existing systems, create new eBusiness systems, and drive data standardization. Model sharing encourages teamwork, so modelers can work together more efficiently to optimize model-based development. Your modelers get more work done in less time with better results.

Workgroup modeling operates in a three-tier architecture, where CA ERwin Data Modeler connects to Mart server through a web server. The models are held in a database or Mart; you can use Microsoft SQL Server, Oracle, or Sybase as the host database.

Workgroup modeling features are provided to help control updates to models when you are opening, closing, and saving models. The administrator installs the program and initializes the database on the DBMS server. The administrator also has the responsibility of setting up the library structure in which models are organized, and assigning security profiles to users. After a model is saved to the database, control of who can work on the model and how changes are saved to the model is handled by profiles, making it possible for workgroups to work on large models without confusion. CA ERwin Data Modeler Workgroup Edition supports many security and administrative features related to its multiuser capabilities. For this reason, routine management is usually performed by a dedicated administrator. Administrators can find detailed information regarding their tasks and responsibilities in the *Administration Guide*.

You can also use CA ERwin Data Modeler Navigator Edition with CA ERwin Data Modeler Workgroup Edition. Read-only access is permitted to data models, so your workgroup can use this to share information with others without the risk that unauthorized changes might be saved to Mart.

Model Life Cycle Frameworks

Use one of the following model life cycle frameworks in your organization:

Model-Driven Development

Changes to the schema are made to the model first and then forward-engineered.

System-Driven Models

Changes are made directly to the schema and the schema is reverse-engineered into the model to reflect the changes.

Informational Models

Contains logical-only models, enterprise-wide models, or standards and sample models.

Each type of framework has different considerations that you must think about when configuring your database and developing its supporting policies. You are not required to choose a particular framework, however, it helps to know your development process before building a library structure.

Model-Driven Development Framework

In the model-driven framework, the model is always the source of all changes. You create a new database schema by forward engineering the model. The life cycle of a model in the model-driven Development framework can follow a path like this:

- Create the library structure (for example, Development, Test, and Production) and populate them with CA ERwin Data Modeler templates.
- Create the logical model in a development library.
- Promote the model to the test library when it is ready.
- Generate the schema from the test library.
- Modify the test model as required and synchronize it to the schema.
- Promote the model to the production library when it is ready.
- Publish the refreshed production model.
- Update the enterprise-wide model, if necessary.
- Incorporate changes into the development model for further changes, and repeat the process.

System-Driven Model Framework

In the system-driven framework, there is an established information system from which you can reverse engineer database tables. The life cycle of a model in the system-driven Development framework can follow a path as described below:

- Create the library structure (for example, Reverse Eng, Test, Production). You do not require CA ERwin Data Modeler templates because you do not create models from scratch.
- Reverse engineer the model from the information system into the designated library.
- Enhance the model with logical information and input from analysts.
- Update the model to reflect changes in the physical schema.
- Create a version of the model.
- Synchronize the schema and the model using Complete Compare.
- Publish the model.
- Repeat the last three steps as the system is modified.

Informational Model Framework

In the Informational Model framework, CA ERwin Data Modeler Workgroup Edition contains logical-only models, enterprise-wide models, or standards and sample models. There is no forward engineering with the intent of using the schema. The life cycle of a model in the Informational Model framework can follow a path as described below:

- Create the library structure and populate them with templates.
- Develop the initial model. Use reverse engineering and model new components as required.
- Publish the initial model to the appropriate parties for modification and refinement.
- Get approval, and then version the model.
- Publish the approved model.
- Update and publish models as the enterprise model evolves.

Chapter 2: Install and Configure an Oracle Mart

This section describes how you can install and configure a Mart on an Oracle database.

This section contains the following topics:

[How to Install and Configure an Oracle Mart](#) (see page 18)

[How to Upgrade a Mart from r9.0.0 to r9.5.0](#) (see page 36)

[Change the Mart Database Server](#) (see page 43)

[Troubleshooting](#) (see page 43)

How to Install and Configure an Oracle Mart

In the previous versions, CA ERwin DM connected to the Mart database through the database client software. Now, the application connects to the Mart database through a web server. The database client software is no longer required.

The Mart comprises the following components:

Database

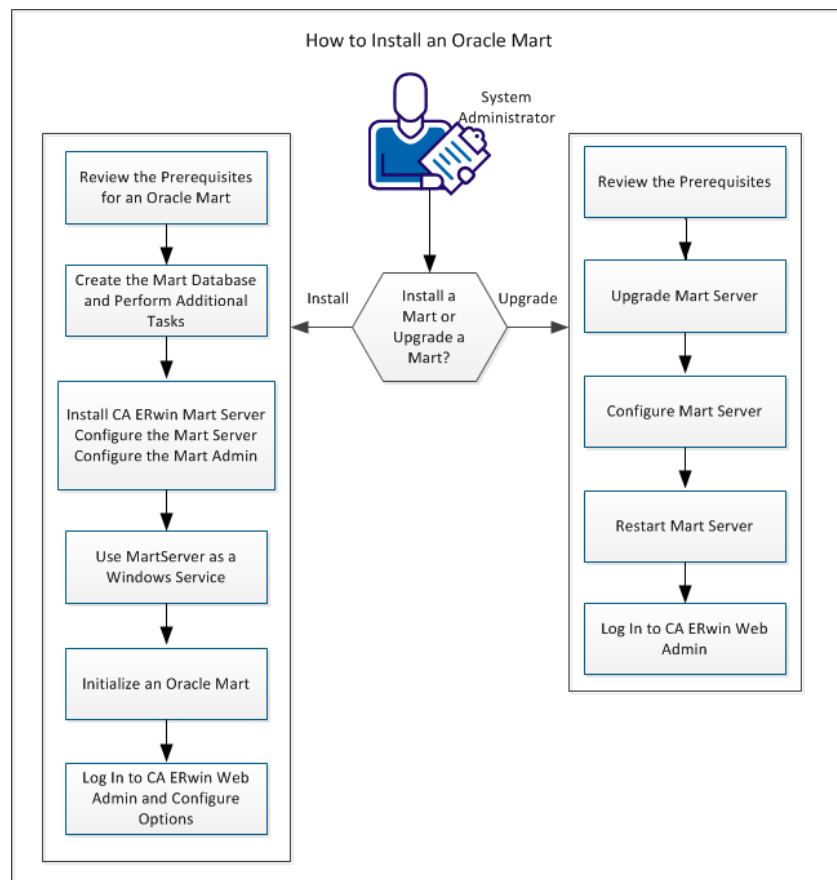
Stores the user data for the Workgroup Edition. You can use an Oracle 10g or 11g database for the Mart database. You must use a new database and not an existing database that was created for an older version of the data modeling tool.

Applications

Includes a web-based component named CA ERwin Mart Administrator that helps you manage the Mart through a web console.

Web server

Hosts CA ERwin Mart Administrator. You can use a web server of your choice. If you have not installed a web server, use the ERwin Mart Server option and install Tomcat.



Complete the following steps in the same order to install and configure the Mart:

1. [Review the prerequisites of an Oracle Mart.](#) (see page 21)
2. Create the Mart Database and perform the additional tasks.
3. [Install CA ERwin Mart Server.](#) (see page 28)
4. Use MartServer as a Windows Service.
5. [Initialize an Oracle Mart.](#) (see page 33)
6. Log in to CA ERwin Mart Administrator and configure settings.

Complete the following steps to upgrade a Mart from r9.0 to the latest release:

1. [Review the Prerequisites](#) (see page 37)
2. [Upgrade the Mart Server](#) (see page 38)
3. [Configure the Mart Server](#) (see page 38)
4. [Restart the Mart Server](#) (see page 41)
5. [Log In to CA ERwin Web Admin](#) (see page 42)

Mart Architecture

In the previous versions, CA ERwin DM connected to the Mart database through the database client software. Now, the application connects to the Mart database through a web server. The database client software is no longer required. The web server includes a web-based administration console—CA ERwin Mart Administrator. If you are using the Workgroup Edition, you must install and configure CA ERwin Mart Administrator.

The Mart comprises the following components:

Database

Stores the user data for the Workgroup Edition. You can use an Oracle 10g or 11g database for the Mart database. You must use a new database and not an existing database that was created for an older version of the data modeling tool.

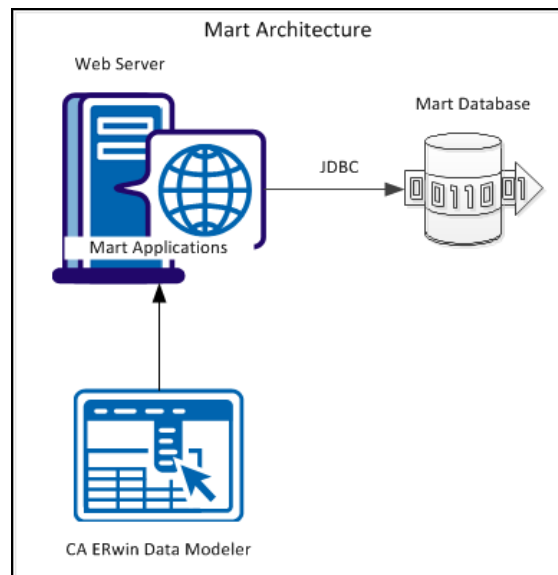
Applications

Includes a web-based component named CA ERwin Mart Administrator that helps you manage the Mart through a web console.

Web server

Hosts CA ERwin Mart Administrator. You can use a web server of your choice. If you have not installed a web server, use the ERwin Mart Server option and install Tomcat.

The following diagram shows the new architecture:



The new architecture has the following benefits:

- **Separate logical and physical users:** In the previous versions, Mart (or Model Manager) users required database level privileges to access the Mart functionality. The Mart database administrators added or deleted users in the Mart database. This approach is changed now. The logical users are separated from physical users, so Mart Administrators can create the Mart users without creating the corresponding database users.
- **Authentication through Active Directory services:** Earlier, if you wanted to provide access to a user group, you added each user individually. Now, because of the new architecture, you can use the Active Directory services and can provide access to the group. Anyone who is part of the group gets access.
- **Mart administration outside CA ERwin Data Modeler:** In the previous versions, Mart Administrators used CA ERwin Data Modeler for administrative activities such as managing permissions. This required non-modelers to know how to use CA ERwin Data Modeler. In the new architecture, the administration component is built on a separate layer on top of CA ERwin Data Modeler and is hosted on a web server. Mart Administrators can access CA ERwin Web Admin from any computer and can perform administrative activities through a web console.

Install a Mart or Upgrade a Mart?

Use the following guidelines to determine if you must install a Mart or upgrade a Mart:

- If you are new to CA ERwin Data Modeler and have purchased r9.5.0 Workgroup Edition, then install the r9.5.0 Mart. Use the *How to Install and Configure a Mart* procedure that is appropriate for your Mart database.
- If you have a r9.0.0 Mart, then upgrade the Mart from r9.0.0 to r9.5.0. Use the *How to Upgrade a Mart from r9.0.0 to r9.5.0* procedure to upgrade your Mart to r9.5.0. The models that are created in r9.0.0 are upgraded when a user connects to the r9.5.0 Mart and opens the models.
- If you have an existing Mart and the version is r7.3 through r8.2.7, install the r9.5.0 Mart. Use the *How to Install and Configure a Mart* procedure that is appropriate for your Mart database. After installing the Mart, use the Upgrade Mart utility to upgrade the Mart models from r7.3 through r8.2.7 to r9.5.0.

Review the Prerequisites for an Oracle Mart

Before you install the Mart components, help ensure that the minimum system requirements that are outlined in this topic are met.

You can use any of the following combinations to install CA ERwin Data Modeler, the Mart database, and the MartServer application:

- Install CA ERwin Data Modeler, the Mart database, and the MartServer application on the same computer.
- Install CA ERwin Data Modeler, the Mart database, and the MartServer application on different computers.
- Install CA ERwin Data Modeler and the Mart database on one computer, and install the MartServer application on a different computer.
- Install CA ERwin Data Modeler on one computer, and install the Mart database and the MartServer application on a different computer.

Help ensure that you always install the MartServer application on the Windows operating system.

System requirements for installing the MartServer application

Hardware requirements (based on physical hardware performance, not a virtual environment):

- 2 GHZ or higher dual core processor
- 4 GB RAM (8 GB or more for large marts)
- 4 GB of disk space or more as required to support your specific mart

Operating system:

- Microsoft Windows Vista
- Microsoft Windows Server 2008 SP2
- Microsoft Windows Server 2003 SP2
- Microsoft Windows XP SP3
- Microsoft Windows 7
- Microsoft Windows 8
 - **Note:** CA ERwin Data Modeler has only been certified on the 32-bit versions of the Windows operating systems described in the preceding list. CA ERwin Data Modeler is a 32-bit application, so you may experience problems running this application on a 64-bit operating system.
- Microsoft .NET Framework 3.5 or higher
- All current Microsoft Windows critical updates are applied

Database:

- The Mart Server can use a standalone or can share an existing database server for an Oracle 10g or 11g database.
- To create the Mart, you must be the database schema owner user and you must have the DBA role in the target database on the Oracle server.
- (Optional) You have modified the following parameters in the initialization file (InitSID.ora):

```
Remote_OS_Authent=""  
OS_Authent_Prefix=TRUE
```
- (Optional) To use the Korean language with the Mart database, use KO16MSWIN949 or AL32UTF8 character set depending on your operating system language pack. For more information, see the Oracle documentation.

CA ERwin Mart Administrator web client:

- Supported browsers:
 - Microsoft Internet Explorer 8[®] or newer
 - Mozilla Firefox[®] v.9.0 or newer
 - Google Chrome 14 or newer
 - Apple Safari 5 or newer
- Adobe Flash plug-in version 8 or newer for the respective browser

Other requirements

Help ensure that the following additional requirements are met:

- If you want to use Microsoft IIS as the web server, you have configured it.
- The DBMS is installed and prepared for creating the Mart Database.
- The Mart database is created. At least one user with administrator privileges is present. You have run the initial queries on the Oracle database. For more information about the initial queries, see the Implementation Guide.
- If you want to add Windows Group users as Mart users, you have the Active Directory Server details.

Note: You can add Windows Group users as normal Mart users, but not the Mart administrator. A Mart administrator must be a database-authenticated user.

Important disclaimer notice on all requirements

1. The requirements that are mentioned previously define the minimum requirements which permit the application to run with reasonable performance based on a small business use case scenario. The actual requirements for an enterprise-wide use case based on larger models and configurations require significantly greater resources to obtain acceptable performance.
2. These requirements are based on actual physical hardware (no virtual environment) and the following assumptions:
 - Minimal to no network overhead (both the database and application servers are locally installed)
 - Vendor's default install of the current version of their software (with all current service or fix packs)
 - No other applications sharing the defined hardware configuration (for example, a “clean” machine)

Any other hardware/software configurations are acceptable as long as they provide the same (or better) performance characteristics identified.

Create the Mart Database and Perform the Additional Tasks

Perform the following setup tasks in your DBMS environment before you can install and use the software:

1. Install the DBMS on the server where you plan to store the mart.

Help ensure that you can create tables, indexes, stored procedures, and public synonyms. For more information about memory and disk space requirements, see the system requirements for each DBMS (Microsoft SQL Server, Sybase, and Oracle).

2. Create the mart.

Use the DBMS features to create or identify the required storage objects and the mart. The specific requirements vary depending on your DBMS type.

Note: To create, update, or delete a mart in CA ERwin Data Modeler Workgroup Edition, you must be the database schema owner and you must have the DBA role.

Additional Tasks

The DBA and the system administrator responsible for installing the software on an Oracle database management system performs these tasks.

Use graphical tools or SQL *Plus (all versions), SQL*DBA, or the Oracle Enterprise Management Console to perform these tasks. Some SQL commands are included where appropriate. The Data file paths, data file sizes, role names, and user names are included as examples only.

1. Check the SYSTEM tablespace.

The installation creates several stored procedures. All triggers, stored procedures, and packages are kept in the Oracle SYSTEM tablespace. The standard size of the SYSTEM tablespace assumes that you are not using procedural options, so the SYSTEM tablespace must be often expanded. If other Oracle applications are not using procedural code, then expand the SYSTEM tablespace to 32 MB. If other Oracle applications also use procedural code, expand the SYSTEM tablespace to at least 32 MB.

2. Check the Rollback Segment tablespace.

If your instance uses UNDO tablespace, do not create rollback segments.

Significant rollback space is required for installing and use. The rollback segments must be in their own separate tablespace and each have at least 16 MB of available space. There must be one rollback segment for every four concurrent users, with a maximum of 50 rollback segments. The available space must scale upward with increasing numbers of rollback segments. Finally, the rollback segment optimal parameter must be set to control rollback segment growth and space consumption.

Note: For Steps 3, 4, and 5, use the Dictionary-managed tablespaces.

3. Create a data tablespace of at least 32 MB.

For example:

```
CREATE TABLESPACE MyMart  
DATAFILE '/db01/oracle/rdbms9i/data/mymart.ora' SIZE 100M;
```

Or For Locally Managed extents:

```
CREATE TABLESPACE Mymart  
DATAFILE '/db01/oracle/rdbms9i/data/mymart.ora' SIZE 100M  
EXTENT MANAGEMENT LOCAL SEGMENT SPACE MANAGEMENT AUTO;
```

4. Create an index tablespace of at least 32 MB.

For example:

```
CREATE TABLESPACE MMARTINDEX  
DATAFILE '/db02/oracle/rdbms9i/data/mmartindex.ora' SIZE 75M;
```

Or For Locally Managed extents:

```
CREATE TABLESPACE MMARTINDEX  
DATAFILE '/db02/oracle/rdbms9i/data/mmartindex.ora' SIZE 75M  
EXTENT MANAGEMENT LOCAL SEGMENT SPACE MANAGEMENT AUTO;
```

5. Create a temporary tablespace.

For example:

```
CREATE TEMPORARY TABLESPACE MMTEMP TEMPFILE  
'/db03/oracle/rdbms9i/data/mmarttemp.ora' SIZE 50M;
```

Or For Locally Managed extents:

```
CREATE TEMPORARY TABLESPACE MMTEMP TEMPFILE  
'/db03/oracle/rdbms9i/data/mmarttemp.ora' SIZE 50M  
EXTENT MANAGEMENT LOCAL UNIFORM SIZE 1M;
```

Note: For more details about syntax and options regarding tablespace creation, see the appropriate Oracle documentation.

6. Create an Oracle user with DBA privileges for use by the CA ERwin Data Modeler Workgroup Edition Installer or designated schema owner.

Assign the data tablespace to this user as the default tablespace, and the temporary tablespace as the temporary tablespace to the user.

For example:

```
CREATE USER STEVE IDENTIFIED BY STEVE
DEFAULT TABLESPACE MyMart
TEMPORARY TABLESPACE MMTEMP
QUOTA UNLIMITED ON MyMart
QUOTA UNLIMITED ON MMARTINDEX;
```

7. Create the CA ERwin Data Modeler Workgroup Edition Installer role.

The following example is the role that the Oracle user requires to install CA ERwin Data Modeler Workgroup Edition.

```
CREATE ROLE MMINSTALL;
```

8. Grant the Oracle privileges to the Installer role.

The following example shows the Oracle privileges that the CA ERwin Data Modeler Workgroup Edition Installer must install on Oracle. For the last command, log in as sys with the sysdba role in the user-name or the command will fail.

```
grant create sequence to MMINSTALL;
grant create table to MMINSTALL;
grant create view to MMINSTALL;
grant drop public synonym to MMINSTALL;
grant create public synonym to MMINSTALL;
grant create procedure to MMINSTALL;
grant select on dba_data_files to MMINSTALL;
```

9. Create the CA ERwin Data Modeler Workgroup Edition User role.

For example:

```
CREATE ROLE MMUSER;
```

When you select this role as the CA ERwin Data Modeler Workgroup Edition User role during Step 4 of the installation procedure, the Setup program generates grant statements. These statements grant the object level privileges to this role.

10. Grant the create session Oracle privilege to the User role.

For example:

```
grant create session to MMUSER;
```

Note: To use the database, an Oracle user needs only the create session privilege.

11. Grant the CA ERwin Data Modeler Workgroup Edition User role to the Installer role.

For example:

```
grant MMUSER to MMINSTALL;
```

12. Select the CA ERwin Data Modeler Workgroup Edition tablespaces and User role.

When prompted for tablespace and role information, select the Workgroup Edition data tablespace, the Workgroup Edition index tablespace, and the Workgroup Edition User role (the role created in Step 9).

Oracle SQL Commands

If a graphical DBMS access tool is not available, you can use Oracle SQL commands through SQL*DBA or SQL*Plus.

Example: Create a tablespace using the CREATE TABLESPACE command

```
CREATE TABLESPACE mm_data      /* The tablespace name. */
DATAFILE 'C:\ORANT\DATABASE\mmdata.dat' /* The data file name. */
SIZE integer_value K or M or G /* The data file size */
DEFAULT STORAGE (              /* The default storage parameters */
  INITIAL integer_value K or M or G /* The initial extent size */
  NEXT integer_value K or M or G    /* The next extent size */
  PCTINCREASE integer_value /* The percent to grow extents */
  MINEXTENTS integer_value /* The minimum number of extents */
  MAXEXTENTS integer_value /* The maximum number of extents */
);
```

Example: Create an Oracle user using the CREATE USER command

```
CREATE USER mm_user_1 /* The user id name */
IDENTIFIED BY password /* The user password */
DEAFULT TABLESPACE tablespace_name /* The user's default tablespace */
TEMPORARY TABLESPACE tablespace_name /* The user's temporary tablespace */
QUOTA unlimited_or_integer_K_M_G ON tablespace_name /* The user's quota on a
tablespace */
;
```

Example: Grant user privileges using the GRANT command

```
GRANT role_or_privilege_name
TO user_or_role
;
```

Install CA ERwin Mart Server

The Mart Server and Mart Admin war files are deployed on a Web server. You can either use an existing web server, or install the web server through the CA ERwin MartServer Installation Wizard. You must install CA ERwin Mart Server and configure it regardless of whether you use Mart Server as a Windows service.

Note: Ensure that you have reviewed the Install a Mart or Upgrade a Mart topic before proceeding.

Follow these steps:

1. Do one of the following tasks:
 - Insert the installation DVD and select Mart Server Installation.
 - Download the CAEDMMS95.exe file from the online CA Technologies [product page](#) and run it.

The CA ERwin MartServer Installation Wizard appears.

2. Go through the wizard steps to install CA ERwin Mart Server.

Depending on the options you select, CA ERwin Mart Server and/or Java Runtime Environment (JRE) and Tomcat are installed.

Note: If Java (any version) is already available in the computer and the environment variable JRE_HOME is set, the installer overwrites JRE_HOME with the new Java path. The JRE version that is shipped with the installer is 1.7. If a Tomcat web server is already installed in the computer and the environment variable CATALINA_HOME is set, the installer replaces CATALINA_HOME with the new path.

3. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Configure MartServer.

The CA ERwin Mart Configuration dialog appears.

Configure the CA ERwin Mart Server

1. Complete the following fields in the Mart Server tab:

Database Type

Specifies the database server type.

Port No.

Specifies the port number of the database server.

Server Name

Specifies the name of the database server where you have installed the Mart database. For example, suppose that you are using SQL Server 2008 as the Mart database. Enter the name of the computer where SQL Server 2008 is installed.

Instance Name

Specifies the name of the database instance.

Database Name

Specifies the name of the Mart database.

Note: If you are installing the Mart for the first time, use a new database. Do not use an existing database that was created for r7.3 through r8.2.7 Mart. If you are upgrading the Mart from r9.0.0 to the latest release, use the r9.0.0 Mart database.

User Name

Specifies the user name to connect to the Mart database. Enter the name of a user that is authenticated by the Mart database.

Note: A Windows authenticated user account cannot be used to initialize the Mart.

Password

Specifies the password to connect to the Mart database.

Note: The following fields--Domain Controller Name, Domain/User Name, and Password are required only if you are using the Active Directory authentication.

Domain Controller Name

Specifies the fully qualified name of the Active Directory Server (Domain Controller). Enter the name in the following format:

LDAP://server/distinguished-name

Example: ldap://mktgna:3268/dc=abc, dc=com

Here, *mktgna* is the server name. You can provide either the name of the server or the IP address. 3268 is the port number to which the server listens.

dc=abc, dc=com is the distinguished-name. The distinguished name is the full path of the object.

Note: If you do not know the Domain Controller Name, use the *Nltest* command or talk to your System Administrator.

Domain/User Name

Specifies the domain name and user name in the <domain name>/<user name> format.

Password

Specifies the password of the domain user.

Configure CA ERwin Mart Administrator

1. Enter the following information in the Mart Administrator tab:

Server Name

Specifies the name of the computer where the Web Server is present. For example, if you are using Tomcat, enter the name of the computer where Tomcat is installed.

Default: localhost

Port Number

Specifies the port number on which the Web Server is running.

Default: 18170

Application Name

Specifies the application name with which the Web Server is identified.

Default: MartServer

Transport Layer Security

Specifies if you want to connect to the Mart through a secured connection (SSL). Select this check box if you have implemented SSL.

Hosting Server

Specifies that you want to use the IIS web server to connect to the Mart. Select this check box only if you have configured IIS.

2. Click Configure.

The CA ERwin Mart Administrator and the Mart Server are configured.

More information:

[Configure IIS Web Server](#) (see page 119)

[Implement SSL for IIS](#) (see page 121)

Enable SSL for Tomcat

SSL enables you to access the Mart through a secured connection. You can enable SSL for Tomcat--the default web server, regardless of whether you are installing the Mart for the first time, or you are upgrading it from CA ERwin Data Modeler version 9.0.

Follow these steps:

1. If the Mart Server service is running, stop it. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Stop MartServer Service to stop the web server.
2. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Enable SSL for Tomcat Webserver.

SSL is enabled for Tomcat and a security certificate is created. You must install this security certificate on all the computers from where you want to access the Mart.

3. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Configure MartServer.

The CA ERwin Mart Configuration dialog appears.

4. Go to the Mart Administrator tab and select the Transport Layer Security check box.
5. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Start Mart Server Service.
6. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, CA ERwin Mart Administrator.

The CA ERwin Mart Administrator home page appears and displays HTTPS in the address bar. If a certificate error appears, click Proceed Anyway to begin the session.

Important! If you want to connect to an SSL enabled Mart through API or the Mart Upgrade utility, you must first install the security certificate on the corresponding computer. Install the certificate through the data modeling tool. If you do not install the security certificate, the Mart Upgrade utility and the API will not be able to connect to the SSL enabled Mart.

Disable SSL and Access the Mart Through a Normal Connection

You can disable SSL at any time and access the Mart through a normal connection.

Follow these steps:

1. If the Mart Server Service is running, stop it. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Stop Mart Server Service.
2. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Disable SSL.
3. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Configure MartServer.

The CA ERwin Mart Configuration dialog appears.

4. Go to the Mart Administrator tab and clear the Transport Layer Security check box.
5. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Start Mart Server Service.
6. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, CA ERwin Mart Administrator.

The CA ERwin Mart Administrator home page appears and displays HTTP in the address bar.

Use Mart Server as a Windows Service

The current version of the Mart provides two ways to start the web server that hosts Mart Server:

- Start the web server manually.
- Use a Windows service to start the web server.

For example, if you have used Tomcat as the web server to host Mart Server, you can start Tomcat in two ways:

- Start Tomcat through the startup.bat file or through a shortcut to this file.
- Use a Windows service to start Tomcat.

The benefits of using a Windows service to start a web server are as follows:

- Any user with administrative privileges on a computer can start the Windows service, whereas, only designated users can start a web server manually.
- A Windows service runs regardless of whether a user has logged in. A manually-started web server shuts down when the user who started it logs out.

Follow these steps:

1. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Create MartServer Service to create the MartServer Windows service.

Creating the service is a one-time task. After the service is created, you only have to start and stop the service.

2. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Start MartServer Service to start the web server.

Initialize an Oracle Mart

When you access the Mart database through CA ERwin Mart Administrator for the first time, you must initialize the database.

Note: Before you proceed, verify that you have installed a DBMS, created the Mart database and run the initial queries. If the Mart is already initialized, the Login page appears.

When you open CA ERwin Mart Administrator for the first time, the Initialize Mart web page appears.

Follow these steps:

1. If you are using MartServer as a Windows service, help ensure that the service is started. If not, from the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Start Mart Server to start the Mart Server.

A Windows command prompt window appears and indicates when the server starts.

2. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, CA ERwin Mart Administrator.

CA ERwin Mart Administrator opens in your default browser.

3. Complete the following fields:

Username

Defines the user name with which you want to access the Mart. Enter the name of a user that is authenticated by the Mart database.

Note: A Windows authenticated user cannot initialize the Mart.

Password

Defines the password for the user name.

Confirm Password

Confirms the password that you entered in the previous field.

Email Address

Defines the email address for the user account that you are creating.

Mart Role

Defines the role of the user for the Mart.

Table Tablespace

Defines the table tablespace in which the Mart tables are created.

Index Tablespace

Defines the index tablespace in which the Mart indexes are created.

4. Click Initialize.

The user name is added as an administrator of Mart, Mart is initialized, and the Login web page appears. Initializing is a one-time task. After Mart is initialized, the user who initialized must log in first. Later, any other user who wants to use CA ERwin Mart Administrator can log in.

Note: The user name that is entered here is an application level user and not a database user. Remember the password that you have entered here, because without the password you cannot log in to CA ERwin Mart Administrator for the first time.

Log In to CA ERwin Mart Administrator and Configure Settings

After the Mart is initialized, the user who initialized must log in first. When you log in to Mart for the first time, configure it per the requirements of your organization. You can configure the following settings:

- Default profile for the model creator
- Use default password
- Email notification

Follow these steps:

1. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, CA ERwin Mart Administrator.

The CA ERwin Mart Administrator home page appears. If you have implemented SSL, HTTPS appears in the address bar.

2. Use the credentials with which you initialized the Mart and log in.
3. Click Settings.
4. Complete the following fields:

Default profile for model creator

Specifies the profile that is assigned to a user on a model. This profile is assigned whenever a user creates a model and saves it to Mart for the first time. The user inherits the permissions of the default profile selected here on the model that is saved. For example, suppose that User1 is assigned with Modeler profile and the System Administrator selects Architect as the default profile for model creator. If User1 creates Model1 and saves it to Mart, for Model1, User1 inherits the permissions of Architect. Now, suppose that the System Administrator selects Viewer as the default profile for model creator, and suppose that User1 creates Model2 and saves it to Mart. For Model2, User1 inherits the permissions of Viewer.

Use Default Password

Specifies the default password that you want to use for new users and for resetting passwords, in the absence of an SMTP server for emails.

Note: Select this option only if you do not have an SMTP server that is configured for emails.

SMTP host name

Specifies the name of the SMTP host. Enter the name in the mail.domain.com format. Notification emails are sent from this server.

Port number

Specifies the port number of the SMTP server. The default port number is 25. If your company is using an alternate port number for the mail server, specify that port number.

Authenticate

Specifies whether transactions with the SMTP server are authenticated. Select the check box to authenticate.

User name

Specifies the user name to authenticate the SMTP server. Select the Authenticate check box to enable authentication.

Password

Specifies the password to authenticate the SMTP server. Select the Authenticate check box to enable authentication.

Administrator email

Specifies the email ID of the Mart administrator. Notifications to Mart users are sent from this ID.

No-reply email from

Specifies the email ID from which administrative emails such as the password reset email are sent.

5. Click Save.

Mart options are configured.

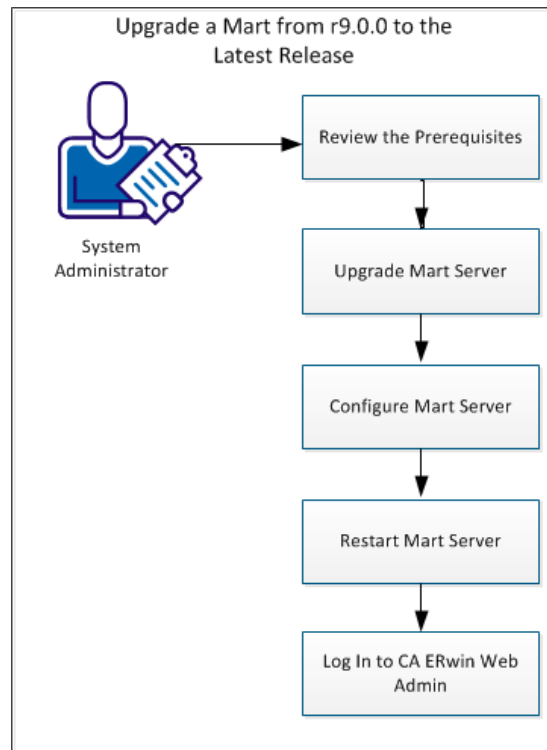
You have installed and configured CA ERwin DM Mart.

How to Upgrade a Mart from r9.0.0 to r9.5.0

If you are using CA ERwin Data Modeler version 9.0.0 Mart and you want to upgrade it to the latest release, upgrade the Mart Server and the Mart database. The Mart server program is upgraded, so you must implement the upgraded software.

Important! The current Mart is designed to work with only the current version of CA ERwin Data Modeler. If you try to connect the current Mart with CA ERwin Data Modeler r9.0.0, it may corrupt the Mart and cause unexpected behavior.

The following diagram illustrates how System Administrators can upgrade a Mart from r9.0.0 to the latest release:



Complete the following tasks to upgrade an existing r9.0.0 Mart to the latest release:

1. [Review the prerequisites.](#) (see page 37)
2. [Upgrade the Mart Server](#) (see page 38).
3. [Configure the Mart Server](#) (see page 38).
4. [Restart the Mart Server service.](#) (see page 41)
5. [Log In to CA ERwin Web Admin](#) (see page 42).

Review the Prerequisites

Review the following prerequisites before you start the upgrade process:

If the Mart database is an Oracle database, the default tablespaces that were used for initializing the r9.0.0 Mart are available for the latest release.

Upgrade the Mart Server

If you are upgrading a Mart from r9.0.0 to the latest release, upgrade the Mart Server.

Note: See the Install a Mart or Upgrade a Mart topic before proceeding.

Follow these steps:

1. If you are running MartServer as a Windows service, stop the service.
Note: If you upgrade the Mart Server without stopping the service, Mart Server may not start after you complete the upgrade process.
2. Download and run the CAEDMMS95.exe file from the CA Support site.
The CA ERwin Mart Server r9.5.0 Install Shield Wizard dialog appears.
3. Follow the wizard.
The Mart Server is upgraded.
4. Restart your computer.

Configure the Mart Server

To connect to the latest Mart, you must configure the Mart Server. Use the same database that you have used for the r9.0.0 Mart.

Note: See the Upgrade Considerations topic before proceeding.

Follow these steps:

1. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Configure MartServer.

The CA ERwin Mart Configuration dialog appears.

Configure the CA ERwin Mart Server

1. Complete the following fields in the Mart Server tab:

Database Type

Specifies the database server type.

Port No.

Specifies the port number of the database server.

Server Name

Specifies the name of the database server where you have installed the Mart database. For example, suppose that you are using SQL Server 2008 as the Mart database. Enter the name of the computer where SQL Server 2008 is installed.

Instance Name

Specifies the name of the database instance.

Database Name

Specifies the name of the Mart database.

Note: If you are installing the Mart for the first time, use a new database. Do not use an existing database that was created for r7.3 through r8.2.7 Mart. If you are upgrading the Mart from r9.0.0 to the latest release, use the r9.0.0 Mart database.

User Name

Specifies the user name to connect to the Mart database. Enter the name of a user that is authenticated by the Mart database.

Note: A Windows authenticated user account cannot be used to initialize the Mart.

Password

Specifies the password to connect to the Mart database.

Note: The following fields--Domain Controller Name, Domain/User Name, and Password are required only if you are using the Active Directory authentication.

Domain Controller Name

Specifies the fully qualified name of the Active Directory Server (Domain Controller). Enter the name in the following format:

LDAP://server/distinguished-name

Example: ldap://mktgna:3268/dc=abc, dc=com

Here, *mktgna* is the server name. You can provide either the name of the server or the IP address. 3268 is the port number to which the server listens.

dc=abc, dc=com is the distinguished-name. The distinguished name is the full path of the object.

Note: If you do not know the Domain Controller Name, use the *Nltest* command or talk to your System Administrator.

Domain/User Name

Specifies the domain name and user name in the <domain name>/<user name> format.

Password

Specifies the password of the domain user.

Configure CA ERwin Mart Administrator

1. Enter the following information in the Mart Administrator tab:

Server Name

Specifies the name of the computer where the Web Server is present. For example, if you are using Tomcat, enter the name of the computer where Tomcat is installed.

Default: localhost

Port Number

Specifies the port number on which the Web Server is running.

Default: 18170

Application Name

Specifies the application name with which the Web Server is identified.

Default: MartServer

Transport Layer Security

Specifies if you want to connect to the Mart through a secured connection (SSL). Select this check box if you have implemented SSL.

Hosting Server

Specifies that you want to use the IIS web server to connect to the Mart. Select this check box only if you have configured IIS.

2. Click Configure.

The CA ERwin Mart Administrator and the Mart Server are configured.

Restart the Mart Server Service

When you modify the details of the Mart Server and Mart Administration programs, restart the Mart Server service.

Follow these steps:

1. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Stop MartServer Service to stop the Mart Server service.
2. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Start MartServer Service to start the Mart Server service.

Log In to CA ERwin Mart Administrator

Log in to CA ERwin Mart Administrator to verify if you have successfully upgraded the Mart Server from r9.0.0 to the latest release.

Follow these steps:

1. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, CA ERwin Mart Administrator.

The CA ERwin Mart Administrator log in page appears. If you have implemented SSL, HTTPS appears in the address bar.

2. Use the credentials with which you initialized the Mart and log in.

The CA ERwin Mart Administrator home page appears.

The models that are created in r9.0.0 are upgraded when a user connects to the latest release Mart and opens the models.

Change the Mart Database Server

Sometimes, you may change the server on which the Mart database is installed, or you may restore the Mart database with a new name. When there is a change the server name or database name, reconfigure the MartServer.

Follow these steps:

1. Back up your Mart database.
2. Restore the database on the designated server.
3. If you use the same computer for Mart Server and restore the database in a different name, include the new database name in the CA ERwin Mart Configuration dialog.

From the Windows Start menu, open the CA ERwin Mart Configuration dialog. In the Mart Server tab, Database Name field, enter the new name with which the database is restored. Enter the current user name and password to access the database. If wrong information is provided here, you may be able to install the Mart, but you cannot log in and cannot use it.

4. If you use a different computer for Mart Server and restore the database in the same name, install the Mart Server on the new computer.

Use the Install CA ERwin Mart Server procedure and install the Mart Server. In the Mart Server tab, Server Name field, enter the name of the new server where the database is restored. Enter the current user name and password to access the database. If wrong information is provided here, you may be able to install the Mart, but you cannot log in and cannot use it.

5. Stop the MartServer service and start it again.
6. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, CA ERwin Mart Administrator.

Enter the credentials of the Mart administrator and log in.

Troubleshooting

This section explains the errors that you can encounter while installing and configuring Mart, and how you can troubleshoot them.

Note: The Mart Server log files are available in the following location:

Windows XP: {user.home}/Local Settings/Application Data/CA/ERwin Mart Server/logs/application.log

Windows 7: {user.home}/AppData/Local/CA/ERwin Mart Server/logs/application.log

Port out of range

Symptom:

Whenever I connect to the web server, I get the following error message:

```
java.lang.IllegalArgumentException: port out of range 80821.
```

Solution:

Type the correct port number in the Configure CA ERwin Mart Administrator's Server dialog and then restart your web server.

Call failed on the server

Symptom:

When I try to connect to the Mart server, I get the following error:

```
500 The call failed on the server; see server log for details
```

Solution:

The probable reasons for this error could be one of the following reasons:

- The server name is not correct.
- The application name is not correct. By default, the application name is MartServer and it is case-sensitive.

Type the correct server name and application name in the CA ERwin Mart Administrator's Server dialog and the Configure MartServer Details dialog. Restart the web server.

Application Internal Error

Symptom:

When I try to connect to the database, I get the following error:

```
Application Internal Error
```

Solution

You get this error when the MartServer application is unable to connect to the required database. The following reasons are probable for this error:

- The database details that are provided in the Configure MartServer Details dialog are incorrect.
- The username and the password for the database are incorrect.
- The database is not present.
- The port number for the database is incorrect.
- The network is down.

Ensure that you enter the correct details of your database in the Mart Server tab of the CA ERwin Mart Configuration dialog.

ORA-12514 TNS listener does not currently know of service requested in connect descriptor

Symptom:

When I try to open the CA ERwin Mart Administrator page, I get the Application Internal Error. The Tomcat windows shows the following error message:

```
ORA-12514, TNS:listener does not currently know of service requested in connect descriptor
```

Solution:

Use a fully qualified instance name when starting the Mart Server.

Mart already exists. Specify another database name

Symptom:

When I try to connect to the Mart, I get the following error message:

An earlier mart is already present in the database you are trying to initialize. This process can not be continued. Please specify another database name to continue.

Solution:

You get this error when you connect to an old Mart that you have used for CA ERwin DM Release 7.x, 8.x, or version 9.0 pre-Beta.

Create a database and provide its details in the Configure MartServer Details dialog.

Initialize page is not loading in Internet Explorer

Symptom:

When I type the URL to initialize my Mart in Internet Explorer, the Initialize Mart page is taking a long time to load.

Solution:

The Initialize Mart page does not load because the Active Scripting option in Internet Explorer is disabled.

To enable Active Scripting, follow these steps:

1. In Internet Explorer, click Tools, Internet Options.
2. In the Security tab, click the Custom Level button.
The Security Settings – Local Intranet Zone window opens.
3. From the list of options, locate Scripting, Active Scripting, and select Enable. Click OK.
4. Restart Internet Explorer and enter the URL to initialize Mart.

The Mart Initialize page opens.

The Tomcat server is not starting properly. The Configure button is disabled.

Symptom:

My administrator has given me the Administrator rights and when I start the Tomcat server, I get a series of errors. Also, I cannot click the Configure button in the configuration dialog because it is disabled.

Solution:

Right-click Start Server, and click Run as Administrator.

The Tomcat server starts without any error, and the configuration button is enabled.

A connection with the server could not be established

Symptom:

When I try to connect to the web server from CA ERwin Data Modeler, I get the following error message:

A connection with the server could not be established

Solution:

Verify that you have provided the correct port number and then reconnect to the web server.

The server name or address could not be resolved

Symptom:

When I try to connect to the web server from CA ERwin Data Modeler, I get the following error message:

The server name or address could not be resolved

Solution:

Verify that the server name where the web server is installed is correct and then reconnect to the server.

Note: If CA ERwin Data Modeler and the web server are installed on the same computer, you can give the server name as localhost. Suppose that CA ERwin Data Modeler and the web server are installed on different computers. The server name is the name of the computer where the web server is installed.

Invalid user ID or password

Symptom:

When I try to connect to the server, I get the following error message:

Invalid user ID or password. Please try again to login.

Solution:

Type the correct user name and password.

Note: The user must be an application level user and not a database user.

Error 12029

Symptom:

When I connect to the web server, I get the following error message:

Error 12029

Solution:

Restart the web server.

Unable to load the web page from my web browser

Symptom:

When I type the URL in Internet Explorer or Google Chrome to connect to the web server, I get the following error messages:

For Internet Explorer

Internet Explorer cannot display the webpage

For Google Chrome

Oops! Google Chrome could not connect to localhost:18170

Solution:

Restart the web server.

Test connection failed

Symptom:

When I use the Mart Upgrade utility on a 64-bit computer and upgrade a r7.3 through r8.2.7 Mart to r9.0.0 through r9.5.0 Mart, I get the following message:

Test connection failed

Solution:

CA ERwin DM is a 32-bit application. When you try to upgrade to r9.0.0 through r9.5.0 Mart on a 64-bit computer, the COM components do not work.

Follow these steps:

1. Paste the code included at the bottom of this topic to a Notepad file and name it as 64_Bit_Upgrade.reg. Note down the folder where you have created this file.

2. After installing CA ERwin DM version 9.0.0 through 9.5.0, right-click 64_Bit_Upgrade.reg and select Merge.
3. From the Windows Start menu, go to Run and type the following commands to re-register the EAL components:

```
regsvr32.exe "<Install Dir>\CA\ERwin Data Modeler r9.0\EAL.dll"  
regsvr32.exe "<Install Dir>\CA\ERwin Data Modeler r9.0\  
Upgrade\R8_Binaries\EAL.dll".
```

4. Right-click 64_Bit_Upgrade.reg and select Merge again.

You can now upgrade to version 9.0.0 through 9.5.0 Mart on a 64-bit computer.

64_Bit_Upgrade.reg

Copy the following code and paste it to a new Notepad file:

```
Windows Registry Editor Version 5.00  
  
[HKEY_CLASSES_ROOT\Wow6432Node\CLSID\{9527D0BA-ED75-4b0e-BF4B-E35565DE9852}]  
@="CA ERwin Data Modeler Script Client API"  
"AppID"="{9527D0BA-ED75-4b0e-BF4B-E35565DE9852}"  
  
[HKEY_CLASSES_ROOT\Wow6432Node\AppID\{9527D0BA-ED75-4b0e-BF4B-E35565DE9852}]  
"DllSurrogate"=""  
  
[HKEY_CLASSES_ROOT\Wow6432Node\CLSID\{40FDB0E6-D772-455d-B1C8-83CE79445403}]  
@="CA ERwin Data Modeler Script Client API Property Bag"  
"AppID"="{40FDB0E6-D772-455d-B1C8-83CE79445403}"  
  
[HKEY_CLASSES_ROOT\Wow6432Node\AppID\{40FDB0E6-D772-455d-B1C8-83CE79445403}]  
"DllSurrogate"=""  
  
[HKEY_CLASSES_ROOT\Wow6432Node\CLSID\{6774E2C3-06E9-4943-A8D4-E3007AB1F42E}]  
@="CA ERwin Data Modeler Script Client API"  
"AppID"="{6774E2C3-06E9-4943-A8D4-E3007AB1F42E}"  
  
[HKEY_CLASSES_ROOT\Wow6432Node\AppID\{6774E2C3-06E9-4943-A8D4-E3007AB1F42E}]  
"DllSurrogate"=""  
  
[HKEY_CLASSES_ROOT\Wow6432Node\CLSID\{7D7B1602-9832-4ac6-A224-F0092FAF0D7E}]  
@="CA ERwin Data Modeler Script Client API Property Bag"  
"APPID"="{7D7B1602-9832-4ac6-A224-F0092FAF0D7E}"
```

```
[HKEY_CLASSES_ROOT\Wow6432Node\AppID\{7D7B1602-9832-4ac6-A224-F0092FAF0D7E}]  
"DllSurrogate"=""  
[HKEY_LOCAL_MACHINE\SOFTWARE\Classes\AppID\{9527D0BA-ED75-4b0e-BF4B-E35565DE9852}]  
[HKEY_LOCAL_MACHINE\SOFTWARE\Classes\AppID\{40FDB0E6-D772-455d-B1C8-83CE79445403}]  
[HKEY_LOCAL_MACHINE\SOFTWARE\Classes\AppID\{6774E2C3-06E9-4943-A8D4-E3007AB1F42E}]  
[HKEY_LOCAL_MACHINE\SOFTWARE\Classes\AppID\{7D7B1602-9832-4ac6-A224-F0092FAF0D7E}]
```

Internet Explorer Redirects to a Different Link

Symptom:

Suppose that I install CA ERwin Mart Server on a fresh machine. If I enable the SSL option and I invoke CA ERwin Mart Administrator, Internet Explorer redirects the page to `res://ieframe.dll//`.

Solution:

Internet Explorer versions 8 through 10 have a security enhancement that blocks the following types of sites:

- Sites that have self-signed certificates
- Sites that have self-signed certificates where the certificate does not match the URL

Follow any of these steps:

- Install the certificate in the Trusted Root Certification Authorities store.
- Add the site to trusted sites.
- Set the Internet Explorer Security level to Medium Low.

Chapter 3: Install and Configure a SQL Server Mart

This section describes how you can install and configure a Mart on a SQL Server database.

This section contains the following topics:

[How to Install and Configure a SQL Server Mart](#) (see page 54)

[How to Upgrade a Mart from r9.0.0 to r9.5.0](#) (see page 70)

[Change the Mart Database Server](#) (see page 77)

[Troubleshooting](#) (see page 77)

How to Install and Configure a SQL Server Mart

In the previous versions, CA ERwin Data Modeler connected to the Mart server directly. Now, CA ERwin Data Modeler connects to the Mart server through a web server.

The Mart comprises the following components:

Database

Stores the user data for the Workgroup Edition. You can use a Microsoft SQL Server 2005, 2008, or 2012 database for the Mart database. You must use a new database and not an existing database that was created for an older version of the data modeling tool.

Applications

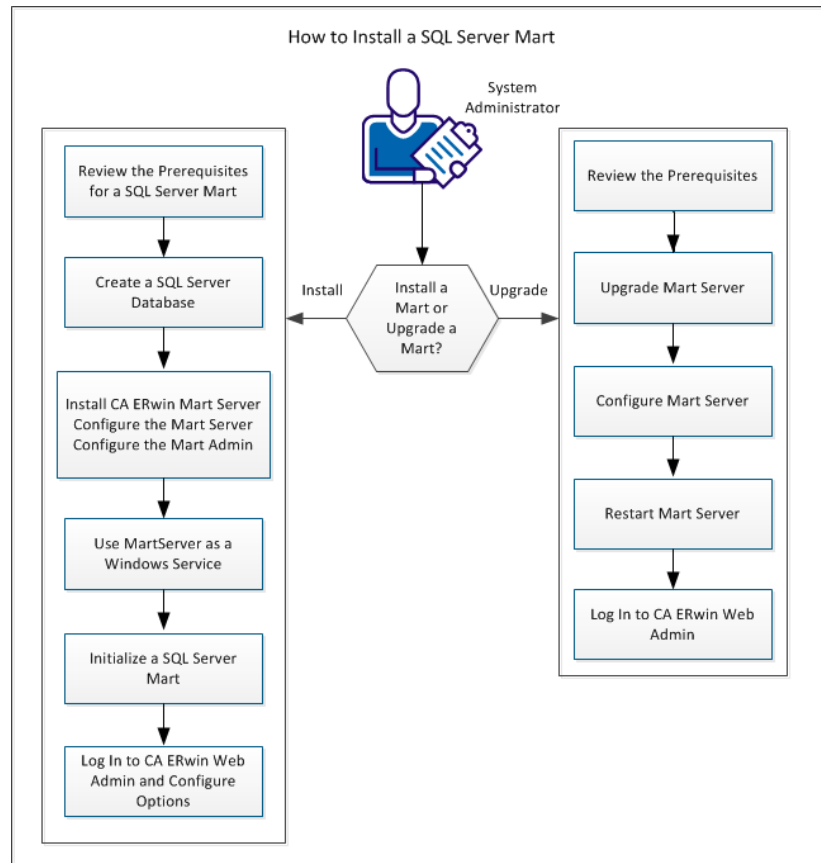
Includes a web-based component named CA ERwin Mart Administrator that helps you manage the Mart through a web console.

Web server

Hosts CA ERwin Mart Administrator. You can use a web server of your choice. If you have not installed a web server, use the ERwin Mart Server option and install Tomcat.

If you are using the Workgroup Edition, you must install and configure CA ERwin Mart Administrator.

The following diagram illustrates how to install and configure a Mart:



Complete the following steps in the same order to install and configure the Mart:

1. [Review the prerequisites for a SQL Server Mart](#) (see page 58).
2. [Create a SQL Server Database](#) (see page 61).
3. [Install CA ERwin Mart Server.](#) (see page 28)
4. Use MartServer as a Windows Service.
5. [Initialize a SQL Server Mart.](#) (see page 68)
6. Log in to CA ERwin Mart Administrator and configure settings.

Mart Architecture

In the previous versions, CA ERwin DM connected to the Mart database through the database client software. Now, the application connects to the Mart database through a web server. The database client software is no longer required. The web server includes a web-based administration console—CA ERwin Mart Administrator. If you are using the Workgroup Edition, you must install and configure CA ERwin Mart Administrator.

Database

Stores the user data for the Workgroup Edition. You can use a Microsoft SQL Server 2000, 2005, 2008, or 2012 database for the Mart database. You must use a new database and not an existing database that was created for an older version of the data modeling tool.

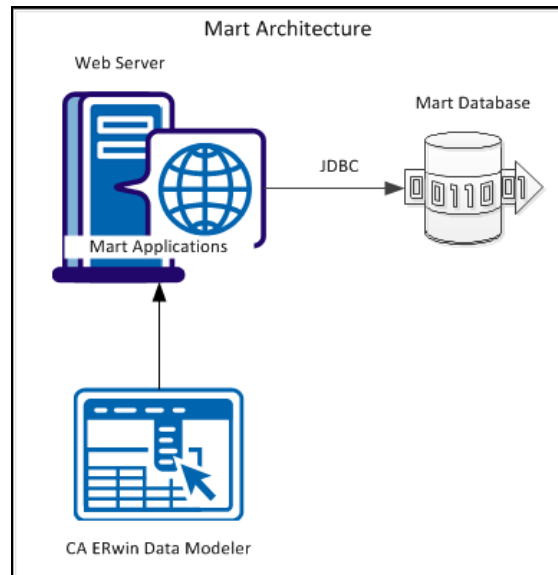
Applications

Includes a web-based component named CA ERwin Mart Administrator that helps you manage the Mart through a web console.

Web server

Hosts CA ERwin Mart Administrator. You can use a web server of your choice. If you have not installed a web server, use the ERwin Mart Server option and install Tomcat.

The following diagram shows the new architecture:



The new architecture has the following benefits:

- **Separate logical and physical users:** In the previous versions, Mart (or Model Manager) users required database level privileges to access the Mart functionality. The Mart database administrators added or deleted users in the Mart database. This approach is changed now. The logical users are separated from physical users, so Mart Administrators can create the Mart users without creating the corresponding database users.
- **Authentication through Active Directory services:** Earlier, if you wanted to provide access to a user group, you added each user individually. Now, because of the new architecture, you can use the Active Directory services and can provide access to the group. Anyone who is part of the group gets access.
- **Mart administration outside CA ERwin Data Modeler:** In the previous versions, Mart Administrators used CA ERwin Data Modeler for administrative activities such as managing permissions. This required non-modelers to know how to use CA ERwin Data Modeler. In the new architecture, the administration component is built on a separate layer on top of CA ERwin Data Modeler and is hosted on a web server. Mart Administrators can access CA ERwin Web Admin from any computer and can perform administrative activities through a web console.

Install a Mart or Upgrade a Mart?

Use the following guidelines to determine if you must install a Mart or upgrade a Mart:

- If you are new to CA ERwin Data Modeler and have purchased r9.5.0 Workgroup Edition, then install the r9.5.0 Mart. Use the *How to Install and Configure a Mart* procedure that is appropriate for your Mart database.
- If you have a r9.0.0 Mart, then upgrade the Mart from r9.0.0 to r9.5.0. Use the *How to Upgrade a Mart from r9.0.0 to r9.5.0* procedure to upgrade your Mart to r9.5.0. The models that are created in r9.0.0 are upgraded when a user connects to the r9.5.0 Mart and opens the models.
- If you have an existing Mart and the version is r7.3 through r8.2.7, install the r9.5.0 Mart. Use the *How to Install and Configure a Mart* procedure that is appropriate for your Mart database. After installing the Mart, use the Upgrade Mart utility to upgrade the Mart models from r7.3 through r8.2.7 to r9.5.0.

Review the Prerequisites for a SQL Server Mart

Before you install the Mart components, help ensure that the minimum system requirements that are outlined in this topic are met.

You can use any of the following combinations to install CA ERwin Data Modeler, the Mart database, and the MartServer application:

- Install CA ERwin Data Modeler, the Mart database, and the MartServer application on the same computer.
- Install CA ERwin Data Modeler, the Mart database, and the MartServer application on different computers.
- Install CA ERwin Data Modeler and the Mart database on one computer, and install the MartServer application on a different computer.
- Install CA ERwin Data Modeler on one computer, and install the Mart database and the MartServer application on a different computer.

Help ensure that you always install the MartServer application on the Windows operating system.

[System requirements to install the MartServer application](#)

Hardware requirements (based on physical hardware performance, not a virtual environment):

- 2 GHZ or higher dual core processor
- 4 GB RAM (8 GB or more for large marts)
- 4 GB of disk space or more as required to support your specific mart

Operating system:

- Microsoft Windows Vista
- Microsoft Windows Server 2008 SP2
- Microsoft Windows Server 2003 SP2
- Microsoft Windows XP SP3
- Microsoft Windows 7
- Microsoft Windows 8
 - **Note:** CA ERwin Data Modeler has only been certified on the 32-bit versions of the Windows operating systems described in the preceding list. CA ERwin Data Modeler is a 32-bit application, so you may experience problems running this application on a 64-bit operating system.
- Microsoft .NET Framework 3.5 or higher
- All current Microsoft Windows critical updates are applied

Database:

- The Mart Server can use a standalone or can share an existing database server for a Microsoft SQL Server 2005, 2008, or 2012 database.
- The SQL Server 2005, 2008, and 2012 TRUSTWORTHY database property is no longer required for the mart. After you install this product, you can optionally reset this property to OFF.
- The dbo role for Microsoft SQL Server is necessary only during the installation or upgrade. You can strip the installer of the dbo role after the installation or upgrade is complete.
- (Optional) To use the Korean language, use the Korean_wansung_CI_AS character set. Select the character set while creating the Mart database (in the Collation field). For more information, see the SQL Server documentation.

CA ERwin Mart Administrator web client:

- Supported browsers:
 - Microsoft Internet Explorer 8[®] or newer
 - Mozilla Firefox[®] v.9.0 or newer
 - Google Chrome 14 or newer
 - Apple Safari 5 or newer
- Adobe Flash plug-in version 8 or newer for the respective browser

Other requirements

Help ensure that the following additional requirements are met:

- If you want to use Microsoft IIS as the web server, you have configured it.
- The DBMS is installed and prepared for creating the Mart Database.
- The Mart database is created. At least one user with administrator privileges is present.
- If you want to add Windows Group users as Mart users, you have the Active Directory Server details.

Note: You can add Windows Group users as normal Mart users, but not the Mart administrator. A Mart administrator must be a database-authenticated user.

Important disclaimer notice on all requirements

1. The requirements that are mentioned previously define the minimum requirements which permit the application to run with reasonable performance based on a small business use case scenario. The actual requirements for an enterprise-wide use case based on larger models and configurations require significantly greater resources to obtain acceptable performance.
 2. These requirements are based on actual physical hardware (no virtual environment) and the following assumptions:
 - Minimal to no network overhead (both the database and application servers are locally installed)
 - Vendor's default install of the current version of their software (with all current service or fix packs)
 - No other applications sharing the defined hardware configuration (for example, a “clean” machine)
- Any other hardware/software configurations are acceptable as long as they provide the same (or better) performance characteristics identified.

Create a SQL Server Database

The following tasks must be performed by the DBA and system administrator responsible for installing CA ERwin Data Modeler Workgroup Edition on a Microsoft SQL Server DBMS:

1. Use a graphical user interface (GUI) tool, ISQL (all versions), SQL Administrator, or Enterprise Manager to create the CA ERwin Data Modeler Workgroup Edition database. If a GUI tool is not available, you can use ISQL to type in the appropriate commands manually.

Your database should meet the following criteria:

- The initial size of the database file should be set to 60 MB.
- The initial size of the transaction log file should be set to 50 MB.
- Set the maximum file size to unrestricted file growth for both files (recommended, but not required).
- Increase the Set Auto grow file by 10 percent (recommended, but not required).

The new database is *owned* by the user who created it.

Set the Truncate Log on Checkpoint option and have the server generate checkpoints frequently. By selecting this option, the log is emptied periodically and should not fill up and cause rollbacks.

Note: For best performance ensure that separate devices are used to store the data and the transaction log.

2. Verify tempdb size.

Significant temporary space is required for installation and use. The temporary segments need at least 16 MB of available space. You should also increase available space as the number of concurrent users increase.

Microsoft SQL Server 2005 Permissions

For a SQL Server 2005 Mart, you must have the *bulkadmin* permission designated. The ability to do bulk inserts (which the public permission permitted previously) is no longer part of the public permission. As the administrator, you explicitly define this permission. Assign the bulkadmin permission to the physical user that connects to the database. If you do not define the permission, when you create a mart using a SQL Server 2005 database, and save it, an error appears.

Specify Use of Foreign Characters With Microsoft SQL Server 2005

For Microsoft SQL Server 2005, 2008, and 2012, modify your registry settings to have certain foreign language characters in your models recognized.

Follow these steps:

1. Click Run on the Start menu.
2. Enter *regedit*.

The Registry Editor opens.

3. Verify or add the following registry entry:

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\MSSQLServer\Client\DB-Lib]
```

```
"AutoAnsiToOem"="ON"
```

```
"UseIntlSettings"="ON"
```

4. Click File, Exit.

Your configuration is set to recognize foreign language characters in your models.

Install CA ERwin Mart Server

The Mart Server and Mart Admin war files are deployed on a Web server. You can either use an existing web server, or install the web server through the CA ERwin MartServer Installation Wizard. You must install CA ERwin Mart Server and configure it regardless of whether you use Mart Server as a Windows service.

Note: Ensure that you have reviewed the Install a Mart or Upgrade a Mart topic before proceeding.

Follow these steps:

1. Do one of the following tasks:
 - Insert the installation DVD and select Mart Server Installation.
 - Download the CAEDMMS95.exe file from the online CA Technologies [product page](#) and run it.

The CA ERwin MartServer Installation Wizard appears.

2. Go through the wizard steps to install CA ERwin Mart Server.

Depending on the options you select, CA ERwin Mart Server and/or Java Runtime Environment (JRE) and Tomcat are installed.

Note: If Java (any version) is already available in the computer and the environment variable JRE_HOME is set, the installer overwrites JRE_HOME with the new Java path. The JRE version that is shipped with the installer is 1.7. If a Tomcat web server is already installed in the computer and the environment variable CATALINA_HOME is set, the installer replaces CATALINA_HOME with the new path.

3. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Configure MartServer.

The CA ERwin Mart Configuration dialog appears.

Configure the CA ERwin Mart Server

1. Complete the following fields in the Mart Server tab:

Database Type

Specifies the database server type.

Port No.

Specifies the port number of the database server.

Server Name

Specifies the name of the database server where you have installed the Mart database. For example, suppose that you are using SQL Server 2008 as the Mart database. Enter the name of the computer where SQL Server 2008 is installed.

Instance Name

Specifies the name of the database instance.

Database Name

Specifies the name of the Mart database.

Note: If you are installing the Mart for the first time, use a new database. Do not use an existing database that was created for r7.3 through r8.2.7 Mart. If you are upgrading the Mart from r9.0.0 to the latest release, use the r9.0.0 Mart database.

User Name

Specifies the user name to connect to the Mart database. Enter the name of a user that is authenticated by the Mart database.

Note: A Windows authenticated user account cannot be used to initialize the Mart.

Password

Specifies the password to connect to the Mart database.

Note: The following fields--Domain Controller Name, Domain/User Name, and Password are required only if you are using the Active Directory authentication.

Domain Controller Name

Specifies the fully qualified name of the Active Directory Server (Domain Controller). Enter the name in the following format:

LDAP://server/distinguished-name

Example: ldap://mktgna:3268/dc=abc, dc=com

Here, *mktgna* is the server name. You can provide either the name of the server or the IP address. 3268 is the port number to which the server listens.

dc=abc, dc=com is the distinguished-name. The distinguished name is the full path of the object.

Note: If you do not know the Domain Controller Name, use the *Nltest* command or talk to your System Administrator.

Domain/User Name

Specifies the domain name and user name in the <domain name>/<user name> format.

Password

Specifies the password of the domain user.

Configure CA ERwin Mart Administrator

1. Enter the following information in the Mart Administrator tab:

Server Name

Specifies the name of the computer where the Web Server is present. For example, if you are using Tomcat, enter the name of the computer where Tomcat is installed.

Default: localhost

Port Number

Specifies the port number on which the Web Server is running.

Default: 18170

Application Name

Specifies the application name with which the Web Server is identified.

Default: MartServer

Transport Layer Security

Specifies if you want to connect to the Mart through a secured connection (SSL). Select this check box if you have implemented SSL.

Hosting Server

Specifies that you want to use the IIS web server to connect to the Mart. Select this check box only if you have configured IIS.

2. Click Configure.

The CA ERwin Mart Administrator and the Mart Server are configured.

More information:

[Configure IIS Web Server](#) (see page 119)

[Implement SSL for IIS](#) (see page 121)

Enable SSL for Tomcat

SSL enables you to access the Mart through a secured connection. You can enable SSL for Tomcat--the default web server, regardless of whether you are installing the Mart for the first time, or you are upgrading it from CA ERwin Data Modeler version 9.0.

Follow these steps:

1. If the Mart Server service is running, stop it. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Stop MartServer Service to stop the web server.
2. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Enable SSL for Tomcat Webserver.

SSL is enabled for Tomcat and a security certificate is created. You must install this security certificate on all the computers from where you want to access the Mart.

3. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Configure MartServer.

The CA ERwin Mart Configuration dialog appears.

4. Go to the Mart Administrator tab and select the Transport Layer Security check box.
5. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Start Mart Server Service.
6. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, CA ERwin Mart Administrator.

The CA ERwin Mart Administrator home page appears and displays HTTPS in the address bar. If a certificate error appears, click Proceed Anyway to begin the session.

Important! If you want to connect to an SSL enabled Mart through API or the Mart Upgrade utility, you must first install the security certificate on the corresponding computer. Install the certificate through the data modeling tool. If you do not install the security certificate, the Mart Upgrade utility and the API will not be able to connect to the SSL enabled Mart.

Disable SSL and Access the Mart Through a Normal Connection

You can disable SSL at any time and access the Mart through a normal connection.

Follow these steps:

1. If the Mart Server Service is running, stop it. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Stop Mart Server Service.
2. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Disable SSL.
3. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Configure MartServer.

The CA ERwin Mart Configuration dialog appears.

4. Go to the Mart Administrator tab and clear the Transport Layer Security check box.
5. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Start Mart Server Service.
6. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, CA ERwin Mart Administrator.

The CA ERwin Mart Administrator home page appears and displays HTTP in the address bar.

Use Mart Server as a Windows Service

The current version of the Mart provides two ways to start the web server that hosts Mart Server:

- Start the web server manually.
- Use a Windows service to start the web server.

For example, if you have used Tomcat as the web server to host Mart Server, you can start Tomcat in two ways:

- Start Tomcat through the startup.bat file or through a shortcut to this file.
- Use a Windows service to start Tomcat.

The benefits of using a Windows service to start a web server are as follows:

- Any user with administrative privileges on a computer can start the Windows service, whereas, only designated users can start a web server manually.
- A Windows service runs regardless of whether a user has logged in. A manually-started web server shuts down when the user who started it logs out.

Follow these steps:

1. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Create MartServer Service to create the MartServer Windows service.

Creating the service is a one-time task. After the service is created, you only have to start and stop the service.

2. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Start MartServer Service to start the web server.

Initialize a SQL Server Mart

When you access the Mart database through CA ERwin Mart Administrator for the first time, you must initialize the database.

Note: Before you proceed, verify that you have installed a DBMS, created the Mart database and run the initial queries. If the Mart is already initialized, the Login page appears.

Follow these steps:

1. If you are using MartServer as a Windows service, help ensure that the service is started. If not, from the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Start Mart Server to start the Mart Server.

A Windows command prompt window appears and indicates when the server starts.

2. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, CA ERwin Mart Administrator.

CA ERwin Mart Administrator opens in your default browser.

3. Complete the following fields:

Username

Defines the user name with which you want to access the Mart. Enter the name of a user that is authenticated by the Mart database.

Note: A Windows authenticated user cannot initialize the Mart.

Password

Defines the password for the user name.

Confirm Password

Confirms the password that you entered in the previous field.

Email Address

Defines the email address for the user account that you are creating.

4. Click Initialize.

The user name is added as an administrator of Mart, Mart is initialized, and the Login web page appears. Initializing is a one-time task. After Mart is initialized, the user who initialized must log in first. Later, any other user who wants to use CA ERwin Mart Administrator can log in.

Note: The user name that is entered here is an application level user and not a database user. Remember the password that you have entered here, because without the password you cannot log in to CA ERwin Mart Administrator for the first time.

Log In to CA ERwin Mart Administrator and Configure Settings

After the Mart is initialized, the user who initialized must log in first. When you log in to Mart for the first time, configure it per the requirements of your organization. You can configure the following settings:

- Default profile for the model creator
- Use default password
- Email notification

Follow these steps:

1. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, CA ERwin Mart Administrator.

The CA ERwin Mart Administrator home page appears. If you have implemented SSL, HTTPS appears in the address bar.

2. Use the credentials with which you initialized the Mart and log in.
3. Click Settings.
4. Complete the following fields:

Default profile for model creator

Specifies the profile that is assigned to a user on a model. This profile is assigned whenever a user creates a model and saves it to Mart for the first time. The user inherits the permissions of the default profile selected here on the model that is saved. For example, suppose that User1 is assigned with Modeler profile and the System Administrator selects Architect as the default profile for model creator. If User1 creates Model1 and saves it to Mart, for Model1, User1 inherits the permissions of Architect. Now, suppose that the System Administrator selects Viewer as the default profile for model creator, and suppose that User1 creates Model2 and saves it to Mart. For Model2, User1 inherits the permissions of Viewer.

Use Default Password

Specifies the default password that you want to use for new users and for resetting passwords, in the absence of an SMTP server for emails.

Note: Select this option only if you do not have an SMTP server that is configured for emails.

SMTP host name

Specifies the name of the SMTP host. Enter the name in the mail.domain.com format. Notification emails are sent from this server.

Port number

Specifies the port number of the SMTP server. The default port number is 25. If your company is using an alternate port number for the mail server, specify that port number.

Authenticate

Specifies whether transactions with the SMTP server are authenticated. Select the check box to authenticate.

User name

Specifies the user name to authenticate the SMTP server. Select the Authenticate check box to enable authentication.

Password

Specifies the password to authenticate the SMTP server. Select the Authenticate check box to enable authentication.

Administrator email

Specifies the email ID of the Mart administrator. Notifications to Mart users are sent from this ID.

No-reply email from

Specifies the email ID from which administrative emails such as the password reset email are sent.

5. Click Save.

Mart options are configured.

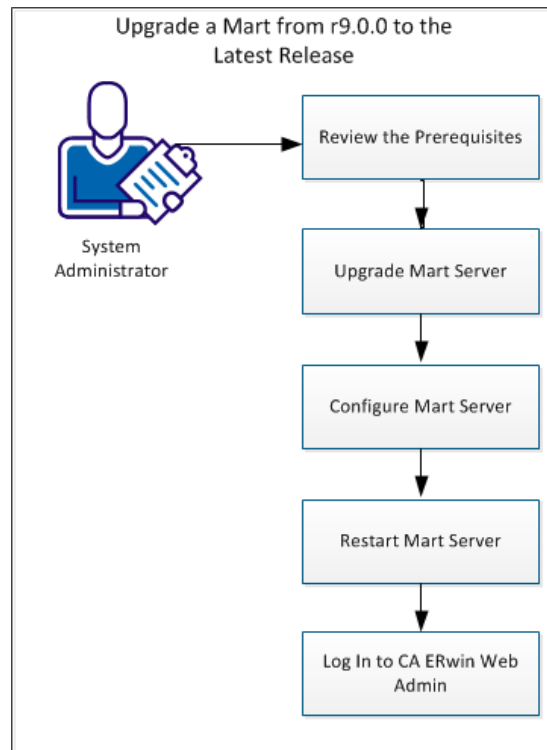
You have installed and configured CA ERwin DM Mart.

How to Upgrade a Mart from r9.0.0 to r9.5.0

If you are using CA ERwin Data Modeler version 9.0.0 Mart and you want to upgrade it to the latest release, upgrade the Mart Server and the Mart database. The Mart server program is upgraded, so you must implement the upgraded software.

Important! The current Mart is designed to work with only the current version of CA ERwin Data Modeler. If you try to connect the current Mart with CA ERwin Data Modeler r9.0.0, it may corrupt the Mart and cause unexpected behavior.

The following diagram illustrates how System Administrators can upgrade a Mart from r9.0.0 to the latest release:



Complete the following tasks to upgrade an existing r9.0.0 Mart to the latest release:

1. [Review the prerequisites.](#) (see page 37)
2. [Upgrade the Mart Server](#) (see page 38).
3. [Configure the Mart Server](#) (see page 38).
4. [Restart the Mart Server service.](#) (see page 41)
5. [Log In to CA ERwin Web Admin](#) (see page 42).

Review the Prerequisites

Review the following prerequisites before you start the upgrade process:

If the Mart database is an Oracle database, the default tablespaces that were used for initializing the r9.0.0 Mart are available for the latest release.

Upgrade the Mart Server

If you are upgrading a Mart from r9.0.0 to the latest release, upgrade the Mart Server.

Note: See the Install a Mart or Upgrade a Mart topic before proceeding.

Follow these steps:

1. If you are running MartServer as a Windows service, stop the service.
Note: If you upgrade the Mart Server without stopping the service, Mart Server may not start after you complete the upgrade process.
2. Download and run the CAEDMMS95.exe file from the CA Support site.
The CA ERwin Mart Server r9.5.0 Install Shield Wizard dialog appears.
3. Follow the wizard.
The Mart Server is upgraded.
4. Restart your computer.

Configure the Mart Server

To connect to the latest Mart, you must configure the Mart Server. Use the same database that you have used for the r9.0.0 Mart.

Note: See the Upgrade Considerations topic before proceeding.

Follow these steps:

1. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Configure MartServer.

The CA ERwin Mart Configuration dialog appears.

Configure the CA ERwin Mart Server

1. Complete the following fields in the Mart Server tab:

Database Type

Specifies the database server type.

Port No.

Specifies the port number of the database server.

Server Name

Specifies the name of the database server where you have installed the Mart database. For example, suppose that you are using SQL Server 2008 as the Mart database. Enter the name of the computer where SQL Server 2008 is installed.

Instance Name

Specifies the name of the database instance.

Database Name

Specifies the name of the Mart database.

Note: If you are installing the Mart for the first time, use a new database. Do not use an existing database that was created for r7.3 through r8.2.7 Mart. If you are upgrading the Mart from r9.0.0 to the latest release, use the r9.0.0 Mart database.

User Name

Specifies the user name to connect to the Mart database. Enter the name of a user that is authenticated by the Mart database.

Note: A Windows authenticated user account cannot be used to initialize the Mart.

Password

Specifies the password to connect to the Mart database.

Note: The following fields--Domain Controller Name, Domain/User Name, and Password are required only if you are using the Active Directory authentication.

Domain Controller Name

Specifies the fully qualified name of the Active Directory Server (Domain Controller). Enter the name in the following format:

LDAP://server/distinguished-name

Example: ldap://mktgna:3268/dc=abc, dc=com

Here, *mktgna* is the server name. You can provide either the name of the server or the IP address. 3268 is the port number to which the server listens.

dc=abc, dc=com is the distinguished-name. The distinguished name is the full path of the object.

Note: If you do not know the Domain Controller Name, use the *Nltest* command or talk to your System Administrator.

Domain/User Name

Specifies the domain name and user name in the <domain name>/<user name> format.

Password

Specifies the password of the domain user.

Configure CA ERwin Mart Administrator

1. Enter the following information in the Mart Administrator tab:

Server Name

Specifies the name of the computer where the Web Server is present. For example, if you are using Tomcat, enter the name of the computer where Tomcat is installed.

Default: localhost

Port Number

Specifies the port number on which the Web Server is running.

Default: 18170

Application Name

Specifies the application name with which the Web Server is identified.

Default: MartServer

Transport Layer Security

Specifies if you want to connect to the Mart through a secured connection (SSL). Select this check box if you have implemented SSL.

Hosting Server

Specifies that you want to use the IIS web server to connect to the Mart. Select this check box only if you have configured IIS.

2. Click Configure.

The CA ERwin Mart Administrator and the Mart Server are configured.

Restart the Mart Server Service

When you modify the details of the Mart Server and Mart Administration programs, restart the Mart Server service.

Follow these steps:

1. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Stop MartServer Service to stop the Mart Server service.
2. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Start MartServer Service to start the Mart Server service.

Log In to CA ERwin Mart Administrator

Log in to CA ERwin Mart Administrator to verify if you have successfully upgraded the Mart Server from r9.0.0 to the latest release.

Follow these steps:

1. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, CA ERwin Mart Administrator.

The CA ERwin Mart Administrator log in page appears. If you have implemented SSL, HTTPS appears in the address bar.

2. Use the credentials with which you initialized the Mart and log in.

The CA ERwin Mart Administrator home page appears.

The models that are created in r9.0.0 are upgraded when a user connects to the latest release Mart and opens the models.

Change the Mart Database Server

Sometimes, you may change the server on which the Mart database is installed, or you may restore the Mart database with a new name. When there is a change the server name or database name, reconfigure the MartServer.

Follow these steps:

1. Back up your Mart database.
2. Restore the database on the designated server.
3. If you use the same computer for Mart Server and restore the database in a different name, include the new database name in the CA ERwin Mart Configuration dialog.

From the Windows Start menu, open the CA ERwin Mart Configuration dialog. In the Mart Server tab, Database Name field, enter the new name with which the database is restored. Enter the current user name and password to access the database. If wrong information is provided here, you may be able to install the Mart, but you cannot log in and cannot use it.

4. If you use a different computer for Mart Server and restore the database in the same name, install the Mart Server on the new computer.

Use the Install CA ERwin Mart Server procedure and install the Mart Server. In the Mart Server tab, Server Name field, enter the name of the new server where the database is restored. Enter the current user name and password to access the database. If wrong information is provided here, you may be able to install the Mart, but you cannot log in and cannot use it.

5. Stop the MartServer service and start it again.
6. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, CA ERwin Mart Administrator.

Enter the credentials of the Mart administrator and log in.

Troubleshooting

This section explains the errors that you can encounter while installing and configuring Mart, and how you can troubleshoot them.

Note: The Mart Server log files are available in the following location:

Windows XP: {user.home}/Local Settings/Application Data/CA/ERwin Mart Server/logs/application.log

Windows 7: {user.home}/AppData/Local/CA/ERwin Mart Server/logs/application.log

Port out of range

Symptom:

Whenever I connect to the web server, I get the following error message:

```
java.lang.IllegalArgumentException: port out of range 80821.
```

Solution:

Type the correct port number in the Configure CA ERwin Mart Administrator's Server dialog and then restart your web server.

Call failed on the server

Symptom:

When I try to connect to the Mart server, I get the following error:

```
500 The call failed on the server; see server log for details
```

Solution:

The probable reasons for this error could be one of the following reasons:

- The server name is not correct.
- The application name is not correct. By default, the application name is MartServer and it is case-sensitive.

Type the correct server name and application name in the CA ERwin Mart Administrator's Server dialog and the Configure MartServer Details dialog. Restart the web server.

Application Internal Error

Symptom:

When I try to connect to the database, I get the following error:

Application Internal Error

Solution

You get this error when the MartServer application is unable to connect to the required database. The following reasons are probable for this error:

- The database details that are provided in the Configure MartServer Details dialog are incorrect.
- The username and the password for the database are incorrect.
- The database is not present.
- The port number for the database is incorrect.
- The network is down.

Ensure that you enter the correct details of your database in the Mart Server tab of the CA ERwin Mart Configuration dialog.

Mart already exists. Specify another database name

Symptom:

When I try to connect to the Mart, I get the following error message:

An earlier mart is already present in the database you are trying to initialize. This process can not be continued. Please specify another database name to continue.

Solution:

You get this error when you connect to an old Mart that you have used for CA ERwin DM Release 7.x, 8.x, or version 9.0 pre-Beta.

Create a database and provide its details in the Configure MartServer Details dialog.

Initialize page is not loading in Internet Explorer

Symptom:

When I type the URL to initialize my Mart in Internet Explorer, the Initialize Mart page is taking a long time to load.

Solution:

The Initialize Mart page does not load because the Active Scripting option in Internet Explorer is disabled.

To enable Active Scripting, follow these steps:

1. In Internet Explorer, click Tools, Internet Options.
2. In the Security tab, click the Custom Level button.
The Security Settings – Local Intranet Zone window opens.
3. From the list of options, locate Scripting, Active Scripting, and select Enable. Click OK.
4. Restart Internet Explorer and enter the URL to initialize Mart.
The Mart Initialize page opens.

The Tomcat server is not starting properly. The Configure button is disabled.

Symptom:

My administrator has given me the Administrator rights and when I start the Tomcat server, I get a series of errors. Also, I cannot click the Configure button in the configuration dialog because it is disabled.

Solution:

Right-click Start Server, and click Run as Administrator.

The Tomcat server starts without any error, and the configuration button is enabled.

A connection with the server could not be established

Symptom:

When I try to connect to the web server from CA ERwin Data Modeler, I get the following error message:

A connection with the server could not be established

Solution:

Verify that you have provided the correct port number and then reconnect to the web server.

The server name or address could not be resolved

Symptom:

When I try to connect to the web server from CA ERwin Data Modeler, I get the following error message:

The server name or address could not be resolved

Solution:

Verify that the server name where the web server is installed is correct and then reconnect to the server.

Note: If CA ERwin Data Modeler and the web server are installed on the same computer, you can give the server name as localhost. Suppose that CA ERwin Data Modeler and the web server are installed on different computers. The server name is the name of the computer where the web server is installed.

Invalid user ID or password

Symptom:

When I try to connect to the server, I get the following error message:

Invalid user ID or password. Please try again to login.

Solution:

Type the correct user name and password.

Note: The user must be an application level user and not a database user.

Error 12029

Symptom:

When I connect to the web server, I get the following error message:

Error 12029

Solution:

Restart the web server.

Unable to load the web page from my web browser

Symptom:

When I type the URL in Internet Explorer or Google Chrome to connect to the web server, I get the following error messages:

For Internet Explorer

Internet Explorer cannot display the webpage

For Google Chrome

Oops! Google Chrome could not connect to localhost:18170

Solution:

Restart the web server.

Test connection failed

Symptom:

When I use the Mart Upgrade utility on a 64-bit computer and upgrade a r7.3 through r8.2.7 Mart to r9.0.0 through r9.5.0 Mart, I get the following message:

Test connection failed

Solution:

CA ERwin DM is a 32-bit application. When you try to upgrade to r9.0.0 through r9.5.0 Mart on a 64-bit computer, the COM components do not work.

Follow these steps:

1. Paste the code included at the bottom of this topic to a Notepad file and name it as 64_Bit_Upgrade.reg. Note down the folder where you have created this file.

2. After installing CA ERwin DM version 9.0.0 through 9.5.0, right-click 64_Bit_Upgrade.reg and select Merge.
3. From the Windows Start menu, go to Run and type the following commands to re-register the EAL components:

```
regsvr32.exe "<Install Dir>\CA\ERwin Data Modeler r9.0\EAL.dll"
```

```
regsvr32.exe "<Install Dir>\CA\ERwin Data Modeler r9.0\Upgrade\R8_Binaries\EAL.dll".
```

4. Right-click 64_Bit_Upgrade.reg and select Merge again.

You can now upgrade to version 9.0.0 through 9.5.0 Mart on a 64-bit computer.

64_Bit_Upgrade.reg

Copy the following code and paste it to a new Notepad file:

```
Windows Registry Editor Version 5.00
```

```
[HKEY_CLASSES_ROOT\Wow6432Node\CLSID\{9527D0BA-ED75-4b0e-BF4B-E35565DE9852}]
```

```
@="CA ERwin Data Modeler Script Client API"
```

```
"AppID"="{9527D0BA-ED75-4b0e-BF4B-E35565DE9852}"
```

```
[HKEY_CLASSES_ROOT\Wow6432Node\AppID\{9527D0BA-ED75-4b0e-BF4B-E35565DE9852}]
```

```
"DllSurrogate"=""
```

```
[HKEY_CLASSES_ROOT\Wow6432Node\CLSID\{40FDB0E6-D772-455d-B1C8-83CE79445403}]
```

```
@="CA ERwin Data Modeler Script Client API Property Bag"
```

```
"AppID"="{40FDB0E6-D772-455d-B1C8-83CE79445403}"
```

```
[HKEY_CLASSES_ROOT\Wow6432Node\AppID\{40FDB0E6-D772-455d-B1C8-83CE79445403}]
```

```
"DllSurrogate"=""
```

```
[HKEY_CLASSES_ROOT\Wow6432Node\CLSID\{6774E2C3-06E9-4943-A8D4-E3007AB1F42E}]
```

```
@="CA ERwin Data Modeler Script Client API"
```

```
"AppID"="{6774E2C3-06E9-4943-A8D4-E3007AB1F42E}"
```

```
[HKEY_CLASSES_ROOT\Wow6432Node\AppID\{6774E2C3-06E9-4943-A8D4-E3007AB1F42E}]
```

```
"DllSurrogate"=""
```

```
[HKEY_CLASSES_ROOT\Wow6432Node\CLSID\{7D7B1602-9832-4ac6-A224-F0092FAF0D7E}]
```

```
@="CA ERwin Data Modeler Script Client API Property Bag"
```

```
"AppID"="{7D7B1602-9832-4ac6-A224-F0092FAF0D7E}"
```

```
[HKEY_CLASSES_ROOT\Wow6432Node\AppID\{7D7B1602-9832-4ac6-A224-F0092FAF0D7E}]  
  
"DllSurrogate"=""  
  
[HKEY_LOCAL_MACHINE\SOFTWARE\Classes\AppID\{9527D0BA-ED75-4b0e-BF4B-E35565DE9852}]  
]  
  
[HKEY_LOCAL_MACHINE\SOFTWARE\Classes\AppID\{40FDB0E6-D772-455d-B1C8-83CE79445403}]  
]  
  
[HKEY_LOCAL_MACHINE\SOFTWARE\Classes\AppID\{6774E2C3-06E9-4943-A8D4-E3007AB1F42E}]  
]  
  
[HKEY_LOCAL_MACHINE\SOFTWARE\Classes\AppID\{7D7B1602-9832-4ac6-A224-F0092FAF0D7E}]  
]
```

Internet Explorer Redirects to a Different Link

Symptom:

Suppose that I install CA ERwin Mart Server on a fresh machine. If I enable the SSL option and I invoke CA ERwin Mart Administrator, Internet Explorer redirects the page to res://ieframe.dll//.

Solution:

Internet Explorer versions 8 through 10 have a security enhancement that blocks the following types of sites:

- Sites that have self-signed certificates
- Sites that have self-signed certificates where the certificate does not match the URL

Follow any of these steps:

- Install the certificate in the Trusted Root Certification Authorities store.
- Add the site to trusted sites.
- Set the Internet Explorer Security level to Medium Low.

Chinese characters are replaced with question marks

Symptom:

I type Chinese characters in the Version Description dialog in CA ERwin Mart Administrator. If I open CA ERwin Data Modeler and go to the Catalog Manager window, I see that the Chinese characters are replaced with ????.

Solution:**Follow these steps:**

1. Select Chinese for the Format, Location, and Locale fields in the computer where you have installed CA ERwin Data Modeler, Mart server, and Mart database. (You can access these settings through the Control Panel.)
2. Open the Database Properties dialog for the Mart database and verify the value for the Collation field.
3. If the value is other than SQL_Latin1_General_CP1_CI_AS, create a database and assign this value for Collation. Initialize the Mart again.

Chapter 4: Install and Configure a Sybase Mart

This section describes how you can install and configure a Mart on a Sybase database.

This section contains the following topics:

[How to Install and Configure a Sybase Mart](#) (see page 87)

[How to Upgrade a Mart from r9.0.0 to r9.5.0](#) (see page 103)

[Change the Mart Database Server](#) (see page 110)

[Troubleshooting](#) (see page 110)

How to Install and Configure a Sybase Mart

In the previous versions, CA ERwin DM connected to the Mart database through the database client software. Now, the application connects to the Mart database through a web server. The database client software is no longer required.

The Mart comprises the following components:

Database

Stores the user data for the Workgroup Edition. You can use a Sybase Adaptive Server Enterprise 15.0 through 15.7 database for the Mart database. You must use a new database and not an existing database that was created for an older version of the data modeling tool.

Applications

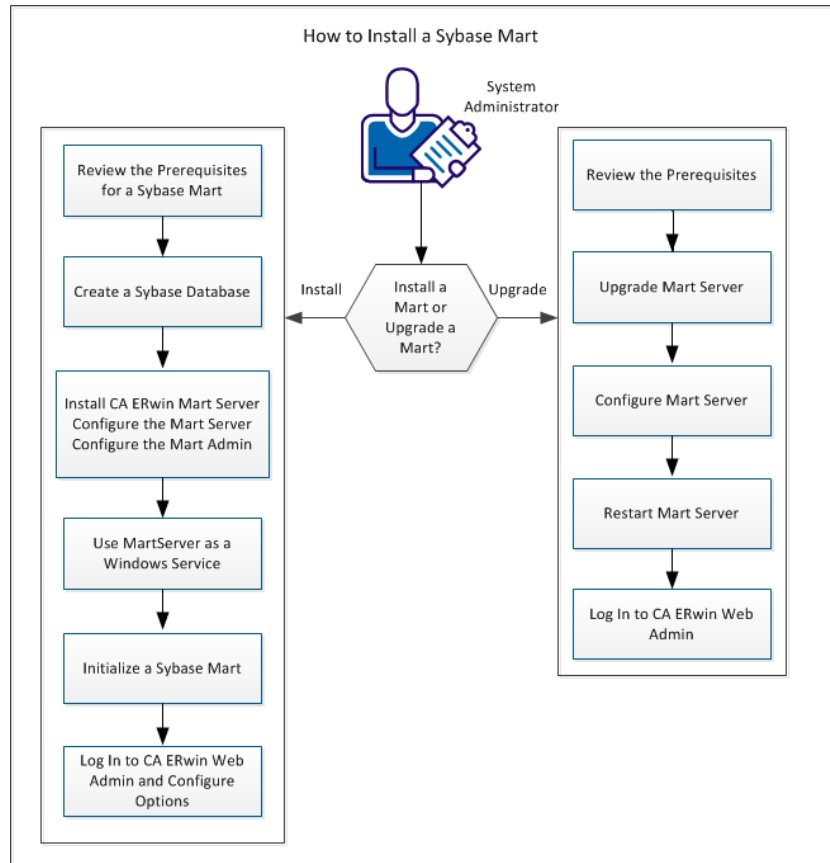
Includes a web-based component named CA ERwin Mart Administrator that helps you manage the Mart through a web console.

Web server

Hosts CA ERwin Mart Administrator. You can use a web server of your choice. If you have not installed a web server, use the ERwin Mart Server option and install Tomcat.

If you are using the Workgroup Edition, you must install and configure CA ERwin Mart Administrator.

The following diagram illustrates how to install and configure Mart:



Complete the following steps to install and configure a Mart:

1. [Review the prerequisites for a Sybase Mart](#) (see page 91).
2. [Create a Sybase Database](#) (see page 94).
3. [Install CA ERwin Mart Server](#) (see page 28).
4. [Use MartServer as a Windows Service.](#) (see page 32)
5. Initialize Mart.
6. [Log in to CA ERwin Mart Administrator and configure settings](#) (see page 35).

Complete the following steps to upgrade a Mart from r9.0 to the latest release:

1. [Review the Prerequisites](#) (see page 37)
2. [Upgrade the Mart Server](#) (see page 38)
3. [Configure the Mart Server](#) (see page 38)
4. [Restart the Mart Server](#) (see page 41)
5. [Log In to CA ERwin Web Admin](#) (see page 42)

Mart Architecture

In the previous versions, CA ERwin DM connected to the Mart database through the database client software. Now, the application connects to the Mart database through a web server. The database client software is no longer required. The web server includes a web-based administration console—CA ERwin Mart Administrator. If you are using the Workgroup Edition, you must install and configure CA ERwin Mart Administrator.

The Mart comprises the following components:

Database

Stores the user data for the Workgroup Edition. You can use a Sybase Adaptive Server 15.0 through 15.7 database for the Mart database. You must use a new database and not an existing database that was created for an older version of the data modeling tool.

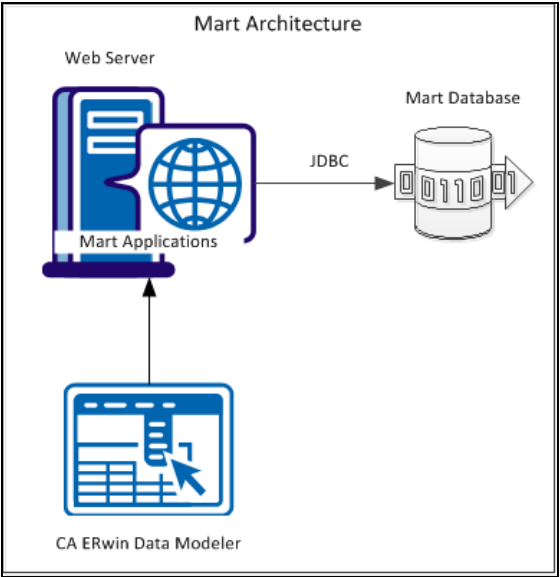
Applications

Includes a web-based component named CA ERwin Mart Administrator that helps you manage the Mart through a web console.

Web server

Hosts CA ERwin Mart Administrator. You can use a web server of your choice. If you have not installed a web server, use the ERwin Mart Server option and install Tomcat.

The following diagram shows the new architecture:



The new architecture has the following benefits:

- **Separate logical and physical users:** In the previous versions, Mart (or Model Manager) users required database level privileges to access the Mart functionality. The Mart database administrators added or deleted users in the Mart database. This approach is changed now. The logical users are separated from physical users, so Mart Administrators can create the Mart users without creating the corresponding database users.
- **Authentication through Active Directory services:** Earlier, if you wanted to provide access to a user group, you added each user individually. Now, because of the new architecture, you can use the Active Directory services and can provide access to the group. Anyone who is part of the group gets access.
- **Mart administration outside CA ERwin Data Modeler:** In the previous versions, Mart Administrators used CA ERwin Data Modeler for administrative activities such as managing permissions. This required non-modelers to know how to use CA ERwin Data Modeler. In the new architecture, the administration component is built on a separate layer on top of CA ERwin Data Modeler and is hosted on a web server. Mart Administrators can access CA ERwin Web Admin from any computer and can perform administrative activities through a web console.

Install a Mart or Upgrade a Mart?

Use the following guidelines to determine if you must install a Mart or upgrade a Mart:

- If you are new to CA ERwin Data Modeler and have purchased r9.5.0 Workgroup Edition, then install the r9.5.0 Mart. Use the *How to Install and Configure a Mart* procedure that is appropriate for your Mart database.
- If you have a r9.0.0 Mart, then upgrade the Mart from r9.0.0 to r9.5.0. Use the *How to Upgrade a Mart from r9.0.0 to r9.5.0* procedure to upgrade your Mart to r9.5.0. The models that are created in r9.0.0 are upgraded when a user connects to the r9.5.0 Mart and opens the models.
- If you have an existing Mart and the version is r7.3 through r8.2.7, install the r9.5.0 Mart. Use the *How to Install and Configure a Mart* procedure that is appropriate for your Mart database. After installing the Mart, use the Upgrade Mart utility to upgrade the Mart models from r7.3 through r8.2.7 to r9.5.0.

Review the Prerequisites for a Sybase Mart

Before you install the Mart components, help ensure that the minimum system requirements that are outlined in this topic are met.

You can use any of the following combinations to install CA ERwin Data Modeler, the Mart database, and the MartServer application:

- Install CA ERwin Data Modeler, the Mart database, and the MartServer application on the same computer.
- Install CA ERwin Data Modeler, the Mart database, and the MartServer application on different computers.
- Install CA ERwin Data Modeler and the Mart database on one computer, and install the MartServer application on a different computer.
- Install CA ERwin Data Modeler on one computer, and install the Mart database and the MartServer application on a different computer.

Help ensure that you always install the MartServer application on the Windows operating system.

[System requirements to install the MartServer application](#)

Hardware requirements (based on physical hardware performance, not a virtual environment):

- 2 GHZ or higher dual core processor
- 4 GB RAM (8 GB or more for large marts)
- 4 GB of disk space or more as required to support your specific mart

Operating system:

- Microsoft Windows Vista
- Microsoft Windows Server 2008 SP2
- Microsoft Windows Server 2003 SP2
- Microsoft Windows XP SP3
- Microsoft Windows 7
- Microsoft Windows 8
 - **Note:** CA ERwin Data Modeler has only been certified on the 32-bit versions of the Windows operating systems described in the preceding list. CA ERwin Data Modeler is a 32-bit application, so you may experience problems running this application on a 64-bit operating system.
- Microsoft .NET Framework 3.5 or higher
- All current Microsoft Windows critical updates are applied

Database:

- The Mart Server can use a standalone or can share an existing database server for a Sybase Adaptive Server Enterprise 15.0 through 15.7 database.
- The dbo role is necessary only during the installation or upgrade. You can revoke the dbo role for the installer after the installation or upgrade is complete.

(Optional) To use the Korean language, configure the server manually to use Cp949, Utf8, or eucksc character set. These character sets apply to a 64-bit Windows 7 computer running the Korean language pack. When you configure the server, help ensure that you perform the following tasks:

1. Add the language and set it as default.
2. Select the character set and set it as default.

Note: PC (MS) Korean stands for *cp949* character set. Extended Unix Code for KSC-5601 stands for *eucksc* character set. Unicode 3.1 UTF-8 Character Set stands for *utf8* character set.

3. Select the default sort order.

For more information, see the Sybase documentation. Create the Mart database after you perform the tasks that are mentioned earlier.

CA ERwin Mart Administrator web client:

- Supported browsers:
 - Microsoft Internet Explorer 8[®] or newer
 - Mozilla Firefox[®] v.9.0 or newer
 - Google Chrome 14 or newer

- Apple Safari 5 or newer
- Adobe Flash plug-in version 8 or newer for the respective browser

Other requirements

Help ensure that the following additional requirements are met:

- If you want to use Microsoft IIS as the web server, you have configured it.
- The DBMS is installed and prepared for creating the Mart Database.
- The Mart database is created. At least one user with administrator privileges is present.
- If you want to add Windows Group users as Mart users, you have the Active Directory Server details.

Note: You can add Windows Group users as normal Mart users, but not the Mart administrator. A Mart administrator must be a database-authenticated user.

Important disclaimer notice on all requirements

1. The requirements that are mentioned previously define the minimum requirements which permit the application to run with reasonable performance based on a small business use case scenario. The actual requirements for an enterprise-wide use case based on larger models and configurations require significantly greater resources to obtain acceptable performance.
2. These requirements are based on actual physical hardware (no virtual environment) and the following assumptions:
 - Minimal to no network overhead (both the database and application servers are locally installed)
 - Vendor's default install of the current version of their software (with all current service or fix packs)
 - No other applications sharing the defined hardware configuration (for example, a “clean” machine)

Any other hardware/software configurations are acceptable as long as they provide the same (or better) performance characteristics identified.

Create a Sybase Database

The DBA and the system administrator responsible for installing the software on a Sybase database management system perform the following tasks:

1. Use a graphical user interface (GUI) tool, ISQL (all versions), SQL Administrator, Sybase Central Java, or Enterprise Manager to create the mart database. If a GUI tool is not available, use ISQL to type the appropriate commands manually.

Your database must meet the following criteria:

- The size of the data device you create determines the size of the database. The minimum database size is 32 MB so there has to be at least one device that is 32 MB. Create the data device on a different disk (and disk controller) than the transaction log.
- For optimum performance, verify that separate devices are used to store the data and the transaction log. For example, you can increase performance by creating a 50-MB data device and a 25-MB log device. A minimum of 40 MB of disk space (data and log) is required.

2. Verify the Stored Procedure Cache.

Set the Stored Procedure Cache size to at least 8 MB. Setting it higher improves performance, especially when many users are accessing the server concurrently. Setting it lower results in fatal errors and rollbacks when the Stored Procedure Cache size is exceeded.

Note: The installation creates more than 100 stored procedures. The client invokes these stored procedures to control changes to the data in the database.

3. Verify tempdb size.

Significant temporary space is required for installation and use. The temporary segments need at least 16 MB of available space. Increase the available space as the number of concurrent users increase.

4. Verify the memory allocated to the database server.

Allocate at least 32 MB of RAM to the database server. The amount of RAM allocated is ideally half of the available RAM on the server.

Transact-SQL Commands

If a graphical DBMS access tool is not available, you can use Transact-SQL commands through ISQL.

Example: Create a device using the Transact-SQL DISK INIT command through ISQL

```
DISK INIT NAME = 'mmdata',      /* The logical name. */
PHYSNAME = 'C:\SQL\DATA\mmdata.dat', /* The physical name. */
VDEVNO = 1<= virtual_device_number => 255
/* System dependent. */
SIZE = number_of_2K_blocks      /* 1024 here is 2MB!!! */
[, VSTART = virtual_address,    /* Optional */
CNTRLTYPE = controller_number] /* Optional */
```

Example: Create a database using the Transact-SQL CREATE DATABASE command through ISQL

```
CREATE DATABASE mmmaster
[ON {DEFAULT | database_device} [= size_in_megabytes] /* The device created in #1.
*/
[, database_device [= size_in_megabytes]]...] /* A database can span devices. */
[LOG ON database device [= size_in_megabytes>] /* Separate log device. */
[, database device [= size_in_megabytes]]...] /* A transaction log can span devices.
*/
```

Example: Add logins to the database with the *sp_addlogin* and *sp_adduser* commands using Transact-SQL through ISQL

```
sp_addlogin login_id [, passwd [, defdb [, deflanguage]]]
sp_adduser login_id [, username [, grpname]]
```

After you execute these commands, the DBA can alias an existing login as the Database Owner (dbo) or change the dbo to an existing login using *sp_changedbowner*. Use ISQL to execute the following:

```
sp_changedbowner login_id [,true]
```

Install CA ERwin Mart Server

The Mart Server and Mart Admin war files are deployed on a Web server. You can either use an existing web server, or install the web server through the CA ERwin MartServer Installation Wizard. You must install CA ERwin Mart Server and configure it regardless of whether you use Mart Server as a Windows service.

Note: Ensure that you have reviewed the Install a Mart or Upgrade a Mart topic before proceeding.

Follow these steps:

1. Do one of the following tasks:
 - Insert the installation DVD and select Mart Server Installation.
 - Download the CAEDMMS95.exe file from the online CA Technologies [product page](#) and run it.

The CA ERwin MartServer Installation Wizard appears.

2. Go through the wizard steps to install CA ERwin Mart Server.

Depending on the options you select, CA ERwin Mart Server and/or Java Runtime Environment (JRE) and Tomcat are installed.

Note: If Java (any version) is already available in the computer and the environment variable JRE_HOME is set, the installer overwrites JRE_HOME with the new Java path. The JRE version that is shipped with the installer is 1.7. If a Tomcat web server is already installed in the computer and the environment variable CATALINA_HOME is set, the installer replaces CATALINA_HOME with the new path.

3. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Configure MartServer.

The CA ERwin Mart Configuration dialog appears.

Configure the CA ERwin Mart Server

1. Complete the following fields in the Mart Server tab:

Database Type

Specifies the database server type.

Port No.

Specifies the port number of the database server.

Server Name

Specifies the name of the database server where you have installed the Mart database. For example, suppose that you are using SQL Server 2008 as the Mart database. Enter the name of the computer where SQL Server 2008 is installed.

Instance Name

Specifies the name of the database instance.

Database Name

Specifies the name of the Mart database.

Note: If you are installing the Mart for the first time, use a new database. Do not use an existing database that was created for r7.3 through r8.2.7 Mart. If you are upgrading the Mart from r9.0.0 to the latest release, use the r9.0.0 Mart database.

User Name

Specifies the user name to connect to the Mart database. Enter the name of a user that is authenticated by the Mart database.

Note: A Windows authenticated user account cannot be used to initialize the Mart.

Password

Specifies the password to connect to the Mart database.

Note: The following fields--Domain Controller Name, Domain/User Name, and Password are required only if you are using the Active Directory authentication.

Domain Controller Name

Specifies the fully qualified name of the Active Directory Server (Domain Controller). Enter the name in the following format:

LDAP://server/distinguished-name

Example: ldap://mktgna:3268/dc=abc, dc=com

Here, *mktgna* is the server name. You can provide either the name of the server or the IP address. 3268 is the port number to which the server listens.

dc=abc, dc=com is the distinguished-name. The distinguished name is the full path of the object.

Note: If you do not know the Domain Controller Name, use the *Nltest* command or talk to your System Administrator.

Domain/User Name

Specifies the domain name and user name in the <domain name>/<user name> format.

Password

Specifies the password of the domain user.

Configure CA ERwin Mart Administrator

1. Enter the following information in the Mart Administrator tab:

Server Name

Specifies the name of the computer where the Web Server is present. For example, if you are using Tomcat, enter the name of the computer where Tomcat is installed.

Default: localhost

Port Number

Specifies the port number on which the Web Server is running.

Default: 18170

Application Name

Specifies the application name with which the Web Server is identified.

Default: MartServer

Transport Layer Security

Specifies if you want to connect to the Mart through a secured connection (SSL). Select this check box if you have implemented SSL.

Hosting Server

Specifies that you want to use the IIS web server to connect to the Mart. Select this check box only if you have configured IIS.

2. Click Configure.

The CA ERwin Mart Administrator and the Mart Server are configured.

More information:

[Configure IIS Web Server](#) (see page 119)

[Implement SSL for IIS](#) (see page 121)

Enable SSL for Tomcat

SSL enables you to access the Mart through a secured connection. You can enable SSL for Tomcat--the default web server, regardless of whether you are installing the Mart for the first time, or you are upgrading it from CA ERwin Data Modeler version 9.0.

Follow these steps:

1. If the Mart Server service is running, stop it. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Stop MartServer Service to stop the web server.
2. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Enable SSL for Tomcat Webserver.

SSL is enabled for Tomcat and a security certificate is created. You must install this security certificate on all the computers from where you want to access the Mart.

3. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Configure MartServer.

The CA ERwin Mart Configuration dialog appears.

4. Go to the Mart Administrator tab and select the Transport Layer Security check box.
5. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Start Mart Server Service.
6. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, CA ERwin Mart Administrator.

The CA ERwin Mart Administrator home page appears and displays HTTPS in the address bar. If a certificate error appears, click Proceed Anyway to begin the session.

Important! If you want to connect to an SSL enabled Mart through API or the Mart Upgrade utility, you must first install the security certificate on the corresponding computer. Install the certificate through the data modeling tool. If you do not install the security certificate, the Mart Upgrade utility and the API will not be able to connect to the SSL enabled Mart.

Disable SSL and Access the Mart Through a Normal Connection

You can disable SSL at any time and access the Mart through a normal connection.

Follow these steps:

1. If the Mart Server Service is running, stop it. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Stop Mart Server Service.
2. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Disable SSL.
3. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Configure MartServer.

The CA ERwin Mart Configuration dialog appears.

4. Go to the Mart Administrator tab and clear the Transport Layer Security check box.
5. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Start Mart Server Service.
6. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, CA ERwin Mart Administrator.

The CA ERwin Mart Administrator home page appears and displays HTTP in the address bar.

Use Mart Server as a Windows Service

The current version of the Mart provides two ways to start the web server that hosts Mart Server:

- Start the web server manually.
- Use a Windows service to start the web server.

For example, if you have used Tomcat as the web server to host Mart Server, you can start Tomcat in two ways:

- Start Tomcat through the startup.bat file or through a shortcut to this file.
- Use a Windows service to start Tomcat.

The benefits of using a Windows service to start a web server are as follows:

- Any user with administrative privileges on a computer can start the Windows service, whereas, only designated users can start a web server manually.
- A Windows service runs regardless of whether a user has logged in. A manually-started web server shuts down when the user who started it logs out.

Follow these steps:

1. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Create MartServer Service to create the MartServer Windows service.
Creating the service is a one-time task. After the service is created, you only have to start and stop the service.
2. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Start MartServer Service to start the web server.

Initialize a Sybase Mart

When you access the Mart database through CA ERwin Mart Administrator for the first time, you must initialize the database.

Note: Before you proceed, verify that you have installed a DBMS, created the Mart database and run the initial queries. If the Mart is already initialized, the Login page appears.

Follow these steps:

1. If you are using MartServer as a Windows service, help ensure that the service is started. If not, from the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Start Mart Server to start the Mart Server.

A Windows command prompt window appears and indicates when the server starts.

2. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, CA ERwin Mart Administrator.

CA ERwin Mart Administrator opens in your default browser.

3. Complete the following fields:

Username

Defines the user name with which you want to access the Mart. Enter the name of a user that is authenticated by the Mart database.

Note: A Windows authenticated user cannot initialize the Mart.

Password

Defines the password for the user name.

Confirm Password

Confirms the password that you entered in the previous field.

Email Address

Defines the email address for the user account that you are creating.

4. Click Initialize.

The user name is added as an administrator of Mart, Mart is initialized, and the Login web page appears. Initializing is a one-time task. After Mart is initialized, the user who initialized must log in first. Later, any other user who wants to use CA ERwin Mart Administrator can log in.

Note: The user name that is entered here is an application level user and not a database user. Remember the password that you have entered here, because without the password you cannot log in to CA ERwin Mart Administrator for the first time.

Log In to CA ERwin Mart Administrator and Configure Settings

After the Mart is initialized, the user who initialized must log in first. When you log in to Mart for the first time, configure it per the requirements of your organization. You can configure the following settings:

- Default profile for the model creator
- Use default password
- Email notification

Follow these steps:

1. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, CA ERwin Mart Administrator.

The CA ERwin Mart Administrator home page appears. If you have implemented SSL, HTTPS appears in the address bar.

2. Use the credentials with which you initialized the Mart and log in.
3. Click Settings.
4. Complete the following fields:

Default profile for model creator

Specifies the profile that is assigned to a user on a model. This profile is assigned whenever a user creates a model and saves it to Mart for the first time. The user inherits the permissions of the default profile selected here on the model that is saved. For example, suppose that User1 is assigned with Modeler profile and the System Administrator selects Architect as the default profile for model creator. If User1 creates Model1 and saves it to Mart, for Model1, User1 inherits the permissions of Architect. Now, suppose that the System Administrator selects Viewer as the default profile for model creator, and suppose that User1 creates Model2 and saves it to Mart. For Model2, User1 inherits the permissions of Viewer.

Use Default Password

Specifies the default password that you want to use for new users and for resetting passwords, in the absence of an SMTP server for emails.

Note: Select this option only if you do not have an SMTP server that is configured for emails.

SMTP host name

Specifies the name of the SMTP host. Enter the name in the mail.domain.com format. Notification emails are sent from this server.

Port number

Specifies the port number of the SMTP server. The default port number is 25. If your company is using an alternate port number for the mail server, specify that port number.

Authenticate

Specifies whether transactions with the SMTP server are authenticated. Select the check box to authenticate.

User name

Specifies the user name to authenticate the SMTP server. Select the Authenticate check box to enable authentication.

Password

Specifies the password to authenticate the SMTP server. Select the Authenticate check box to enable authentication.

Administrator email

Specifies the email ID of the Mart administrator. Notifications to Mart users are sent from this ID.

No-reply email from

Specifies the email ID from which administrative emails such as the password reset email are sent.

5. Click Save.

Mart options are configured.

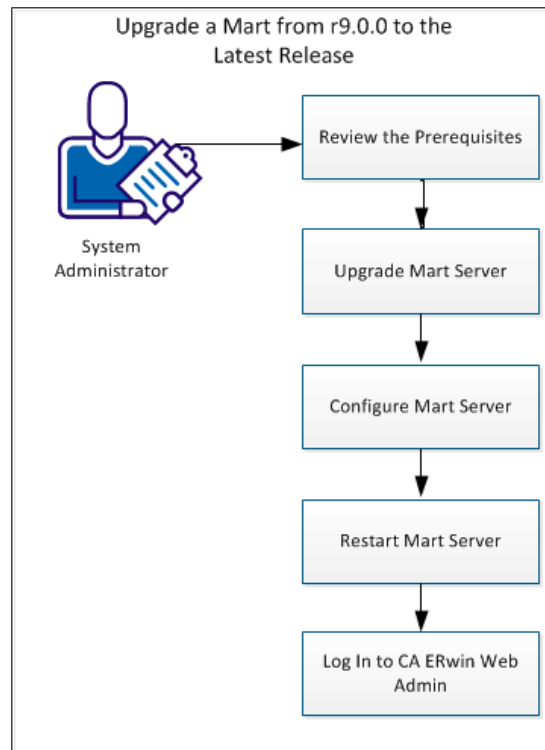
You have installed and configured CA ERwin DM Mart.

How to Upgrade a Mart from r9.0.0 to r9.5.0

If you are using CA ERwin Data Modeler version 9.0.0 Mart and you want to upgrade it to the latest release, upgrade the Mart Server and the Mart database. The Mart server program is upgraded, so you must implement the upgraded software.

Important! The current Mart is designed to work with only the current version of CA ERwin Data Modeler. If you try to connect the current Mart with CA ERwin Data Modeler r9.0.0, it may corrupt the Mart and cause unexpected behavior.

The following diagram illustrates how System Administrators can upgrade a Mart from r9.0.0 to the latest release:



Complete the following tasks to upgrade an existing r9.0.0 Mart to the latest release:

1. [Review the prerequisites.](#) (see page 37)
2. [Upgrade the Mart Server](#) (see page 38).
3. [Configure the Mart Server](#) (see page 38).
4. [Restart the Mart Server service.](#) (see page 41)
5. [Log In to CA ERwin Web Admin](#) (see page 42).

Review the Prerequisites

Review the following prerequisites before you start the upgrade process:

If the Mart database is an Oracle database, the default tablespaces that were used for initializing the r9.0.0 Mart are available for the latest release.

Upgrade the Mart Server

If you are upgrading a Mart from r9.0.0 to the latest release, upgrade the Mart Server.

Note: See the Install a Mart or Upgrade a Mart topic before proceeding.

Follow these steps:

1. If you are running MartServer as a Windows service, stop the service.
Note: If you upgrade the Mart Server without stopping the service, Mart Server may not start after you complete the upgrade process.
2. Download and run the CAEDMMS95.exe file from the CA Support site.
The CA ERwin Mart Server r9.5.0 Install Shield Wizard dialog appears.
3. Follow the wizard.
The Mart Server is upgraded.
4. Restart your computer.

Configure the Mart Server

To connect to the latest Mart, you must configure the Mart Server. Use the same database that you have used for the r9.0.0 Mart.

Note: See the Upgrade Considerations topic before proceeding.

Follow these steps:

1. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Configure MartServer.

The CA ERwin Mart Configuration dialog appears.

Configure the CA ERwin Mart Server

1. Complete the following fields in the Mart Server tab:

Database Type

Specifies the database server type.

Port No.

Specifies the port number of the database server.

Server Name

Specifies the name of the database server where you have installed the Mart database. For example, suppose that you are using SQL Server 2008 as the Mart database. Enter the name of the computer where SQL Server 2008 is installed.

Instance Name

Specifies the name of the database instance.

Database Name

Specifies the name of the Mart database.

Note: If you are installing the Mart for the first time, use a new database. Do not use an existing database that was created for r7.3 through r8.2.7 Mart. If you are upgrading the Mart from r9.0.0 to the latest release, use the r9.0.0 Mart database.

User Name

Specifies the user name to connect to the Mart database. Enter the name of a user that is authenticated by the Mart database.

Note: A Windows authenticated user account cannot be used to initialize the Mart.

Password

Specifies the password to connect to the Mart database.

Note: The following fields--Domain Controller Name, Domain/User Name, and Password are required only if you are using the Active Directory authentication.

Domain Controller Name

Specifies the fully qualified name of the Active Directory Server (Domain Controller). Enter the name in the following format:

LDAP://server/distinguished-name

Example: ldap://mktgna:3268/dc=abc, dc=com

Here, *mktgna* is the server name. You can provide either the name of the server or the IP address. 3268 is the port number to which the server listens.

dc=abc, dc=com is the distinguished-name. The distinguished name is the full path of the object.

Note: If you do not know the Domain Controller Name, use the *Nltest* command or talk to your System Administrator.

Domain/User Name

Specifies the domain name and user name in the <domain name>/<user name> format.

Password

Specifies the password of the domain user.

Configure CA ERwin Mart Administrator

1. Enter the following information in the Mart Administrator tab:

Server Name

Specifies the name of the computer where the Web Server is present. For example, if you are using Tomcat, enter the name of the computer where Tomcat is installed.

Default: localhost

Port Number

Specifies the port number on which the Web Server is running.

Default: 18170

Application Name

Specifies the application name with which the Web Server is identified.

Default: MartServer

Transport Layer Security

Specifies if you want to connect to the Mart through a secured connection (SSL). Select this check box if you have implemented SSL.

Hosting Server

Specifies that you want to use the IIS web server to connect to the Mart. Select this check box only if you have configured IIS.

2. Click Configure.

The CA ERwin Mart Administrator and the Mart Server are configured.

Restart the Mart Server Service

When you modify the details of the Mart Server and Mart Administration programs, restart the Mart Server service.

Follow these steps:

1. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Stop MartServer Service to stop the Mart Server service.
2. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, Start MartServer Service to start the Mart Server service.

Log In to CA ERwin Mart Administrator

Log in to CA ERwin Mart Administrator to verify if you have successfully upgraded the Mart Server from r9.0.0 to the latest release.

Follow these steps:

1. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, CA ERwin Mart Administrator.

The CA ERwin Mart Administrator log in page appears. If you have implemented SSL, HTTPS appears in the address bar.

2. Use the credentials with which you initialized the Mart and log in.

The CA ERwin Mart Administrator home page appears.

The models that are created in r9.0.0 are upgraded when a user connects to the latest release Mart and opens the models.

Change the Mart Database Server

Sometimes, you may change the server on which the Mart database is installed, or you may restore the Mart database with a new name. When there is a change the server name or database name, reconfigure the MartServer.

Follow these steps:

1. Back up your Mart database.
2. Restore the database on the designated server.
3. If you use the same computer for Mart Server and restore the database in a different name, include the new database name in the CA ERwin Mart Configuration dialog.

From the Windows Start menu, open the CA ERwin Mart Configuration dialog. In the Mart Server tab, Database Name field, enter the new name with which the database is restored. Enter the current user name and password to access the database. If wrong information is provided here, you may be able to install the Mart, but you cannot log in and cannot use it.

4. If you use a different computer for Mart Server and restore the database in the same name, install the Mart Server on the new computer.

Use the Install CA ERwin Mart Server procedure and install the Mart Server. In the Mart Server tab, Server Name field, enter the name of the new server where the database is restored. Enter the current user name and password to access the database. If wrong information is provided here, you may be able to install the Mart, but you cannot log in and cannot use it.

5. Stop the MartServer service and start it again.
6. From the Windows Start menu, click All Programs, CA, ERwin, ERwin Mart Server r9, CA ERwin Mart Administrator.

Enter the credentials of the Mart administrator and log in.

Troubleshooting

This section explains the errors that you can encounter while installing and configuring Mart, and how you can troubleshoot them.

Note: The Mart Server log files are available in the following location:

Windows XP: {user.home}/Local Settings/Application Data/CA/ERwin Mart Server/logs/application.log

Windows 7: {user.home}/AppData/Local/CA/ERwin Mart Server/logs/application.log

Port out of range

Symptom:

Whenever I connect to the web server, I get the following error message:

```
java.lang.IllegalArgumentException: port out of range 80821.
```

Solution:

Type the correct port number in the Configure CA ERwin Mart Administrator's Server dialog and then restart your web server.

Call failed on the server

Symptom:

When I try to connect to the Mart server, I get the following error:

```
500 The call failed on the server; see server log for details
```

Solution:

The probable reasons for this error could be one of the following reasons:

- The server name is not correct.
- The application name is not correct. By default, the application name is MartServer and it is case-sensitive.

Type the correct server name and application name in the CA ERwin Mart Administrator's Server dialog and the Configure MartServer Details dialog. Restart the web server.

Application Internal Error

Symptom:

When I try to connect to the database, I get the following error:

Application Internal Error

Solution

You get this error when the MartServer application is unable to connect to the required database. The following reasons are probable for this error:

- The database details that are provided in the Configure MartServer Details dialog are incorrect.
- The username and the password for the database are incorrect.
- The database is not present.
- The port number for the database is incorrect.
- The network is down.

Ensure that you enter the correct details of your database in the Mart Server tab of the CA ERwin Mart Configuration dialog.

ORA-12514 TNS listener does not currently know of service requested in connect descriptor

Symptom:

When I try to open the CA ERwin Mart Administrator page, I get the Application Internal Error. The Tomcat windows shows the following error message:

ORA-12514, TNS:listener does not currently know of service requested in connect descriptor

Solution:

Use a fully qualified instance name when starting the Mart Server.

Mart already exists. Specify another database name

Symptom:

When I try to connect to the Mart, I get the following error message:

An earlier mart is already present in the database you are trying to initialize. This process can not be continued. Please specify another database name to continue.

Solution:

You get this error when you connect to an old Mart that you have used for CA ERwin DM Release 7.x, 8.x, or version 9.0 pre-Beta.

Create a database and provide its details in the Configure MartServer Details dialog.

Initialize page is not loading in Internet Explorer

Symptom:

When I type the URL to initialize my Mart in Internet Explorer, the Initialize Mart page is taking a long time to load.

Solution:

The Initialize Mart page does not load because the Active Scripting option in Internet Explorer is disabled.

To enable Active Scripting, follow these steps:

1. In Internet Explorer, click Tools, Internet Options.
2. In the Security tab, click the Custom Level button.
The Security Settings – Local Intranet Zone window opens.
3. From the list of options, locate Scripting, Active Scripting, and select Enable. Click OK.
4. Restart Internet Explorer and enter the URL to initialize Mart.

The Mart Initialize page opens.

The Tomcat server is not starting properly. The Configure button is disabled.

Symptom:

My administrator has given me the Administrator rights and when I start the Tomcat server, I get a series of errors. Also, I cannot click the Configure button in the configuration dialog because it is disabled.

Solution:

Right-click Start Server, and click Run as Administrator.

The Tomcat server starts without any error, and the configuration button is enabled.

A connection with the server could not be established

Symptom:

When I try to connect to the web server from CA ERwin Data Modeler, I get the following error message:

A connection with the server could not be established

Solution:

Verify that you have provided the correct port number and then reconnect to the web server.

The server name or address could not be resolved

Symptom:

When I try to connect to the web server from CA ERwin Data Modeler, I get the following error message:

The server name or address could not be resolved

Solution:

Verify that the server name where the web server is installed is correct and then reconnect to the server.

Note: If CA ERwin Data Modeler and the web server are installed on the same computer, you can give the server name as localhost. Suppose that CA ERwin Data Modeler and the web server are installed on different computers. The server name is the name of the computer where the web server is installed.

Invalid user ID or password

Symptom:

When I try to connect to the server, I get the following error message:

Invalid user ID or password. Please try again to login.

Solution:

Type the correct user name and password.

Note: The user must be an application level user and not a database user.

Error 12029

Symptom:

When I connect to the web server, I get the following error message:

Error 12029

Solution:

Restart the web server.

Unable to load the web page from my web browser

Symptom:

When I type the URL in Internet Explorer or Google Chrome to connect to the web server, I get the following error messages:

For Internet Explorer

Internet Explorer cannot display the webpage

For Google Chrome

Oops! Google Chrome could not connect to localhost:18170

Solution:

Restart the web server.

Test connection failed

Symptom:

When I use the Mart Upgrade utility on a 64-bit computer and upgrade a r7.3 through r8.2.7 Mart to r9.0.0 through r9.5.0 Mart, I get the following message:

Test connection failed

Solution:

CA ERwin DM is a 32-bit application. When you try to upgrade to r9.0.0 through r9.5.0 Mart on a 64-bit computer, the COM components do not work.

Follow these steps:

1. Paste the code included at the bottom of this topic to a Notepad file and name it as 64_Bit_Upgrade.reg. Note down the folder where you have created this file.

2. After installing CA ERwin DM version 9.0.0 through 9.5.0, right-click 64_Bit_Upgrade.reg and select Merge.
3. From the Windows Start menu, go to Run and type the following commands to re-register the EAL components:

```
regsvr32.exe "<Install Dir>\CA\ERwin Data Modeler r9.0\EAL.dll"
regsvr32.exe "<Install Dir>\CA\ERwin Data Modeler r9.0\
Upgrade\R8_Binaries\EAL.dll".
```

4. Right-click 64_Bit_Upgrade.reg and select Merge again.

You can now upgrade to version 9.0.0 through 9.5.0 Mart on a 64-bit computer.

64_Bit_Upgrade.reg

Copy the following code and paste it to a new Notepad file:

```
Windows Registry Editor Version 5.00

[HKEY_CLASSES_ROOT\Wow6432Node\CLSID\{9527D0BA-ED75-4b0e-BF4B-E35565DE9852}]
@="CA ERwin Data Modeler Script Client API"
"AppID"="{9527D0BA-ED75-4b0e-BF4B-E35565DE9852}"

[HKEY_CLASSES_ROOT\Wow6432Node\AppID\{9527D0BA-ED75-4b0e-BF4B-E35565DE9852}]
"DllSurrogate"=""

[HKEY_CLASSES_ROOT\Wow6432Node\CLSID\{40FDB0E6-D772-455d-B1C8-83CE79445403}]
@="CA ERwin Data Modeler Script Client API Property Bag"
"AppID"="{40FDB0E6-D772-455d-B1C8-83CE79445403}"

[HKEY_CLASSES_ROOT\Wow6432Node\AppID\{40FDB0E6-D772-455d-B1C8-83CE79445403}]
"DllSurrogate"=""

[HKEY_CLASSES_ROOT\Wow6432Node\CLSID\{6774E2C3-06E9-4943-A8D4-E3007AB1F42E}]
@="CA ERwin Data Modeler Script Client API"
"AppID"="{6774E2C3-06E9-4943-A8D4-E3007AB1F42E}"

[HKEY_CLASSES_ROOT\Wow6432Node\AppID\{6774E2C3-06E9-4943-A8D4-E3007AB1F42E}]
"DllSurrogate"=""

[HKEY_CLASSES_ROOT\Wow6432Node\CLSID\{7D7B1602-9832-4ac6-A224-F0092FAF0D7E}]
@="CA ERwin Data Modeler Script Client API Property Bag"
"APPID"="{7D7B1602-9832-4ac6-A224-F0092FAF0D7E}"
```

```
[HKEY_CLASSES_ROOT\Wow6432Node\AppID\{7D7B1602-9832-4ac6-A224-F0092FAF0D7E}]  
  
"DllSurrogate"=""  
  
[HKEY_LOCAL_MACHINE\SOFTWARE\Classes\AppID\{9527D0BA-ED75-4b0e-BF4B-E35565DE9852}]  
]  
  
[HKEY_LOCAL_MACHINE\SOFTWARE\Classes\AppID\{40FDB0E6-D772-455d-B1C8-83CE79445403}]  
]  
  
[HKEY_LOCAL_MACHINE\SOFTWARE\Classes\AppID\{6774E2C3-06E9-4943-A8D4-E3007AB1F42E}]  
]  
  
[HKEY_LOCAL_MACHINE\SOFTWARE\Classes\AppID\{7D7B1602-9832-4ac6-A224-F0092FAF0D7E}]  
]
```

Internet Explorer Redirects to a Different Link

Symptom:

Suppose that I install CA ERwin Mart Server on a fresh machine. If I enable the SSL option and I invoke CA ERwin Mart Administrator, Internet Explorer redirects the page to res://ieframe.dll//.

Solution:

Internet Explorer versions 8 through 10 have a security enhancement that blocks the following types of sites:

- Sites that have self-signed certificates
- Sites that have self-signed certificates where the certificate does not match the URL

Follow any of these steps:

- Install the certificate in the Trusted Root Certification Authorities store.
- Add the site to trusted sites.
- Set the Internet Explorer Security level to Medium Low.

Chapter 5: Prepare to Use IIS with Mart

If you want to use Microsoft Internet Information Services (IIS) as the web server, configure it before deploying Mart Server.

Configure IIS Web Server

The Mart Server is built using Java technology. Therefore, if you want to connect to Mart through IIS, configure IIS to use the JK ISAPI redirector plugin. Using this plugin, IIS sends servlet and JSP requests to Tomcat.

Note: This procedure describes how to configure IIS 6.0 for Microsoft Windows Server® Enterprise 2008. For more information about configuring other versions of IIS for other operating systems, see the respective vendor documentation.

Follow these steps:

1. Help ensure that Tomcat is working properly. Open a browser and type the following in the Address bar:

```
http://<servername>:18170/MartAdmin
```

The default Tomcat home page appears. <servername> is the name of the computer where you have installed Tomcat. 18170 is the default port number where Tomcat is running. If you are using a different port number, use that port number here. In addition, help ensure that the port number you are using is included in the server.xml file. Typically, the server.xml file is available in the <Tomcat_Home>/conf folder.

2. Install IIS.

For more information about how to install IIS on Windows Server 2008, see Microsoft documentation.

3. Create a folder, for example *Native_IIS* on the computer where you have installed IIS. Download the *isapi_redirect.dll* file for Windows from the Apache Tomcat website and copy to *Native_IIS*. If the name of the DLL file is not *isapi_redirect.dll*, rename it.
4. Create the *workers.properties*, *isapi_redirect.properties*, *uniworkers.properties*, *uriworkermap.properties*, and *isapi_redirect.reg* files in the *Native_IIS* folder.

Note: See the Appendix for sample *workers.properties*, *uniworkers.properties*, *isapi_redirect.reg*, *isapi_redirect.properties*, and *uriworkermap.properties* files.

5. Create a folder named *Logs* under *Native_IIS*. Create two empty files— *isapi.log* and *isapi_redirect.log* under *Logs*.
6. Go to the *Native_IIS* folder, right-click the *isapi_redirect.reg* file, and click *Merge*.
7. Click *Yes* on the message.

The registry file is updated.

8. Follow these steps and create an IIS filter for the DLL placed in Step 5:
 - a. From the Windows Start menu, click *Run*, and then type *inetmgr*.
The Internet Information Services (IIS) Manager window opens.
 - b. Click the computer name and expand *Sites*.

- c. Right-click Default WebSite and select Add Virtual Directory.
The Add Virtual Directory dialog appears.
- d. Enter jakarta for Alias. Enter the path for the isapi_redirect.dll file in the Physical Path field and click OK.
- e. Click Default Web Site.
- f. Double-click ISAPI filters and click Add under Action.
- g. Enter Tomcat for Filter name. Enter the path for the isapi_redirect.dll file in the Executables field.
- h. Click OK and the new ISAPI filter is added.
- i. Click Default Web Site and then double-click Handler Mappings.
- j. Click Edit Features and Permissions.
The Edit Features and Permissions dialog opens.
- k. Select Execute and then click OK.
- l. Click the computer name and then double-click ISAPI and CGI Restrictions.
- m. Click Add under Actions.
- n. Select the path for the isapi_redirect.dll file in the ISAPI or CGI Path field.
- o. Select *Allow extension path to execute* and then click OK.

9. Restart the IIS web server.

10. Stop the MartServer service and start it again.

Note: See the Appendix for sample workers.properties, uniworkers.properties, isapi_redirect.reg, isapi_redirect.properties, and uriworkermap.properties files.

Implement SSL for IIS

If you have deployed Mart Server on IIS, you can implement SSL on IIS. SSL lets you access the Mart through a secured connection.

Note: This procedure describes how to enable SSL for IIS 6.0. If you are using a different version of IIS, see the relevant document on the Microsoft website for more information about installing IIS.

Follow these steps:

1. Open Internet Information Services (IIS) Manager.
2. Double-click Server Certificates and then click Create Self-Signed Certificate.
3. Enter a name for the certificate and click OK.
4. Right-click Default Web Site and click Edit Bindings.
5. Click Add and select https in the Type drop-down menu.
6. Select the certificate name that you have added in the SSL Certificate drop-down menu and click OK.
7. Select Default Web Site and then double-click SSL Settings.
8. Select the Require SSL check box and click Apply.
9. Restart IIS and then restart Tomcat.

Note: If the validity of the certificate expires, create another certificate.

Chapter 6: How to Upgrade Mart Models

Earlier, when you upgraded to a new version of CA ERwin DM, only the schema was upgraded. To upgrade your models, you opened each model in the new version. This process took much of your time, especially when you had to upgrade large models. From CA ERwin DM Version 9.0, upgrading models is automated through the Mart Upgrade utility. The utility lets you upgrade not just models, but users, profiles, and permissions too. In addition, the utility also lets you upgrade to a different database.

If your source Mart version is release 7.0 through 7.3.12, the upgrade happens in two stages. First, the Mart is upgraded to the current release of 8.0 (for example, 8.2.6) and then it is upgraded to the current release of 9.0 (for example, 9.2). The existing upgrade process is used to upgrade from a lower version to the current release of 8.0. After the source Mart is brought up to the current release of 8.0, the new Upgrade Mart utility is used to upgrade to the current release of 9.0. In the new Upgrade Mart utility, you must select the models that you want to upgrade.

Note: The Upgrade Mart utility is available only if you install it while installing CA ERwin DM.

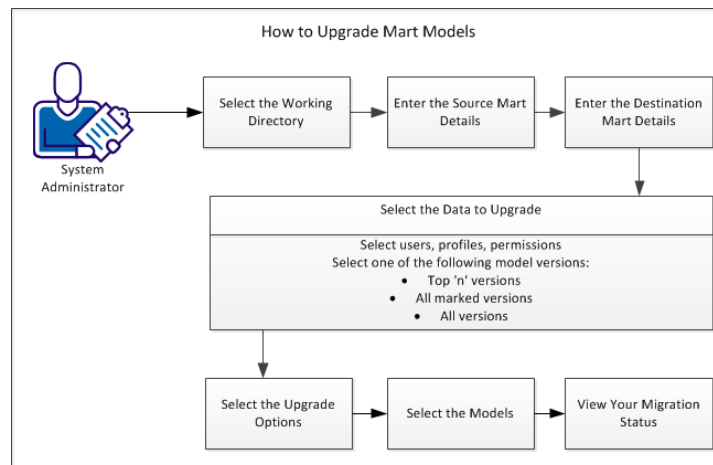
The Upgrade Mart utility lets you upgrade models in several ways. You can choose the best way that helps you get started with your work quickly. Upgrade models in one of the following ways:

- Upgrade the top 'n' versions.
- Upgrade only the marked versions.
- Upgrade all marked versions and top 'n' versions.
- Upgrade all the versions of all the models.

Regardless of the option you select, you can start working on a model after the model is upgraded. You do not need to wait until all the models are upgraded.

The Upgrade Mart utility lets you pause the process any time and start again. When you pause, the utility completes upgrading the current model before stopping. When you restart the upgrade process, the utility continues from the point it had stopped. The utility then displays the models that are not yet upgraded in the list of models that you had selected.

The following diagram illustrates how you upgrade models:



Complete the following tasks to upgrade Mart models:

1. [Review the prerequisites.](#) (see page 123)
2. [Select the working directory.](#) (see page 126)
3. [Enter the source Mart details.](#) (see page 127)
4. [Enter the destination Mart details.](#) (see page 128)
5. [Select the data to upgrade.](#) (see page 129)
6. [Select upgrade options.](#) (see page 131)
7. [Select models.](#) (see page 132)
8. [View the upgrade status.](#) (see page 133)

Review the Prerequisites

Review the following prerequisites:

- The models in the source Mart do not have any locks.
- CA ERwin DM release 9.5.0 Mart is installed.
- A minimum of 2-GB space is available on the drive on which you select the working directory.
- Prerequisites for the computer on which you run the upgrade process are as follows:
 - The operating system is 32-bit. If you are using a 64-bit operating system and the application does not work, see the [Running CA ERwin DM on a 64-bit Operating System](#) (see page 124) topic.
 - A licensed copy of CA ERwin DM release 8..0 through 8.2.7 is available.

Note: If you are using CA ERwin DM release 8.0 or 8.1, copy the license as follows:

For Windows XP and Windows 2003

Copy from: C:\Documents and Settings\\Local Settings\Application Data\CA\ERwin Data Modeler\8.0

Copy to: C:\Documents and Settings\All Users\Application Data\CA\ERwin Data Modeler\8

For Windows 7 and Windows 2008

Copy from: C:\Users\\AppData\Local\CA\ERwin Data Modeler\8.0

Copy to: C:\ProgramData\CA\ERwin Data Modeler\8

- The database client for the source Mart database is installed. For example, for a Microsoft SQL Server Mart, install the SQL Server Native Client on the computer that is designated to run the upgrade process.

Paper Size Considerations When You Upgrade to This Release

Suppose that you have created a model using the r7.0 through r7.3.12 version and you have set the page size to other than Letter. Set this and other printer specifications in the Printer Properties dialog as well and save the model. Otherwise, you must reset your paper size in the Page Setup Editor after you upgrade to this release.

Follow these steps:

1. Click File, Print and the Print dialog opens.
2. Click Page Setup and the Page Setup Editor opens.
3. Select the options for printing on the General and Margin tabs and then click Save to Diagram.

Your selections are saved with the diagram. Click the Load from Diagram button to recall your saved settings, or refresh the editor with your saved settings.

Running CA ERwin DM on a 64-bit Operating System

If you have installed CA ERwin DM on a 64-bit operating system, the application may not run properly. CA ERwin DM APIs use 32-bit COM objects and these objects are not designed for use in a 64-bit environment.

Follow these steps:

1. Paste the code included at the bottom of this topic to a Notepad file and name it as 64_Bit_Upgrade.reg. Note down the folder where you have created this file.

2. After installing CA ERwin DM version 9.0.0 through 9.5.0, right-click 64_Bit_Upgrade.reg and select Merge.
3. From the Windows Start menu, go to Run and type the following commands to re-register the EAL components:

```
regsvr32.exe "<Install Dir>\CA\ERwin Data Modeler r9.0\EAL.dll"
regsvr32.exe "<Install Dir>\CA\ERwin Data Modeler r9.0\
Upgrade\R8_Binaries\EAL.dll".
```

4. Right-click 64_Bit_Upgrade.reg and select Merge again.

You can now upgrade to version 9.0.0 through 9.5.0 Mart on a 64-bit computer.

64_Bit_Upgrade.reg

Copy the following code and paste it to a new Notepad file:

```
Windows Registry Editor Version 5.00

[HKEY_CLASSES_ROOT\Wow6432Node\CLSID\{9527D0BA-ED75-4b0e-BF4B-E35565DE9852}]
@="CA ERwin Data Modeler Script Client API"
"AppID"="{9527D0BA-ED75-4b0e-BF4B-E35565DE9852}"

[HKEY_CLASSES_ROOT\Wow6432Node\AppID\{9527D0BA-ED75-4b0e-BF4B-E35565DE9852}]
"DllSurrogate"=""

[HKEY_CLASSES_ROOT\Wow6432Node\CLSID\{40FDB0E6-D772-455d-B1C8-83CE79445403}]
@="CA ERwin Data Modeler Script Client API Property Bag"
"AppID"="{40FDB0E6-D772-455d-B1C8-83CE79445403}"

[HKEY_CLASSES_ROOT\Wow6432Node\AppID\{40FDB0E6-D772-455d-B1C8-83CE79445403}]
"DllSurrogate"=""

[HKEY_CLASSES_ROOT\Wow6432Node\CLSID\{6774E2C3-06E9-4943-A8D4-E3007AB1F42E}]
@="CA ERwin Data Modeler Script Client API"
"AppID"="{6774E2C3-06E9-4943-A8D4-E3007AB1F42E}"

[HKEY_CLASSES_ROOT\Wow6432Node\AppID\{6774E2C3-06E9-4943-A8D4-E3007AB1F42E}]
"DllSurrogate"=""

[HKEY_CLASSES_ROOT\Wow6432Node\CLSID\{7D7B1602-9832-4ac6-A224-F0092FAF0D7E}]
@="CA ERwin Data Modeler Script Client API Property Bag"
"AppID"="{7D7B1602-9832-4ac6-A224-F0092FAF0D7E}"
```

```
[HKEY_CLASSES_ROOT\Wow6432Node\AppID\{7D7B1602-9832-4ac6-A224-F0092FAF0D7E}]  
  
"DllSurrogate"=""  
  
[HKEY_LOCAL_MACHINE\SOFTWARE\Classes\AppID\{9527D0BA-ED75-4b0e-BF4B-E35565DE9852}]  
]  
  
[HKEY_LOCAL_MACHINE\SOFTWARE\Classes\AppID\{40FDB0E6-D772-455d-B1C8-83CE79445403}]  
]  
  
[HKEY_LOCAL_MACHINE\SOFTWARE\Classes\AppID\{6774E2C3-06E9-4943-A8D4-E3007AB1F42E}]  
]  
  
[HKEY_LOCAL_MACHINE\SOFTWARE\Classes\AppID\{7D7B1602-9832-4ac6-A224-F0092FAF0D7E}]
```

Select the Working Directory

Working directory is the folder where the configuration and log files are stored. This directory is continuously used during the Mart upgrade process. You can use the same working directory to upgrade all your models, or you can use a different directory for a different set of models. However, we recommend that you use the same working directory for all your models.

If you pause the upgrade process and continue later, you can select the same working directory. If you select the same working directory, all the details you have previously entered are populated, except for the password. You cannot change the details.

Follow these steps:

1. From the Windows Start menu, open the Upgrade Mart utility.

The Mart Upgrade dialog appears.

2. Select a folder on a drive that has a minimum of 2-GB free space.

The message, *If your source Mart version is release 7.0 through 7.3.12, you must first upgrade it to the current release of 8.0. Click Yes to upgrade* appears.

3. If your source Mart is CA ERwin DM 7.0 through 7.3.12, click Yes.

The Connection Manager dialog appears.

- a. Enter the details that are required to connect to the source Mart. Click Connect.

The Mart dialog appears.

- b. Click Update.

The source Mart is upgraded to CA ERwin DM the current release of 8.0.

- c. Click Close.

The current wizard closes and the Upgrade Wizard appears. The Upgrade Wizard lets you upgrade from any release of 8.0 (for example, 8.2.6) to the current release of 9.0 (for example, 9.2).

4. If your source Mart is any release of CA ERwin DM 8.0, click No.

The Upgrade Wizard appears.

Enter the Source Mart Details

When you upgrade Mart, CA ERwin DM connects to your existing Mart to get your models. Provide your existing Mart information, including the user credentials. If you restart the upgrade process and select an existing working directory, the details you have selected previously are populated, except the password. You cannot change the details.

Note: If your source Mart is CA ERwin DM release 7.0 through 7.3.12, enter the same details that you provided in the Connection Manager dialog.

Follow these steps:

1. In the Upgrade Wizard, click Source Mart Details.
2. Complete the following fields:

Database Type

Specifies the type of Mart database.

Server

Specifies the server on which the source Mart is hosted. This parameter is not valid for Oracle.

Database

Specifies the database on which the source Mart is hosted. This parameter is not valid for Oracle.

Connection String

Specifies the connection string that is required to connect to a database. This parameter is valid only for Oracle.

Authentication

Specifies the type of authentication you use to connect to Mart.

User Name

Specifies the user name to connect to Mart.

Password

Specifies the password to connect to Mart.

3. Click Test Connection.

If the data that you have provided is valid, a message appears that the connection is successful. If the connection fails, enter valid data and test again.

Enter the Destination Mart Details

The Upgrade Mart utility converts models from CA ERwin DM 7.0 through 7.3.12 to the current release of 9.0 (for example, 9.2). The destination Mart is the current release of 9.0 Mart and the Mart database can be any database. For example, if your source Mart database is Microsoft SQL Server, the destination Mart database can be Oracle 11g.

At any time if you restart the upgrade process and select an existing working directory, the details you have selected previously are populated. The password is not populated.

Follow these steps:

1. On Upgrade Wizard, click Destination Mart Details.
2. Complete the following fields:

Server Name

Defines the name of the web server where you have installed the Mart.

Application Name

Defines the application name of the Mart that you want to connect to.

Default: MartServer

Port No.

Specifies the port number to access the web server.

Use IIS

Specifies that you want to use IIS to connect to Mart. This check box is available only if you have configured IIS.

Use SSL

Specifies that you want to connect to the destination Mart through a secured connection. Select this check box only if you have implemented SSL on the destination Mart.

Authentication

Specifies the type of authentication you want to use.

User Name

Defines the name of the user.

Password

Defines the password of the user.

3. Click Test Connection.

If the data that you have provided is valid, a message appears that the connection is successful. If the connection fails, enter valid data and test again.

Select the Data to Upgrade

The Upgrade Mart utility lets you upgrade not just models, but users, profiles, and permissions too. Select the objects that you want to upgrade, including the versions of models.

Note: Suppose that your source Mart version is CA ERwin DM release 7.0 through 7.3.12, and you complete upgrading it to the current release of 8.0. You must still select the models that you want to upgrade to the current version.

You can upgrade models in the following ways:

- Upgrade the top 'n' versions.
- Upgrade only the marked versions.
- Upgrade all marked versions and top 'n' versions.
- Upgrade all the versions of all the models.

Choose the best way that helps you get started with your work quickly.

The time that is taken to upgrade models depends on the number of models and number of versions of models present in your Mart. If you choose to upgrade only selected versions, the Upgrade Mart utility first upgrades the selected versions and then the remaining versions.

If you restart the upgrade process and select the same working directory, the details you have selected previously are populated, except for the password.

Follow these steps:

1. On Upgrade Wizard, click Data to Upgrade.
2. Complete the following fields:

Upgrade Users

Specifies that you want to upgrade users. The users are upgraded and the passwords of Server and Windows users are left blank. The upgraded users are assigned to their corresponding models and versions as owners. If users are not upgraded, the owners for models and versions are left blank. After the users are upgraded, open CA ERwin Mart Administrator and for each user, enter the email ID and reset the password.

Upgrade Models

Specifies that you want to upgrade models.

Note: You can upgrade models only if users and profiles are upgraded.

Upgrade Profiles

Specifies that you want to upgrade profiles. If a profile matches with a profile in the source Mart, the corresponding profile available in the current release is used. If a profile does not match with any profile in the source Mart, then it is created.

Upgrade Permissions

Specifies that you want to upgrade permissions. Permissions are upgraded only if users, models, and profiles are upgraded.

Note: Subject Area-level permissions are ignored when you upgrade permissions to the current release.

To Select the Top 'n' Versions

Selective

Specifies that you want to upgrade the selected versions first.

No. of Top Versions to Upgrade

Specifies the number of top versions that you want to upgrade. Only those versions are selected from your Mart that are not marked versions and are not deleted. These models are upgraded first and then the remaining models are upgraded.

Note: To upgrade only the marked versions of all models, enter zero for *No. of Top Versions to Upgrade*.

To Select the All the Marked Versions

All Marked Versions

Specifies that you want to upgrade the all the marked versions. If you specify the number of top versions to upgrade, all the marked versions are upgraded first and then the top n versions are upgraded.

To Select All the Versions

All

Specifies that you want to upgrade all the versions. In the first iteration, the newest versions of all models are upgraded. In the next iteration, the next-newest versions are upgraded. This process goes on until all the versions are upgraded.

Select Upgrade Options

If you are upgrading from CA ERwin DM Version 7.0 through 7.3.12, you can select the upgrade options for the main subject areas and transforms. At any time if you restart the upgrade process and select an existing working directory, the details you have selected previously are filled up automatically.

Follow these steps:

1. On Upgrade Wizard, click Upgrade Options.
2. Complete the fields. The following fields are not self-explanatory:

Keep the Main Subject Area

Specifies that you want to keep the main subject area.

Keep the Diagrams for the Main Subject Area

Specifies that you want to keep the diagrams for the main subject area.

TimeOut (in Min)

Specifies the time for which the utility waits for the following events:

- Open an older version of the model and save it to disk: If a model version is not saved to disk in this time, this thread of the process is relaunched and the next model is saved.
- Open a version of a model and save it to the latest release of 9.0 Mart: If a model is not saved in this time, the utility relaunched this thread of the process.

Default: 60 minutes

Retries for a Model

Specifies the number of times the utility tries to open a model version. For example, suppose that you set the value of this parameter as 3. If a model version does not load within the time specified in the TimeOut field, the utility tries to open it again. The utility tries this three times; if it is still not successful, then it moves on to the next model version.

Export Library Name

Specifies a library in the destination Mart, where you want to copy the upgraded models. Use this option if you want to copy the upgraded libraries to a specific library. If no name is provided, the libraries are copied in the root of Mart.

Select Models

The libraries and models of the source Mart are displayed in the form of a tree. You can select an entire library or an individual model under a library to upgrade. This selection and the versions you selected previously, determine the models and versions you want to upgrade. For example, suppose that you have selected to upgrade the top five versions. If you select nine models on the Select Models window, the top five versions of all the nine models are upgraded.

Follow these steps:

1. Click Select Models on Upgrade Wizard.

The models that satisfy the criteria selected in the *Data to Upgrade* dialog are displayed. If you restart the upgrade process, only those models that are not upgraded are available for selection.

2. Select the libraries or individual models that you want to upgrade.

If a library or model name contains special characters (? , \$, ' , \) , they are converted to underscore (_) when displayed on this dialog.

Note: If a library or model name contains a forward slash (/) , it is not upgraded.

3. Click Finish.

Upgrading starts and the Upgrade Progress dialog displays the progress.

Pause and play

The Upgrade Mart utility lets you pause the process any time and start again. When you pause, the utility completes upgrading the current model before stopping. When you restart the upgrade process, the utility continues from the point it had stopped. The utility then displays the models that are not yet upgraded in the list of models that you had selected. If there are several models remaining, you can select a few to upgrade. If you select the same working directory, the source and destination Mart and the model version details are filled up automatically.

If your source Mart version is older than CA ERwin DM 8.0, it is upgraded to the current release of 8.0 only once. If you upgrade a model to the current release of 8.0 and then pause the upgrade process, the option to upgrade to the current release of 8.0 does not display again.

Note: When you pause and restart the upgrade process, you can select all the remaining models or a few models from the original list of models. Suppose that you have three libraries A, B, and C in the catalog and you select only A to upgrade. Suppose that there are ten models in library A. If you pause after the fifth model and you restart the process, only the remaining five models from library A are displayed.

View the Upgrade Status

You can view the status of upgrade, when upgrade is in progress. The Upgrade Progress dialog displays the model that is being upgraded. This information helps you determine when to pause the upgrade process, if necessary.

Note: If your source Mart is older than 8.0, the Upgrade Process dialog does not display the status of upgrade from the older version to the current release of 8.0. The Upgrade Progress dialog displays the status of upgrade from any release of 8.0 to the current release only.

To view the upgrade status, click Details on the Upgrade Progress dialog. The Mart Upgrade status dialog appears and displays the libraries and models that are selected for upgrade, in the form of a tree. The status of each model is indicated next to the model.

Log Files

The Mart Upgrade utility creates the following log files in the working directory:

LogFile_Fetch_Models.txt

Includes problems if any, while fetching models to display in the model tree.

NamesWithSlash.txt

Includes the names of libraries or models that have a forward slash (/). If any of the model or library names has a forward slash (/), such names are not displayed in the model tree. Log on to the source Mart, change such names, and then load the models again.

SourceMartLogFile.txt

Includes any error that is displayed while opening models from the source Mart.

DestinationMartLogFile.txt

Includes any error that is displayed while saving models to the destination Mart.

Troubleshooting

Test Connection Failed--Source Mart

Symptom:

The Mart Upgrade utility is not connecting to the source Mart.

This problem can be for one of the following reasons:

- The details for the source Mart are incorrect.
- The database client is not installed.
- The source database is not started.
- The source database is not able to connect from the client computer.

Solution:

Depending on the reason, use one of the following solutions:

- Ensure that the database details are correct.
- Ensure that a database client installed on the computer where you want to run the Mart Upgrade Utility.
- Ensure that the database is running.
- Ensure that you can connect to the source Mart with the database client installed on your computer.

Your License does not Permit Connection to this Mart

Symptom:

The Mart Upgrade utility is not connecting to the source Mart.

This problem could be for one of the following reasons:

- The computer does not have a valid CA ERwin DM Release 8 license.
- The source Mart version is older than CA ERwin DM Release 8.

Solution:

Depending on the reason, use one of the following solutions:

- Install CA ERwin DM Release 8.x Workgroup Edition license.
- If you are using CA ERwin DM release 8.0 or 8.1, copy the license as follows:

For Windows XP and Windows 2003

Copy from: C:\Documents and Settings\\Local Settings\Application Data\CA\ERwin Data Modeler\8.0

Copy to: C:\Documents and Settings\All Users\Application Data\CA\ERwin Data Modeler\8

For Windows 7 and Windows 2008:

Copy from: C:\Users\\AppData\Local\CA\ERwin Data Modeler\8.0

Copy to: C:\ProgramData\CA\ERwin Data Modeler\8

- Upgrade the source Mart to CA ERwin DM release 8.x and then run the Mart Upgrade utility.

Test Connection Failed--Destination Mart

Symptom:

The Mart Upgrade utility is not connecting to the destination Mart.

This problem can be for one of the following reasons:

- The web server details are wrong.
- The web server is not started.
- Mart cannot connect to the web server.
- IIS is not configured correctly (If you are connecting to Mart using IIS).

Solution:

Depending on the reason, use one of the following solutions:

- Ensure that the web server is running.
- Ensure that the web server details are correct.
- Ensure that you can connect to the web server from the computer on which you are running the Mart Upgrade utility. Try to log in to CA ERwin Mart Administrator to help ensure that the connection can be established.
- Ensure that IIS is configured properly.

Unable to Select Upgrade Models Check Box

Symptom:

I am unable to select only the Upgrade Models check box in the Data to Upgrade step.

Solution:

When you select the data that you want to upgrade, you cannot select only the Upgrade Models check box. The reason is, you can upgrade models only if users and profiles are upgraded.

Chapter 7: Administer Mart

This section contains the following topics:

[Adding a User](#) (see page 138)

[Sessions](#) (see page 152)

[Delete Mart](#) (see page 153)

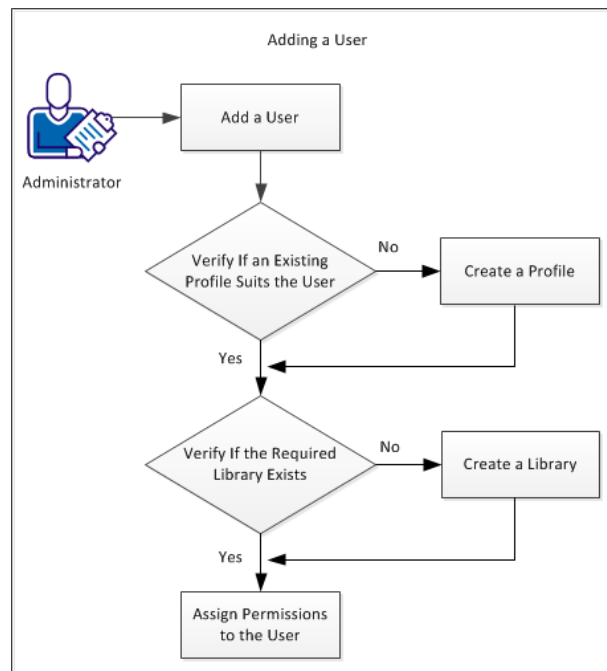
[Catalog Management](#) (see page 153)

Adding a User

As a System Administrator, after installing Mart, you add users, create libraries, and give permissions to users on the required libraries. You know which user should be of what type. You have the details of the profiles you want to create, and you know which profile to assign to which user.

This scenario describes how you can add users to Mart.

The following diagram illustrates how to add a user to Mart:



The following tasks describe how to add a user:

1. Add a user.
2. Verify if an existing profile suits the user.
3. Create a profile.
4. Verify if the required catalog or library exists.
5. Create a catalog or library.
6. Assign permissions to the user.

Add a User

As a Mart Administrator, you can add users so that they can access Mart. You delete users if they are not required to access the Mart. You know the type of user you want to add—a user that is authenticated by Mart, a user that is authenticated by the Windows network, or a Windows user group.

Follow these steps:

1. Open CA ERwin Mart Administrator.
2. Click User Management, Add User.
3. Select one of the following options for User Type:

Server User

Specifies a Mart user that is authenticated by the credentials provided in Mart.

Windows User

Specifies a Mart user that is authenticated by the Windows network.

Group User

Specifies a Windows user group. All users that are part of the selected group can access Mart.

4. Enter the user name and email address. Confirm the email address.

Note: The user name field is displayed only for the Server User and Windows User options.

5. Click Save.

The user account is added and an email is sent to the user.

Mart Users

From r9 onwards, you can add individual users and Active Directory user groups to Mart. Individual users are categorized as Server users and Windows users, which are based on the way they are authenticated. There are no database level users in the current Mart.

The descriptions of user types are as follows:

Server User

Specifies the user that is authenticated by the Mart server. The server user is an application level user and not a database user. A server user provides the user name and password to log on to Mart. For example, Peter is a Business Analyst and reviews data models. Add Peter as a Server user as he accesses Mart only at the time of reviewing data models. Peter provides his user name and password to connect to Mart.

Note: Only a Server user can access CA ERwin Mart Administrator. There are no database level users in the current Mart.

Windows User

Specifies the user that is authenticated by the Windows network. A Windows user need not provide the user name and password to log on to Mart. For example, Jane is a Data Modeler who works on Mart. Add Jane as a Windows user, so she accesses Mart using her Windows network credentials. Jane does not provide her user name and password to connect to Mart.

User Group

Specifies a user group that is part of an Active Directory. Use this option to add an entire group that accesses Mart. For example, you have a user group ABC-Domain\XYZDivision_AllModelers@MyOrg.com. Add XYZDivision_AllModelers, so that all users that are part of this group and are authenticated by ABC-Domain, connect to Mart. Users of this group do not have to provide their user name and password when they connect to Mart.

Best Practices to Add a Group User

The following are the best practices to add a Group User:

- Suppose that you have a parent group that includes subgroups. To give access to all the subgroups under a parent group, add the parent group as a Group User.
- Suppose that you want to give generic permissions to all users of a parent group and specific permissions to a subgroup. Add both, the parent group and the subgroup and give specific permissions to the subgroup. The permissions given to a subgroup take precedence over the permissions given to a parent group.
- Suppose that you want to give generic permissions to a group and specific permissions to a particular user of the group. Add the group and add the particular user as a Windows user. The permissions given to a Windows user take precedence over the permissions given to a group user.

Verify if an Existing Profile Suits the User

CA ERwin DM Version 9 Mart has four built-in profiles:

- Admin
- Architect
- Modeler
- Viewer

Verify if any of these profiles suit the user you have created. If they do not, create the required profile.

How Profiles Work

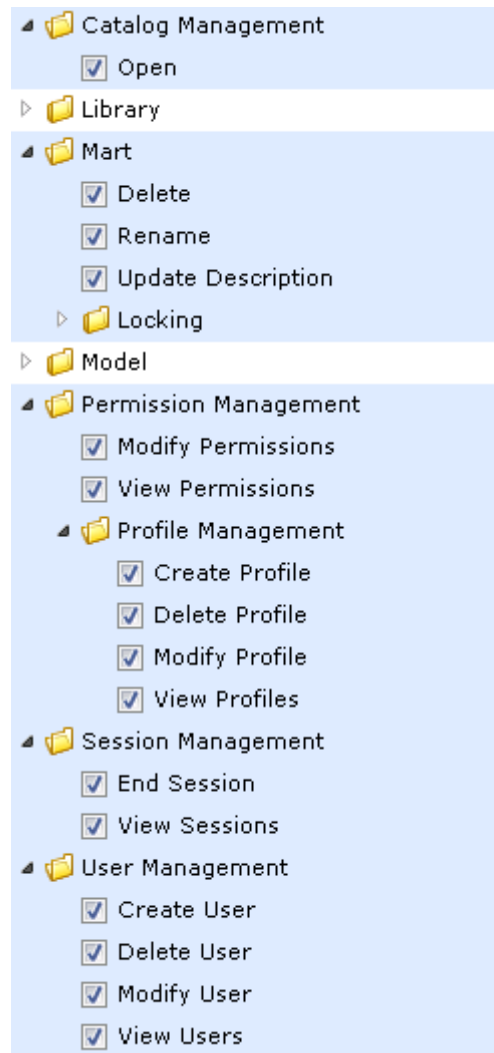
The way profiles work depends on the following factors:

- The type of user that is assigned to the profile.
- The objects that are included in the profile.
- The permissions that are assigned to the objects.

This section describes the permissions available for various types of users. The section also includes common user profiles and describes permissions for those profiles.

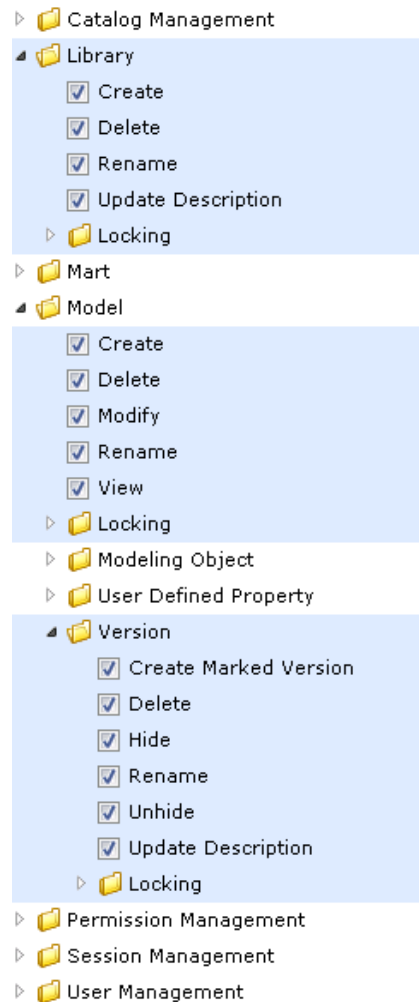
Type 1: Mart level

- Includes items under Catalog Management, Mart, Permission Management, Session Management, and User Management.
- Mart level permissions are granted only if a user is assigned to a profile on Mart.
- The Mart level permissions are restricted or allowed at Mart Server itself. The only exception is that Catalog Manager, Open is handled by the client.



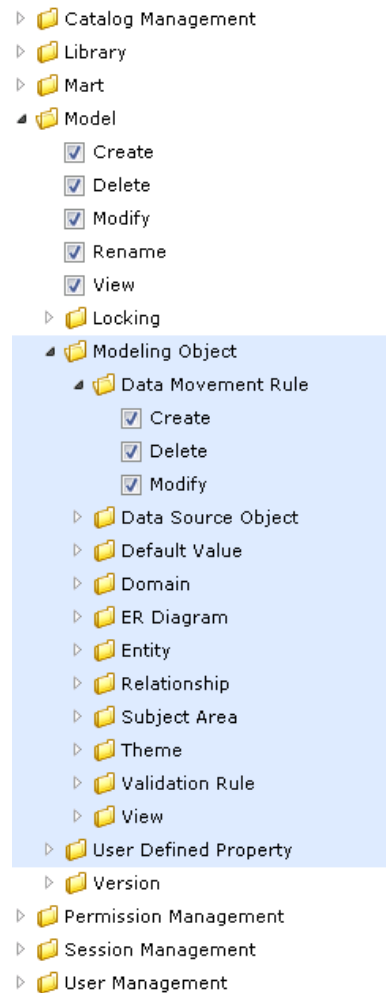
Type 2: Catalog Object level

- Includes items under Library, Model, and Version.
- All library privileges, that is, create, delete, and modify are granted when a user is assigned to a profile on the Library or Mart.
- Catalog Object level permissions are restricted or allowed at Mart Server itself. The only exception is that Model, Modify is also verified in CA ERwin DM as part of live semantic.



Type 3: Modeling Object level

- Includes items under Modeling Object.
- Modeling Object level permissions are used for restricting or allowing create, modify, and delete operations on modeling objects within the Catalog of type Model.
- Modeling Object level permissions are restricted or allowed from live semantic in CA ERwin DM.



Permissions

Permission are defined as follows:

- A profile assigned to a user on a catalog.
- A Catalog could be the Mart, a Library, or a Model.

For more information about the types of users, see the [Mart Users](#) (see page 139) topic.

Authorization rules for users

The authorization rules for users are explained with examples for profiles and users. This approach helps you relate to a scenario that exists in your work environment and understand the rules better.

The authorization rules are explained based on the following sample catalog structure:

- Mart
 - Library1
 - Model1
 - Model2
 - Library2
 - Model3
 - Model4

Consider the following sample profiles and users:

- Sample profiles P1 and P2
- Sample Server user SU1
- Sample Active Directory (AD) user ADU1
- Sample AD groups ADG1 and ADG2

Authorization Rules for Server User

- Rule 1: P1 assigned to SU1 on Mart
 - SU1 gets the following privileges:
 - Type 1 privileges of P1 on Mart
 - Type 2 privileges of P1 on all libraries and models
 - Type 3 privileges of P1 on all models in Mart
- Rule 2: P1 and P2 assigned to SU1 on Mart
 - SU1 gets the union of P1 and P2 privileges on the entire Mart. Type 1, 2, and 3 privileges are considered. Union here means that if a privilege is restricted in P1 but allowed in P2, it is allowed for SU1.
 - In this case, multiple profile rule does not apply, as the union of privileges is used.
- Rule 3: P1 assigned to SU1 on Library1
 - SU1 gets the privileges assigned for P1 on the entire Library1.
 - Type 1 privileges are not considered.
- Rule 4: P1 assigned to SU1 on Model1

- SU1 gets the privileges assigned for P1 on Model1.
- Type 1 privileges and some Type 2 (Library) are not considered.
- Rule 5: P1 assigned to SU1 on Mart and P2 assigned to SU1 on Library1
 - SU1 gets the privileges of P1 on Mart and Library2, but not on Library1.
 - SU1 gets the privileges of P2 on Library1.
- Rule 6: P1 assigned to SU1 on Mart and P2 assigned to SU1 on Model1
 - SU1 gets the privileges of P1 on Mart, Library1, Model2, and the entire Library2, but not on Model1.
 - SU1 gets the privileges of P2 on Model1.

Authorization Rules for Windows User

- Rule 7:
 - If a Windows user is added as a Mart user, the rules of a Server User apply to the Windows user.

Authorization Rules for Group user

- Rule 8: P1 assigned to ADG1 on Mart, ADU1 is part of ADG1, and ADU1 not added as user on Mart
 - ADU1 gets the privileges of P1 on Mart.
- Rule 9: P1 assigned to ADG1 on Mart, P2 assigned to ADG1 on Library1, ADU1 is part of ADG1, and ADU1 is not added as user on Mart
 - ADU1 gets the privileges of P1 on Mart and Library2, but not on Library1.
 - ADU1 gets the privileges of P2 on Library1.
- Rule 10: P1 assigned to ADG1 on Mart, P2 assigned to ADG2 on Mart, ADU1 is part of ADG1 as well as ADG2, and ADU1 is not added as user on Mart
 - ADU1 gets the union of P1 and P2 privileges on Mart.
- Rule 11: P1 assigned to ADG1 on Mart, P2 assigned to ADG2 on Library1, ADU1 is part of ADG1 as well as ADG2, and ADU1 is not added as user on Mart
 - ADU1 gets the privileges of P1 on Mart and Library2.
 - ADU1 gets the union of P1 and P2 privileges on Library1.
- Rule 12: P1 assigned to ADG1 on Mart, ADU1 is part of ADG1, and ADU1 is also added as user on Mart
 - Since ADU1 is also added as a user on Mart, the user is not considered a part of any group. The rules are same as that of a Windows user.
- Rule 13: P1 assigned to ADG1 on Mart, P2 assigned to ADG2 on Mart, ADU1 is part of ADG1 only, ADG1 is subgroup of ADG2, and ADU1 is not added as user on Mart

- ADU1 gets the privileges of P1 on Mart. This is because ADG1 is explicitly added on Mart and ADU1 is only part of ADG1.
- Rule 14: P1 assigned to ADG1 on Mart, P2 assigned to ADG2 on Mart, ADU1 is part of ADG1 as well as ADG2, ADG1 is subgroup of ADG2, and ADU1 is not added as user on Mart
 - ADU1 gets the union of P1 and P2 privileges on Mart.

Create a Profile

Profiles determine who can change the data or models in Mart. As a System Administrator, you can create profiles and can attach them to users for a catalog. When a user creates, modifies, or deletes an object in Mart, the profile determines if the operation is permitted. Each profile grants permissions at the following object levels, in the same hierarchical order:

- Catalog Management
- Library
- Mart
- Model
 - Locking
 - Modeling Object
 - Data Movement Rule
 - Data Source Object
 - Default value
 - Domain
 - ER Diagram
 - Entity
 - Relationship
 - Subject Area
 - Theme
 - Validation Rule
 - View
 - User-Defined Property
 - Version
- Permission Management
- Reports
- Session Management
- User Management

Note: Admin, Architect, Modeler, and Viewer profiles are created when you install Mart.

Follow these steps::

1. Open CA ERwin Mart Administrator.
2. To add a profile, follow these steps:

- a. Click Add Profile and enter a name for the profile.
- b. Enter a description for the profile.
- c. Expand the items in the Permission Details section and select the permissions you want to assign.

Any dependent permissions for the selected permissions are selected too. For example, if you select the Create Entity permission, then Model Modify, ER Diagram Modify, ER Diagram Modify under Subject Area, and Key Group Create permissions are also selected.

- d. Click Submit.

The profile is saved.

3. To create a profile from an existing profile, follow these steps:

- a. Enter a name for the profile.
- b. Select Clone from existing profile and select a profile to clone.
- c. Click Submit.

- d. Expand the items in the Permission Details section and select the permissions you want to assign.

Any dependent permissions for the selected permissions are selected too. For example, if you select the Create Entity permission, then Model Modify, ER Diagram Modify, ER Diagram Modify under Subject Area, and Key Group Create permissions are also selected.

- e. Click Submit.

The profile is saved.

Verify if the Required Library Exists

When you migrate your models to CA ERwin DM Version 9 Mart, you can choose to create libraries and copy models to them. Verify if you can assign these libraries to the user you want to create. If not, create the required libraries.

Create a Library

A library is a collection of related models and a catalog is a group of libraries. Use libraries to add an extra level of security or isolate implementation differences, such as development and production environments.

Follow these steps:

1. Select Mart or an existing library and click New.
A new library appears with a default name.
2. Change the name per your requirement.
3. Enter a description for the library in the Description field and click Apply.
A library is created.

Assign Permissions to a User

As a System Administrator, you assign different levels of permissions to different profile users. Control the level of permission and assign a user or a group to a profile so that they have specific access. A user can be assigned to multiple profiles. For example, a user can have full permissions on one library and only view permissions on another.

Follow these steps:

1. Open CA ERwin Mart Administrator.
2. Click Permissions Management, select the libraries that you want the user to access, and select a user or a group.
3. Assign a user or group to a profile and click Submit.
The profiles is assigned to the user or group.

Examples

This section describes steps to accomplish common business requirements.

Example: Provide permissions to view models in a specific library

Chris, a Business Analyst, has to access Mart to review the models you have copied to the *For Review* library. Chris only reviews the ER diagrams available in a specific subject area. He may modify the diagrams if required. Chris uses his Windows credentials to log on.

Follow these steps:

1. Add a Windows user named Chris.
2. Create a library named For Review and copy the required model to it.
3. Create a profile named Business Analyst and include the following permissions:
 - Model, Modify
 - Model, Modeling Object, Subject Area, Create and Modify
 - Model, Modeling Object, Subject Area, ER Diagram, Create and Modify
4. Assign the profile to Chris.

Chris can now log in to Mart using his Windows credentials and review the model.

Example: Set up Mart that allows users save models under a specific library and not under root

You are a System Administrator and you want Jane to create models only under a specific library and not under Mart root.

Follow these steps:

1. Add a Windows user named Jane.
2. Create a library named Projects_Jane.
3. Create a profile named Jane_Profile and include the following permissions:
 - Model, Create
 - Model, Modeling Object, Subject Area, Create and Modify
 - Model, Modeling Object, Subject Area, ER Diagram, Create and Modify
4. Click Permission Management.
5. Select Projects_Jane in the Select Catalog pane. Select Jane in the Select User/Group pane. Select Jane_Profile in the Assign User/Group to Profile pane.
6. Click Assign Profile and then click Submit.

Jane can create models and save them only under the Projects_Jane folder.

Sessions

When you log in to the mart, this event is recorded as the start of a session. During a session, the models that you open and the locks that are applied to each catalog entry are tracked. Each session has its own Action Log, contained in CA ERwin Data Modeler, which logs the transaction information containing real-time changes that are made to a model. After you have logged out of the mart, the Action Log is cleared and the session is closed.

Session Manager lets you view a session and terminate your sessions. You can also assign the appropriate permission to a user to terminate a session.

To view a session, click File, Mart, Session Manager. The Session Manager dialog lists all the sessions of the current user.

You can also view and delete offline mart models that are saved in a session.

Note: Deleting the offline mart model does not delete the model from the stored location. It deletes the information about that model from CA ERwin Data Modeler.

To delete an offline mart model, open the Session Manager dialog, and click Offline Mart Models. The Offline Mart Model Manager dialog opens. Select the Catalog item and click Delete offline mart models. The information about the offline mart model is deleted from CA ERwin Data Modeler.

Terminate Inactive or Closed Sessions

Terminate an Inactive or a Closed session to release all the locks applied in that session. If a session is terminated, then all the information that is related to offline mart models in that session is deleted.

Follow these steps:

1. Click File, Mart, Session Manager.

The Session Manager dialog opens. It displays all the sessions of a user.

2. Select a session from the Sessions list and click Delete Session.

The selected session is terminated.

Delete Mart

As a Mart Administrator, you can delete Mart.

Important! If you delete Mart, all your libraries, models, and the associated data are deleted permanently.

Follow these steps:

1. Open the CA ERwin Mart Administrator and click Delete Mart.
A warning message appears.
2. Type YES and click OK.
Mart is deleted and the Initialize Mart web page for your database appears.

Catalog Management

The catalog includes libraries, models, and versions of models. Libraries help you organize projects by grouping models together. For example, you can create a library to store models that share a workgroup, a security level, or a target server. Any number of libraries or models can be created and stored in a catalog. By organizing your data models in libraries, you can also easily manage model merging and conflict resolution.

Library Structure Planning

Before you set up your library structure in the Catalog Manager, review how the workgroup modeling process works in your organization. To help you review your workgroup modeling process, answer the following questions:

- How are CA ERwin Data Modeler models moved from the development library to the production library?
- How are the approval process for moving models documented and enforced?
- How are CA ERwin Data Modeler models merged into the enterprise model and who controls this process?
- Do you use versioning to record the milestones of models?
- Who has what type of access to each library?
- Are CA ERwin Data Modeler models generated to multiple target environments (such as Microsoft SQL Server and Oracle)?
- How are you warehousing your data?

Library Structure Organization

During the model development life cycle, you must have an organized library structure. Having an organized library structure helps you move only those models that are intended for production to that level. You can structure your libraries in three distinct types:

Development Libraries

Contains models that are being created or updated.

Test Libraries

Contains finished models that are being tested before moving them to production.

Production Libraries

Contains the finished models that were tested and debugged.

Library Security Levels

After you have created your libraries, determine the security levels for each library. The following examples give you an idea of how you can use libraries and security together to help safeguard models:

- The entire modeling team can have access to the development library and read-only access to the test and production libraries. Authorized project leaders can be assigned to move models from the development library to the test library, and then from the test to the production library.
- Models from other libraries (for example, Sales and Accounting) can be merged from their own libraries in the enterprise model. Modelers working on projects in the Sales or Accounting libraries can have read-only access to the enterprise library and full access to their own projects. Assign one person or group to manage integration to the enterprise model.
- Modelers need full access to their own libraries and read-only access to the libraries of others. This type of security enhances production for the following reasons:
 - Everyone can see what everyone else is working on.
 - All models are stored in one location.
 - Permissions can be changed as different collaborations among modelers become necessary.

Library Structure Considerations

You must consider any or all of these suggestions when building a library structure:

Practical library names

Use practical and functional library names that help all users understand the purpose and type of models contained in the library. For example, you can use the format: Short System Name+Version+Stage (for example, Ora_8_Production).

Model naming and data type standards

Enforce naming and data type standards, which are vital to efficient workgroup modeling.

Note: For more information, see the *CA ERwin Data Modeler Online Help*.

Rules for promoting models

Define a rigid and documented model approval and promotion process using different libraries for each development phase.

Rules for versioning models

Define versioning rules using different libraries for each development version (for example, Development Beta 1).

User rights and security

Apply stricter rights to libraries that contain mature models nearing the latter stages of development. You can also apply strict rights to individual models.

Publication

Generate reports to communicate milestones in the model development process.

Schema generation rules

Set up a library where you generate the model schema. Usually, you generate the model schema of promoted models only in the latter stages of development.

Manage Catalogs

A catalog is similar to a directory structure. It consists of libraries, data models, model versions, and templates. Catalog Management displays a hierarchical tree of Mart and lets you manage your catalogs. It has all the features included in the Library Manager and Session Manager modules that were available in the previous releases of CA ERwin Data Modeler Workgroup Edition.

Following are some of the features in Catalog Management:

Libraries

Use libraries to group related models. Libraries add an extra level of security or isolate implementation differences, such as development and production environments. A library can be part of another library or can be present under the Mart.

Sorting

In a catalog, the libraries are sorted alphabetically, and the models within the libraries are also sorted alphabetically. Versions are sorted newest to oldest; Named Versions appear first, and then Delta Versions follow. The catalog entries sort in the following order: Libraries, Models, Templates, and Versions respectively.

Context Menu

The context menu appears when you select a catalog entry and right-click. You can use the context menu to cut, copy, paste, and delete a library, model, or template. You can also use the context menu to mark a Delta version and delete, hide, and unhide Named and Delta versions.

You can create, delete, copy, and move catalog entries; you can hide and unhide versions.

Follow these steps:

1. Open CA ERwin Mart Administrator and select the Catalog Management panel.
2. To create a library, follow these steps:
 1. Click Create Library.
A library is created.
 2. In the Edit Catalog section, edit Name and Description fields and click Submit.
The name and description are updated.
3. To create a Named version, follow these steps:
 1. Select either a Named version or a Delta version of a data model and click Mark Version.
A Named version is created.

2. In the Edit Catalog section, edit the name and description fields and click Submit.

The name and description of the Named version is updated.

4. To hide a model version, select the version from the Catalog pane, and click Hide Version.
5. To unhide a model version, select the model of that version, click Unhide Version. From the Hidden versions dialog, select your version and click OK.
6. To delete a catalog entry, select the entry and click delete.

The catalog entry is permanently deleted from Mart and it cannot be recovered.

Lock a Catalog Entry

You can lock any catalog entry, even mart, to restrict other users from editing it. You can view the current lock status of a catalog entry in the Locks section. Locks last until the duration of a session or until removed. Locks can last even after a session is disconnected; it means that the user is disconnected from Mart but the lock is still preserved. You can work offline on a model without losing the lock. Only the Administrator can override any lock.

The following lock options are available in Mart:

Existence Lock

Prevents other users from deleting a catalog entry. When you have an Existence lock, other users can read and update, but not delete the catalog entry. You can edit or move the catalog entry but cannot delete the entry. The presence of an Existence Lock prevents anyone, other than the lock owner, from acquiring an Exclusive Lock on the entry. You can apply Existence Lock, Shared Lock, or Update Lock, with the existing Existence Lock, to the catalog entry.

Shared Lock

Prevents the user, including the lock holder, from editing the catalog entry. When a you have a Shared lock, other users can read, but cannot update or delete the catalog entry. You can open a model with Shared Lock in read-only mode; you cannot edit the model. The presence of a Shared Lock prevents anyone from acquiring Update Lock or an Exclusive Lock on the entry. You can apply Existence Lock with Shared Lock to a catalog entry.

Update Lock

Lets only the lock holder to edit the catalog entry. When you have an Update lock, other users cannot read, update, or delete the catalog entry. The presence of Update Lock on an entry prevents other users from acquiring any other locks, except Existence Lock.

Exclusive Lock

Lets only the lock holder to edit a catalog entry. When you have an Exclusive lock, other users cannot read, update, or delete the catalog entry. In addition, no other user can add any type of lock on the entry.

Unlock Entry

Lets only the lock holder to unlock an entry.

Depending on the type of lock, you can move any entry in the catalog. Acquire Update Lock on a catalog entry before you move that entry.

You cannot move or copy a catalog entry if any of the following conditions is true:

- the entry has any lock other than Existence Lock or Shared Lock
- the parent of that entry has any lock, other than Existence Lock

- the destination library or mart has any lock, other than Existence Lock

Lock Behavior

When you edit a catalog entry, locks are applied automatically to appropriate levels in the catalog to prevent other users from editing the entry. When the edit is complete, the locks are removed or downgraded automatically.

The following scenarios apply to locks when you edit a catalog entry:

- When you load a model, Shared Lock is applied to the model and Existence Lock is applied to the parent entry up to the mart. After the model is loaded, Shared Lock is replaced with Existence Lock.
- When you initially save a model, Update Lock is applied to the model. After the model is saved, Update Lock is replaced with Existence Lock.
- When you incrementally save a model, Update Lock is applied to all the versions created between the opened version and the newly created version. After the model is saved, Update Lock is replaced with Existence Lock.
- When you delete a model, Exclusive Lock is applied to the model. After the model is deleted, the lock is dropped.
- When you delete a user, all the locks that the user had applied are deleted.
- When you rename a library, Update Lock is applied to the library. After the library is renamed, the lock is removed.
- When you load models for version compare, Shared Lock is applied to the root model. After the model is loaded, Shared Lock is removed.
- When you merge or import objects during version compare, Update Lock is applied to the root model. When the merge or import is complete, Update Lock is removed.

Appendix A: CA ERwin Data Modeler Workgroup Edition Performance

This section contains the following topics:

[Optimize the Performance](#) (see page 161)

[Reindex the Database](#) (see page 162)

[Run the Database Statistics](#) (see page 167)

Optimize the Performance

The performance of CA ERwin Data Modeler Workgroup Edition depends on many factors. This appendix outlines some steps you can take to improve your performance. The five main components where a slow down can occur are the database, the server, the network, the client PC, and the CA ERwin Data Modeler Workgroup Edition software.



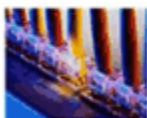
Database

- Reindexing
- Statistics
- Tuning



Server

- RAM
- Speed (GHz)
- CPU
- Disk space
- Dedicated to CA ERwin WE or shared by multiple applications?



Network

- LAN or WAN?
- Speed
- Throughput
- Traffic



Client Machine

- RAM
- Speed (GHz)
- CPU
- Disk space and virtual memory



Software

You should regularly reindex the database and run the database statistics. Sometimes running the database statistics alone does not affect the performance, however it is good practice to run the database statistics on a regular basis to ensure the maximum performance of your database.

If you have many domains in a model, they consume a lot of memory and file space. Having too many domains can slow down CA ERwin Data Modeler Workgroup Edition. If you need to use many domains, we suggest you create a template model to house them, and then import the specific domains that you need, to each of your individual models. If you are using the domains to enforce unique attribute or column naming standards, you can alternatively use the ERwin Glossary for that purpose.

Check the CA ERwin Data Modeler Workgroup Edition Release Notes for the latest system requirements. Greater CPU speed, and more RAM and disk space result in better performance.

Reindex the Database

Over a period of time, database indexes become fragmented. A large number of inserts and deletes can lead to significant performance degradation. The scripts provided in this appendix rebuild the indexes and fix them. In some cases, it can make a significant difference in the mart performance.

We recommend that you reindex your mart database nightly or during off-peak hours. As the index is recreated, the process can temporarily degrade the performance of your database. You can create an automated batch job to do the reindex. You should also reindex the database after a large model merge, a save to the mart, and right after a conversion of the mart when upgrading to a later version of the software.

Run the Oracle DBMS Reindex Script

As the new index is being built, it coexists with the old index in the database. For this reason, you should plan for enough space to store both the old index and the new index. When the index is rebuilt, the new index becomes available, the old index is dropped, and the space is reclaimed by the database. If you encounter any errors while rebuilding the indexes, re-run the statements. If you require more space to rebuild those specific indexes, add more storage to your index tablespace, and then try rebuilding those specific indexes again.

To run the Oracle DBMS reindex script

1. Create the mmreindex.ora script and copy it locally.
2. Edit the script and replace 'MODELMART' with the name of the mart schema-owner and 'MMINDEX' with the name of the mart index tablespace. Save your changes.
3. Connect to SQL*PLUS as the user SYS.
4. Grant the 'ALTER ANY INDEX' privilege to the mart Schema Owner.
5. Run your Oracle query tool and execute the following at the SQL prompt:
`GRANT ALTER ANY INDEX TO <MART SCHEMA OWNER>;`
6. Disconnect user SYS and Connect to your Oracle query tool as the Schema Owner.
7. Execute the following Script at the SQL Prompt:
`@c:\mmreindex.ora`

Example: Oracle Reindex Script (MMReIndex.ora)

```
-----  
-  
-- Object:   MMReIndex.ora  
-- Desc:    Use this Procedure to ReIndex the MM ORACLE Repository whenever a  
--          Merge/Save of big model is done to MM  
--          Limitation(s) is specific to Oracle Releases >= 817  
-- For ORACLE DBMS < 8i Modify the script to Use NOPARALLEL  
-- NOTE:    You will need to change MMOWNER to the Mart schema owner name.  
--          You will need to change MMINDEX to the Mart index tablespace.  
-- Oracle indexes are not self-balancing. They become fragmented after a large  
-- number of INSERTs and DELETES which may lead to significant performance  
degradation.  
-- This script rebuilds the Mart indexes and cures them.
```

```
-----  
----  
set pagesize 1000  
set linesize 2000  
set verify off  
set feedback off  
set heading off  
spool c:\mmreindex.ora  
SELECT      'ALTER INDEX ' || USER || '.' || INDEX_NAME ||  
' REBUILD PARALLEL NOLOGGING COMPUTE STATISTICS TABLESPACE MMINDEX;'  
FROM    DBA_INDEXES  
WHERE   OWNER = UPPER ('MMOWNER')  
AND     (INDEX_NAME like 'XPK%' or INDEX_NAME like 'XAK%'  
        or INDEX_NAME like 'XIE%')  
order by index_name;  
spool off  
set heading on  
set pagesize 24  
set verify on  
set feedback on  
@c:\mmreindex.ora  
/
```

Example: Microsoft SQL Server DBMS Reindex Script

Example: Microsoft SQL Server DBMS reindex script

```
-- Drop the Procedure appropriately
IF EXISTS (SELECT name FROM sysobjects WHERE name = N'usp_ReIndex' AND type = N'P')
Begin
    DROP PROCEDURE usp_ReIndex
    Print 'Procedure Dropped'
End
GO

-----
---
-- Object:    usp_ReIndex
-- Desc:      Use this Procedure to ReIndex the MM SQL REpository whenever a
--            Merge/Save of big model is done to MM
-- Change History:
-- Name       Date          Reason
-----
-
CREATE PROCEDURE usp_ReIndex AS
    Declare
        @Cmd  varchar(2000),
        @Name Sysname
    DECLARE tmp_Reindex CURSOR LOCAL FOR
        SELECT Name
        FROM   SysObjects
        WHERE  Type = 'U'
    OPEN tmp_Reindex
    FETCH NEXT FROM tmp_Reindex INTO @Name
    WHILE @@FETCH_STATUS = 0
    BEGIN
        Print 'Processing Index for Table ' + @Name
        Set @cmd = 'DBCC DBREINDEX (' + @Name + ', ''', 0)'
        Exec (@Cmd)
        If @@Error <> 0
            Print 'Error Reindexing Table ' + @Name
        FETCH NEXT FROM tmp_Reindex INTO @Name
    END
    Close tmp_Reindex
go
-- ReIndex the DB
Exec usp_ReIndex
```

Example: Sybase DBMS reindex script (MMReIndex.ora)

```
-- Drop the Procedure appropriately
IF EXISTS (SELECT name FROM sysobjects WHERE name = N'usp_ReIndex' AND type = N'P')
Begin
    DROP PROCEDURE usp_ReIndex
    Print 'Procedure Dropped'
End
GO
```

```
-----
---
-- Object: usp_ReIndex
-- Desc: Use this Procedure to ReIndex the MM SQL REpository whenever a
-- Merge/Save of big model is done to MM
-- Change History:
-- Name Date Reason
-----
```

```
CREATE PROCEDURE usp_ReIndex AS
Declare
    @Cmd varchar(2000),
    @Name Sysname(100) ,
    @output_str varchar( 255 )
DECLARE tmp_Reindex CURSOR FOR
    SELECT name
    FROM sysobjects
    WHERE type = 'U'
OPEN tmp_Reindex
FETCH tmp_Reindex INTO @Name
WHILE ( @@sqlstatus = 0 )
BEGIN
    SELECT @output_str = 'Processing Index for Table '+@Name
    Print @output_str
    --Set @Cmd = 'DBCC REINDEX ( ' + @Name + ' )'
    --Exec (@Cmd)
    DBCC REINDEX (@Name )
    If @@Error <> 0
Begin
    SELECT @output_str = 'Processing Index for Table1 '+@Name
    Print @output_str
end
    FETCH tmp_Reindex INTO @Name
END
Close tmp_Reindex
go
EXEC usp_ReIndex
```

Troubleshooting the Reindexing Script

Symptom:

The query tool responds as given below:

```
no rows selected
not spooling currently
```

Solution:

You do not have the correct name for the mart schema-owner. Get the correct user name, replace 'MODELMART' with the user name, and re-run the script.

Run the Database Statistics

Database statistics show the distribution of the data in the database, and how the data is stored. When a database executes a query, it uses an optimizer to determine the best path to access the data. The optimizer relies on execution plans that specify the order in which the database accesses the tables and the exact steps used to pull the data. The database bases the creation of the execution plans on the database statistics.

As the data grows and changes, the statistics quickly become outdated and no longer reflect the true condition of the database. As a result, the execution plans no longer apply and the optimizer makes poor decisions when processing queries. You should run statistics regularly to ensure the maximum performance of your database and, therefore, your mart. We recommend that you run the database statistics nightly, and create an automated batch job to simplify the process.

Example: Oracle Statistics Commands

Note: In the following examples, the schema owner name is 'MODELMART'

To collect statistics for the mart (does not include the index statistics):

```
EXEC DBMS_STATS.gather_schema_stats ('MODELMART',DBMS_STATS.AUTO_SAMPLE_SIZE);
```

To collect statistics for the mart (includes the index statistics):

```
EXEC DBMS_STATS.gather_schema_stats (ownname => 'MODELMART',
cascade =>true, estimate_percent => dbms_stats.auto_sample_size);
```

To delete the statistics:

```
EXEC DBMS_STATS.delete_schema_stats ('MODELMART');
```

Chapter 8: Workgroup Modeling Reports

Modelers typically work from a common set of libraries and models, and share information about these objects with other users. One way to share information is by using reports, which details the information and definitions for a model.

Generate predefined reports to view the contents of specific libraries and models, view the changes and conflicts for specific models, and view the security structure for the database. Use either the standard or customized reports to see detailed information for a specific model.

Note: Some reports described can only be generated by the Mart Administrator. You can generate Mart reports only if you have installed Crystal Report Developer Edition on the computer on which you want to generate the reports.

CA ERwin Data Modeler Workgroup Edition includes the following predefined reports:

Global Reports

The following table describes the global reports that you can run against Mart:

Report Name	Description
Attributes By Name	Provides information for a specified attribute name--logical and physical, including its library, and its owning diagrams and entities.
Derived Models	Provides a list of all models that are created using the Derive Model process.
Entities by Name	Provides information for a specified entity name--logical and physical, including library, its owning diagrams, and owned attributes or columns.
Libraries	Provides a list of all libraries in Mart.
Library Model Entity	Provides a hierarchical list of all entities in models and libraries.
Library Model Version	Provides a list of the versions of all models.
Library Model	Provides a list of the models in the selected libraries.
Mart Domains	Provides a list of all domains used by diagrams, sorted by diagram and library. Includes the domain name, domain parent, domain parent name, and domain data type.
Models with Subject Areas	Provides a list of all Subject Areas and the diagrams in each Subject Area in a model.
Models	Provides a list of all the models in the entire Mart. The report includes details such as the number of entities and attributes, and the total number of model objects.

Report Name	Description
Subject Areas	Provides the list of all subject areas, including subject area members.
User Defined Properties	Provides a list of all user-defined properties for the current open model, including UDP name, class name, and default value.
Users	Provides a list of all users assigned to Mart, including user numeric ID and server login.

Model Validation Reports

The following table describes the model validation reports that can be run against models in the mart:

Report Name	Description
Attributes without Definition	Provides a list of all attributes that have no definition text for the specified model.
Attributes without Domains	Provides a list of all attributes that have no domain association for the specified model.
Entities whose Primary Keys are all Foreign Keys	Provides a list of entities in all the models that have foreign keys as their primary keys.
Entities without Definitions	Provides a list of all entities that have no definition text for the specified model.
Entities without Primary Keys	Provides a list of all entities that have no primary key for the specified model.
Many to Many Relationships	Provides the details of many-to-many relationships available in all the models in the Mart.
Model Attributes without Definition	Provides a list of all attributes that have no definition for the specified model.
Unattached Entities	Provides a list of entities that are not the parent of a relationship. The report includes information for all the models in Mart.

Diagram Reports

The following table describes the reports that can be run against diagrams:

Report Name	Description
Definitions	Provides the definition information of the specified diagram.

Report Name	Description
Domains	Provides the domain usage of the specified diagram.
Entities	Provides the entity information for the specified diagram.
Entity Attributes	Provides the details of all the entities and their attributes in the selected model.
Entity PK FK	Provides the details of primary and foreign keys for all the entities in the selected model.
Entity Subtypes	Provides the details of all the entity subtypes for the selected model.
Entity Supertypes	Provides the details of all the entity supertypes for the selected model.
Entity Table Attribute Column Datatype Nulls	Provides a list of all data type null values for entity attributes and table columns for the selected model.
Model Subject Areas	Provides a list of the Subject Areas and their members for the selected model.
Index Members	Provides a list of the index member usage for the specified diagram.
Index Properties	Provides the index properties for all objects in use for the specified diagram.
Relationships	Provides a list of relationship usage for the specified diagram.

Model Locks Report

Provides information about the lock status of all models in the selected library.

View and manage report results in the CA ERwin Reports Viewer. Use the predefined reports available on the Tools menu, use either the Bulk Editor to view and edit object properties in the current model and export results to a CSV file, or use the Query Tool to execute predefined or customized SQL SELECT statements against a model.

Model Contents by Class

The Model Contents by Class report includes ERwin objects available in the selected model based on their class.

Bulk Editor

The Bulk Editor provides the selection, validation, and maintenance of model object metadata, permits reusable customization (option sets), and realtime access to model changes. Export results or selected rows to a CSV file. You can use the Bulk Editor to edit a small set of properties over a large number of objects. Changes and updates are immediately committed as you make them, field by field.

Query Tool

The Query Tool is used to query the repository through executing SQL SELECT statements against a local model or a model in the mart. You can use the Query Tool to create your own .QRY report file. Save your option set locally to the model or as an XML file. Export your results to a CSV file. You can execute a query against the objects and properties in the model, the metadata defining those objects and properties, and the action log that records the changes that are made to your model during the modeling session. You can create new queries or paste text from another source (such as a .SQL file) into a query. Although the Query Tool provides a built-in query interface in CA ERwin Data Modeler, you can also use any third-party reporting tool that has ODBC capability to query CA ERwin Data Modeler modeling data.

Generate a Global Report

Global reports provide information about Mart including its libraries, models, model objects, and diagrams. To run the Global Reports, you must have Mart level permissions.

Note: Connect to Mart to view the available reports and to generate a global report.

Follow these steps:

1. Click Tools, Mart Reports, Global Reports, then select one of the following reports:

Attributes By Name

Provides information for a specified attribute name--logical and physical, including its library, and its owning diagrams and entities.

Derived Models

Provides a list of all models that are created using the Derive Model process.

Entities by Name

Provides information for a specified entity name--logical and physical, including library, its owning diagrams, and owned attributes or columns.

Libraries

Provides a list of all libraries in the mart.

Library Model Entity

Provides a hierarchical list of all entities in models and libraries.

Library Model Version

Provides a list of the versions of all models.

Library Model

Provides a list of the models in the selected libraries.

Mart Domains

Provides a list of all domains used by diagrams, sorted by diagram and library. Includes the domain name, domain parent, domain parent name, and domain data type.

Models with Subject Areas

Provides a list of all Subject Areas and the diagrams in each Subject Area in a model.

Models

Provides a list of all the models in the entire Mart. The report includes details such as the number of entities and attributes, and the total number of model objects.

Subject Areas

Provides the list of all subject areas, including subject area members.

User Defined Properties

Provides a list of all user-defined properties for the current open model, including UDP name, class name, and default value.

Users

Provides a list of all users assigned to Mart, including user numeric ID and server login.

The Database Login dialog opens.

2. Enter login information and click Connect.

Depending on the report requested, either the generated report opens in the viewer or you are prompted to enter additional parameters for the report. Once these parameters are entered, the report opens.

The report is generated and opens in the viewer.

3. Use the toolbar options to export or print the report.
4. Click Exit on the File menu.

The Report Viewer closes.

Generate a Model Validation Report

Run a model validation report to validate your model to ensure complete and accurate model information. To run the Model Validation Reports, you must have Mart level permissions.

Note: Connect to Mart to generate a model validation report.

Follow these steps:

1. Click Tools, Mart Reports, Model Validation Reports, then select one of the following reports:

Attributes without Definition

Provides a list of attributes that have no definition text in all the models in the Mart.

Attributes without Domains

Provides a list of attributes that are not owned by any domains in all the models in the Mart.

Entities whose Primary Keys are all Foreign Keys

Provides a list of entities in all the models that have foreign keys as their primary keys.

Entities without Definitions

Provides a list of entities that have no definition text in all the models in the Mart.

Entities without Primary Keys

Provides a list of all entities that have no primary key in all the models in the Mart.

Many to Many Relationships

Provides the details of many-to-many relationships available in all the models in the Mart.

Model Attributes without Definitions

Provides a list of all attributes that have no definition in all the models in the Mart.

Unattached Entities

Provides a list of entities that are not the parent of a relationship. The report includes information for all the models in Mart.

The Database Login dialog opens.

2. Enter login information and click Connect.

Depending on the report requested, either the generated report opens in the viewer or you are prompted to enter additional parameters for the report. Once these parameters are entered, the report opens.

The report is generated and opens in the viewer.

3. Use the toolbar options to export or print the report.
4. Click Exit on the File menu.

The Report Viewer closes.

Generate a Diagram Report

Diagram reports provide information about the current diagram open in the mart. To run the Model Validation Reports, you must have Mart level permissions.

Note: Connect to Mart to view the available reports and to generate a diagram report.

Follow these steps:

1. Click Tools, Mart Reports, Diagram Reports, then select one of the following reports:

Definitions

Provides the definition information of the specified diagram.

Domains

Provides the domain usage of the specified diagram.

Entities

Provides the entity information for the specified diagram.

Entity Attributes

Provides the details of all the entities and their attributes in the selected model.

Entity PK FK

Provides the details of primary and foreign keys for all the entities in the selected model.

Entity Subtypes

Provides the details of all the entity subtypes for the selected model.

Entity Supertypes

Provides the details of all the entity supertypes for the selected model.

Entity Table Attribute Column Datatype Nulls

Provides a list of all data type null values for entity attributes and table columns for the selected model.

Model Subject Areas

Provides a list of the Subject Areas and their members for the selected model.

Index Members

Provides a list of the index member usage for the specified diagram.

Index Properties

Provides the index properties for all objects in use for the specified diagram.

Relationships

Provides a list of relationship usage for the specified diagram.

The Database Login dialog opens.

2. Enter login information and click Connect.

Depending on the report requested, either the generated report opens in the viewer or you are prompted to enter additional parameters for the report. Once these parameters are entered, the report opens.

The report is generated and opens in the viewer.

3. Use the toolbar options to export or print the report.
4. Click Exit on the File menu.

The Report Viewer closes.

Generate a Model Lock Report

The Model Lock report provides information about the lock status of all the models in a library.

Note: Connect to Mart to view the available reports and to generate a model lock report.

Follow these steps:

1. Click Tools, Mart Reports, Other, Model Lock.

The Database Login dialog opens.

2. Enter login information and click Connect.

3. Enter additional parameters for the report.

The report is generated and opened in the viewer.

4. Use the toolbar options to export or print the report.

5. Click Exit on the File menu.

The Report Viewer closes.

Generate a Report on Model Contents by Class

The Model Contents by Class report includes ERwin objects available in the selected model based on their class.

Note: Connect to Mart to view the available reports and to generate a class-wise content report.

Follow these steps:

1. Click Tools, Mart Reports, Other, Model Contents by Class.
The Database Login dialog opens.
2. Enter login information and click Connect.
3. Enter additional parameters for the report.
The report is generated and opened in the viewer.
4. Use the toolbar options to export or print the report.
5. Click Exit on the File menu.
The Report Viewer closes.

The Report Viewer

The Report Viewer lets you view reports created with Crystal Reports. It opens when you select a report to generate on the Tools menu. It provides a way to view the report you selected to run, and work with options for exporting and printing the report.

Use the following features to work with the Report Viewer:

Export Report

Specifies to export the report to a folder you specify. After it is exported, you can share the report with others. The default format is as a Crystal Reports report (.rpt), but you can specify one of the following additional formats:

- Adobe PDF (.pdf)
- Microsoft Excel (97-2003) (.xls)
- Microsoft Excel (97-2003) Data-Only (.xls)
- Microsoft Word (97-2003) (.doc)
- Microsoft Word (97-2003) - Editable (.rtf)
- Rich Text Format (.rtf)
- XML (.xml)

Print Report

Specifies to print the report.

Refresh

Specifies to refresh the information in the report.

Toggle Parameter Panel

Lets you toggle the display of the parameter panel. The panel shows the input parameters as provided to generate the report. If the report contains no parameters, the view is empty.

Toggle Group Tree

Lets you toggle the display of the tree hierarchy of the objects on which you generated the report.

Go to First Page

Goes to the first page of the report.

Go to Previous Page

Goes to the previous page of the report.

Go to Next Page

Goes to the next page of the report.

 **Go to Last Page**

Goes to the last page of the report.

 **Find Text**

Opens a Find dialog so you can enter a text string to search within the report.

 **Zoom**

Lets you specify the magnification of the report text.

Chapter 9: Generate the Current Diagram Picture

In addition to using the integration of Crystal Reports to create a picture report of the model diagrams, you can also use the Tools menu in CA ERwin Data Modeler to generate a picture report of diagrams.

To generate the current diagram picture

1. Open the diagram for which you want to generate a picture.
2. Click Diagram Picture, Generate Current Diagram Picture on the Tools menu.

The Save As dialog opens.

3. Enter a name and location for the file and click Save.

The generated file is saved as an .EMF (Enhanced Metafiles) image and the Save As dialog closes. To view or print the diagram image, use any image viewer program to open the file.

Appendix B: Microsoft SQL Server and Sybase Tuning Recommendations

This section contains the following topics:

- [Physical Tuning Parameters](#) (see page 181)
- [Server-Level Tuning Parameters](#) (see page 182)
- [Named Cache Configuration](#) (see page 182)
- [Database Tuning Parameters](#) (see page 183)
- [Database and Log Sizing](#) (see page 184)
- [How to Maintain an Efficient Database](#) (see page 184)

Physical Tuning Parameters

The mart is dynamic, with many queries and data manipulations performed with each model save and load. Although the Microsoft SQL Server and Sybase architectures differ in some ways, the basic operation and configuration of both server environments is the same.

The configuration changes that must be made to Microsoft SQL Server and Sybase for optimum performance with maximum fault tolerance and recoverability are provided.

Database Placement

CA ERwin Data Modeler Workgroup Edition mart databases are written to in bursts of activity. Stored procedures and bulk insert statements are used to minimize overhead when saving data to Microsoft SQL Server. To optimize performance, place the database on low activity Microsoft SQL Server files. If possible, place the log and data segments on different physical drives to reduce contention between log writes and database reads.

Data Redundancy

Make sure that you make a copy of the transaction log on a separate drive to maximize recoverability of the database. If the up-time of the database is considered critical, make a copy of the database and the transaction logs, and other Microsoft SQL Server files you consider important.

Server-Level Tuning Parameters

You should perform the following server-level tuning tasks:

- Configure Microsoft SQL Server to use as much memory as possible. Allocating more memory to the Microsoft SQL Server caching mechanisms means less physical reads from the disk and improved database query performance.
- Allow several megabytes of disk space for the procedure cache because CA ERwin Data Modeler Workgroup Edition uses many stored procedures.

The following table shows the recommended configuration parameters for a Microsoft SQL Server running CA ERwin Data Modeler Workgroup Edition:

Parameter Type	Recommended Value	Notes
memory (Sybase 15: "total memory")	512 MB minimum Note: 1 GB is recommended	More memory implies less physical I/O
procedural cache	Set the cache to grow to a fixed size, such as 50 MB or 100 MB.	CA ERwin Data Modeler Workgroup Edition is stored procedure-intensive

Named Cache Configuration

For Sybase systems, consider setting up a 4 KB pool for the default data cache. Sybase writes I/O to the log more often in 4 KB increments than in 2 KB increments (the default). You can set up a 4 KB I/O pool using `sp_poolconfig`, but you must restart the server to enable the 4 KB I/O writes to the log. Set the pool up as a smaller subset of the cache.

Note: Be careful when making changes to the data caching systems in Sybase. Monitor your changes with SQL Monitor or `sp_sysmon` to ensure that the changes you make do not starve the 2 KB I/O pool or other caches.

The following shows the recommended size of the 4 KB I/O pool for small, medium, and large servers:

Server Size	Data Cache Size	4 KB I/O Pool Size
Small	128 MB	4 MB
Medium	512 MB	6 MB
Large	1 GB	10 MB

Database Tuning Parameters

You can make database tuning adjustments in three different areas:

- Transaction log
- Threshold procedures
- Database options

Transaction Log

The transaction log keeps a before and after image of each change made in the database. Microsoft SQL Server keeps a transaction log for each database.

Back up the transaction log frequently. This keeps the transaction log small and reduces the amount of data lost in the event of a severe database corruption.

Threshold Procedures

For Sybase, enable a threshold procedure for the last-chance threshold to back up the log when it runs out of disk space.

Note: Because Microsoft SQL Server does not provide such an option, you must back up the log frequently to keep the log small.

The following shows a sample Sybase threshold action procedure:

```
create procedure sp_thresholdaction
@dbname char(40),
@segment_name char(40),
@space_left int,
@status int
as
/* make the thresholdaction procedure backup the log */
declare @backdevice varchar(255)
select @backdevice= '/u/backups/tranfile'+
convert(char(8),getdate(),4)
dump transaction mart to @backdevice
go
```

"trunc. log on chkpt" Option

To ensure maximum recoverability, do not enable the "trunc. log on chkpt" option, since the log is cleared automatically after each checkpoint operation. If the database device becomes damaged with the log device still active and this option is set, the database cannot be recovered using the log files since they are almost empty.

Database and Log Sizing

Since the database is a dynamic environment, allow plenty of space for the models you create. Tests have shown that models generate between 10 KB and 20 KB of data per entity during initial save times. Log overhead per object is approximately 15 KB to 21 KB per entity. Allocate 50 to 65 percent of the database size to the log to avoid running out of room in the log for a typical model save.

An average mart can range in size between 200 MB and 1 Gig. Size the transaction log accordingly. A 50 MB data device can store several large models (about 2,500 entities and 100,000 total objects), but keep in mind that the database becomes more flexible and has less storage space issues when the data device is large.

The following table shows the recommended database size and log size for small, medium, and large marts:

Database Size	Database Device	Transaction Log Device
Small	200 MB	100 MB
Medium	500 MB	200 MB
Large	1 GB	400 MB

How to Maintain an Efficient Database

To maintain an efficient database, perform the following maintenance tasks:

- Run UPDATE STATISTICS and execute sp_recompile frequently on every table in the database. This keeps the statistics up-to-date for the indexes, resulting in better overall performance.
- Periodically recreate the clustered indexes in the database to reduce fragmentation. Be sure to back up the database and transaction log daily.
- Run DBCC CheckDB(), DBCC CheckCatalog(), and DBCC CheckAlloc() or DBCC NewAlloc() on the database nightly, to check for corruption and inconsistencies in the database. Check the output of these queries and look for keywords like corrupt. Any problems detected by these commands are sent to the query output, so save the files and scan them regularly.

The following table shows maintenance tasks and the recommended frequency for performing these tasks:

Maintenance Task	Recommended Frequency	Reason
DBCC Checkdb	Nightly	Check for corruption in databases.
DBCC NewAlloc	Weekly	Check for allocation corruption (Microsoft SQL Server only).
DBCC CheckAlloc	Weekly	Check for allocation corruption (Microsoft SQL Server only).
DBCC CheckCatalog	Weekly	Check for system table inconsistencies.
UPDATE STATISTICS	Nightly	Recreates the statistics page for each index.
EXEC sp_recompile	Nightly	Tells which stored procedures have changed.
Backup Database	Weekly	Full backup of database should be done at least weekly, if not nightly.
Backup Transaction Log	Daily	Backing up the transaction log daily saves all committed transactions and clears the log.

DBCC Commands

Use the following DBCC commands to perform maintenance tasks on the database:

```
DBCC CheckDB(mart)
go
DBCC CheckAlloc(mart)
go
DBCC CheckCatalog(mart)
go
```


Appendix C: Oracle Tuning Recommendations

This section contains the following topics:

[Recommended Disk Configurations](#) (see page 187)

[Database Configuration](#) (see page 188)

[Storage Parameters](#) (see page 193)

Recommended Disk Configurations

Oracle servers are available on many different platforms ranging from PCs to mainframes. To support the wide range of hardware platforms and application requirements, Oracle servers have a number of configuration options that you can use to tailor the behavior of an Oracle database. You can also use these configuration options to tailor your database. Some of the options documented in this guide only apply to specific Oracle versions. For further information, see the appropriate Oracle documentation.

If the Oracle server is not dedicated to the CA ERwin Data Modeler Workgroup Edition, as database administrator you must be careful to balance the requirements of all users on the server. This is particularly true for database servers that support OLTP (On Line Transaction Processing) applications that require tight response characteristics.

The layout of Oracle database files on physical disk drives plays a major role in the performance of the database. When used with CA ERwin Data Modeler Workgroup Edition, Oracle performs large bursts of database operations (fetches, inserts, updates, and deletes) in a short period of time. This usage pattern often requires Oracle to perform a significant amount of disk I/O operations. For good performance, it is important that as many I/O operations as possible be performed in parallel. This enables Oracle to retrieve data faster during fetches and to write data faster during inserts, updates, and deletes.

To maximize parallel I/O access, split the Oracle database files across many physical disks. Ideally, you should place the database on four physical disks. If this is not possible, you can use three, two, or one disk systems.

Note: Installing Oracle on a single disk system causes significant performance degradation.

Database Configuration

Proper database configuration is essential to the smooth operation and good performance of an Oracle database. You can use the configuration options described to optimize the processing of your Oracle server.

Maximum Number of Processes

Oracle must be preconfigured at startup with a maximum number of processes that can access the database. The parameter that controls the maximum number of processes, called PROCESSES, is defined in the INIT.ora or INIT<SID>.ora file. It should be set to the maximum potential number of concurrent users plus seven. The additional seven are for Oracle background processes that must also access the database. Setting the number of processes at a lower value can prevent some users from accessing the server during peak usage times. Setting the number of processes at a higher value can waste a small amount of system memory resources.

Shared Pool

The shared pool is an area of Oracle memory that includes two main structures:

- The library cache, which stores parsed SQL and PL/SQL statements
- The dictionary cache, which stores the Oracle data dictionary (or Oracle metadata)

The SHARED_POOL_SIZE parameter is defined in the INIT.ora or INIT<SID>.ora file and is used to regulate the size of the shared pool. Set the SHARED_POOL_SIZE parameter to a minimum of 3500000 (3.5 million). Setting the shared pool to a smaller value can degrade performance, forcing Oracle to do disk I/O to retrieve objects that cannot fit in the shared pool. A larger shared pool may be required, depending on the size and number of models and the number of users.

Buffer Cache

The buffer cache serves as a memory cache for all data going to and from Oracle data files. When Oracle needs a block of data it first checks whether that block exists in the buffer cache. If it does, Oracle gets the data from the buffer cache—avoiding disk access. Having a large enough buffer cache lets the Oracle server bypass most I/O requests.

Buffer cache size is controlled by the `DB_BLOCK_BUFFERS` parameter defined in the `INIT.ora` or `INIT<SID>.ora` file. Set the buffer cache to a minimum of 4 MB. Values smaller than 4 MB force Oracle to do many more I/O requests and significantly degrades the performance. Values larger than 4 MB improve performance and should be used if memory is available.

Note: In Oracle, the `DB_BLOCK_BUFFERS` parameter is specified as a number of database blocks instead of actual size in bytes. To compute the value of `DB_BLOCK_BUFFERS`, divide the desired buffer cache size in bytes by the database block size defined by the `DB_BLOCK_SIZE` parameter in the `INIT.ora` or `INIT<SID>.ora` file.

Redo Log Files

Redo log files contain a record of all Data Manipulation Language (DML) commands (such as `INSERT`, `UPDATE`, and `DELETE` commands) performed on the database. As DMLs are performed, the Oracle engine writes them to sequential redo log files. Periodically, an Oracle background process retrieves the DMLs from the Redo log files and writes the actual changes to the Oracle tablespace files. This mechanism lets Oracle defer most of the I/O burden associated with DMLs to a background process that does not slow down the client processes.

Note: Oracle Redo log files are treated by the database engine as a ring. When one file fills up, the engine performs a log switch and starts writing to the next log file in the ring. When that log file fills, the engine switches again.

The number and size of the Redo log files is an important performance consideration. If the log files are too small or if there are not enough of them in the ring, Oracle may have to stall on a log switch. If this happens, the DMLs in the next log in the ring may not have been written to the tablespace files, and therefore the next log file has not been archived by the background ARCH process. For more information about Redo log archiving, see the Oracle documentation.

Redo log files are created when the database is created. However, Redo log files can be added or deleted at any time using Data Definition Language (DDL) statements.

You should have at least four Redo log files, each 2 MB in size. A smaller number of Redo log files or a smaller Redo log file size can cause I/O bottlenecks. If the disk space is available, using more than four Redo log files further reduces the chances of delayed log switches. Larger Redo log files improve performance, but care must be taken to adequately schedule checkpoints that write DMLs stored in the Redo logs to the tablespace files.

If the number of disks permits, you should mirror Redo log files by creating Redo log groups with two mirrored members per group. This offers the database some protection against single disk errors.

Increase Space in Redo Logs

The number and size of the Redo log files is an important performance consideration. Redo log files are created when the database is created.

To increase space in the Redo logs

1. Log in to Oracle using SQL*Plus as SYSDBA or SYSOPER and run the following script to create eight Redo logs that are 2 MB each:

```
rem -- parm1 -- temp dir

rem Generate creation script
SELECT 'ALTER DATABASE ADD LOGFILE '''
      || SUBSTR ( MEMBER , 1 , INSTR ( MEMBER , '\ ' , -1 , 1 ) )
      || 'REDO_11.LOG' SIZE 2M ;'
from V$LOGFILE
where ROWNUM = 1
and not exists ( SELECT 1 from V$LOGFILE where MEMBER like '%REDO_11.LOG' )
UNION

SELECT 'ALTER DATABASE ADD LOGFILE '''
      || SUBSTR ( MEMBER , 1 , INSTR ( MEMBER , '\ ' , -1 , 1 ) )
      || 'REDO_12.LOG' SIZE 2M ;'
from V$LOGFILE
where ROWNUM = 1
and not exists ( SELECT 1 from V$LOGFILE where MEMBER like '%REDO_12.LOG' )
UNION

SELECT 'ALTER DATABASE ADD LOGFILE '''
      || SUBSTR ( MEMBER , 1 , INSTR ( MEMBER , '\ ' , -1 , 1 ) )
      || 'REDO_13.LOG' SIZE 2M ;'
from V$LOGFILE
where ROWNUM = 1
and not exists ( SELECT 1 from V$LOGFILE where MEMBER like '%REDO_13.LOG' )
UNION
```

```

SELECT 'ALTER DATABASE ADD LOGFILE '''
      || SUBSTR ( MEMBER , 1 , INSTR ( MEMBER , '\ ' , -1 , 1 ) )
      || 'REDO_14.LOG' SIZE 2M ;'
from V$LOGFILE
where ROWNUM = 1
   and not exists ( SELECT 1 from V$LOGFILE where MEMBER like '%REDO_14.LOG' )
UNION
SELECT 'ALTER DATABASE ADD LOGFILE '''
      || SUBSTR ( MEMBER , 1 , INSTR ( MEMBER , '\ ' , -1 , 1 ) )
      || 'REDO_15.LOG' SIZE 2M ;'
from V$LOGFILE
where ROWNUM = 1
   and not exists ( SELECT 1 from V$LOGFILE where MEMBER like '%REDO_15.LOG' )
UNION
SELECT 'ALTER DATABASE ADD LOGFILE '''
      || SUBSTR ( MEMBER , 1 , INSTR ( MEMBER , '\ ' , -1 , 1 ) )
      || 'REDO_16.LOG' SIZE 2M ;'
from V$LOGFILE
where ROWNUM = 1
   and not exists ( SELECT 1 from V$LOGFILE where MEMBER like '%REDO_16.LOG' )
UNION
SELECT 'ALTER DATABASE ADD LOGFILE '''
      || SUBSTR ( MEMBER , 1 , INSTR ( MEMBER , '\ ' , -1 , 1 ) )
      || 'REDO_17.LOG' SIZE 2M ;'
from V$LOGFILE
where ROWNUM = 1
   and not exists ( SELECT 1 from V$LOGFILE where MEMBER like '%REDO_17.LOG' )
UNION
SELECT 'ALTER DATABASE ADD LOGFILE '''
      || SUBSTR ( MEMBER , 1 , INSTR ( MEMBER , '\ ' , -1 , 1 ) )
      || 'REDO_18.LOG' SIZE 2M ;'
from V$LOGFILE
where ROWNUM = 1
   and not exists ( SELECT 1 from V$LOGFILE where MEMBER like '%REDO_18.LOG' )
.
Spool &1.AddLog.ORA
/
Spool Off
COMMIT ;

SELECT 'ALTER SYSTEM SWITCH LOGFILE ;' from V$LOG where ROWNUM < 5
.
Spool &1.SwtchLog.ORA
/
Spool Off
COMMIT ;

```

```
rem Generate Deletion script
SELECT 'ALTER DATABASE DROP LOGFILE GROUP ' || TO_CHAR ( GROUP# ) || ' ;' from
V$LOG where BYTES < 2097152
.
  Spool &1.DropLog.ORA
/
Spool Off
COMMIT ;

@@&1.AddLog.ORA
$DeL &1.AddLog.ORA
COMMIT ;

@@&1.SwtchLog.ORA
$DeL &1.SwtchLog.ORA
COMMIT ;

@@&1.DropLog.ORA
$DeL &1.DropLog.ORA
COMMIT ;
```

2. Run the following query to verify the new Redo log configuration:

```
SQLWKS> select group#, status, bytes from v$log;
```

Note: Oracle does not let you drop an older Redo log file that is still ACTIVE. If you must drop an older Redo log file that is still ACTIVE, drop that log file manually.

Redo Log Buffer

The Redo log buffer is an area in memory that Oracle uses to collect DMLs before they are written to the Redo log files. The log file write occurs when either a transaction commits or a Redo log buffer is full. Because CA ERwin Data Modeler Workgroup Edition tends to generate fairly large transactions, use a log buffer size of 163840 bytes. (For single disk Oracle installations, use a log buffer size of 655360 bytes.) Setting the Redo log buffer size to a value smaller than the recommended value can degrade I/O performance. Using a larger value requires more memory.

The Redo log buffer size is defined using the LOG_BUFFER parameter in the INIT.ora or INIT<SID>.ora file.

Checkpoints

An Oracle checkpoint is an event that posts DMLs from the Redo log files to the tablespace files. Checkpoints always occur after a Redo log file switch and can also be configured to occur at predefined time intervals. For CA ERwin Data Modeler Workgroup Edition, which generates large transactions, checkpoints should occur only after log switches to minimize I/O.

To ensure a checkpoint only after a log switch, *do not* set the LOG_CHECKPOINT_INTERVAL and LOG_CHECKPOINT_TIMEOUT parameters in the INIT.ora or INIT<SID>.ora file.

Storage Parameters

Object storage parameters in Oracle determine the amount of space allocated for each object in the database. Setting these parameters correctly is critical to both operation and performance of the database. Incorrect storage allocations can cause a database object to run out of space, which prevents you from saving models to the repository. Inefficient selection of storage parameters can lead to performance problems by forcing Oracle to do time-consuming space management operations during DML statement execution.

Recommendations for storage parameter values differ based on the size of your model:

- Small data models: 1 to 50 Entities
- Medium data models: 51 to 100 Entities
- Large data models: over 100 Entities

Rollback Segments

Rollback segments contain undo information for all changes performed by noncommitted transactions. Rollback segments are a shared resource used by all active transactions in the database. When a transaction starts, Oracle binds that transaction to a particular rollback segment. As DMLs in the transaction execute, rollback segment space is used. For large transactions, rollback segments may need to allocate new extents as the transaction continues. When the transaction ends, a properly configured Oracle database releases the additional rollback extents so that they can be used for other rollback segments. To ensure that the additional rollback extents are released, configure the OPTIMAL parameter for each rollback segment.

Use a maximum of five transactions per rollback segment by setting the TRANSACTIONS_PER_ROLLBACK_SEGMENT parameter in the INIT.ora or INIT<SID>.ora file. Use the following rollback segment storage parameters for small, medium, and large models:

Model Type	Initial Extent Size	Next Extent Size	Optimal Size
Small	1 MB	1 MB	~ 2 MB x (# of transactions)
Medium	6 MB	6 MB	~ 12 MB x (# of transactions)
Large	6 MB	6 MB	~ 12 MB x (# of transactions)

Note: The “# of transactions” is the maximum number of simultaneous CA ERwin Data Modeler Workgroup Edition connections to Oracle.

In Oracle it is common to see the following error statement when the Rollback logs are not set up optimally:

ORA-01562 failed to extend rollback segment number string

Set Optimal Configuration for the Rollback Logs

For large transactions, rollback segments may need to allocate new extents as the transaction continues. When the transaction ends, a properly configured Oracle database releases the additional rollback extents so that they can be used for other rollback segments. To ensure that the additional rollback extents are released, configure the OPTIMAL parameter for each rollback segment.

To set the optimal configuration for the rollback logs of large databases

1. Log in to Oracle as SYS or SYSTEM and run the following query and check the result to view the current configuration of the Rollback Segments:

```
SQLWKS> select SEGMENT_NAME, INITIAL_EXTENT, NEXT_EXTENT, MIN_EXTENTS,
MAX_EXTENTS, STATUS from dba_rollback_segs;
```

The result is:

SEGMENT_NAME	INITIAL_EX	NEXT_EXTEN	MIN_EXTENT	MAX_EXTENT	STATUS
SYSTEM	51200	51200	2	121	ONLINE
RB_TEMP	102400	102400	2	121	OFFLINE
RB1	2097152	2097152	2	121	ONLINE
RB2	2097152	2097152	2	121	ONLINE
RB3	2097152	2097152	2	121	ONLINE
RB4	2097152	2097152	2	121	ONLINE
RB5	2097152	2097152	2	121	ONLINE
RB6	2097152	2097152	2	121	ONLINE
RB7	2097152	2097152	2	121	ONLINE
RB8	2097152	2097152	2	121	OFFLINE
RB9	2097152	2097152	2	121	OFFLINE
RB10	2097152	2097152	2	121	OFFLINE
RB11	2097152	2097152	2	121	OFFLINE
RB12	2097152	2097152	2	121	OFFLINE
RB13	2097152	2097152	2	121	OFFLINE
RB14	2097152	2097152	2	121	OFFLINE
RB15	2097152	2097152	2	121	OFFLINE
RB16	2097152	2097152	2	121	OFFLINE

18 rows selected.

Note: In this example, there are sixteen rollback segments with 2 MB INITIAL EXTENT, 2 MB NEXT EXTENT, and MAX EXTENTS of 121 MB.

2. Run the following query for each Rollback Segment:

```
alter rollback segment rb1 offline;
drop rollback segment rb1;
create public rollback segment rb1
tablespace rollback_data
storage (initial 6M
next 6M
minextents 2
maxextents 121
optimal 12M);
alter rollback segment rb1 online;
alter rollback segment rb2 offline;
drop rollback segment rb2;
create public rollback segment rb2
tablespace rollback_data
storage (initial 6M
next 6M
minextents 2
maxextents 121
optimal 12M);
alter rollback segment rb2 online;
```

<Repeat for each Rollback Segment>

This query sets the optimal Rollback Segment configuration to 6 MB INITIAL EXTENT, 6 MB NEXT EXTENT, 2 MB MIN EXTENT, 121 MB MAX EXTENT, and 12 MB OPTIMAL.

3. Run the following query to verify the Rollback segment configuration changes:

```
SQLWKS> select SEGMENT_NAME, INITIAL_EXTENT, NEXT_EXTENT,
MIN_EXTENTS,MAX_EXTENTS, STATUS from dba_rollback_segs;
```

The result is:

SEGMENT_NAME	INITIAL_EX	NEXT_EXTEN	MIN_EXTENT	MAX_EXTENT	STATUS
SYSTEM	51200	51200	2	121	ONLINE
RB_TEMP	102400	102400	2	121	OFFLINE
RB1	6291456	6291456	2	121	ONLINE
RB2	6291456	6291456	2	121	ONLINE
RB3	6291456	6291456	2	121	ONLINE
RB4	6291456	6291456	2	121	ONLINE
RB5	6291456	6291456	2	121	ONLINE
RB6	6291456	6291456	2	121	ONLINE
RB7	6291456	6291456	2	121	ONLINE
RB8	6291456	6291456	2	121	ONLINE
RB9	6291456	6291456	2	121	ONLINE
RB10	6291456	6291456	2	121	ONLINE
RB11	6291456	6291456	2	121	ONLINE
RB12	6291456	6291456	2	121	ONLINE
RB13	6291456	6291456	2	121	ONLINE
RB14	6291456	6291456	2	121	ONLINE
RB15	6291456	6291456	2	121	ONLINE
RB16	6291456	6291456	2	121	ONLINE

18 rows selected.

Tablespaces

To improve performance you can create more than one tablespace for indexes. Then, after you install the software, you can move some indexes to the other tablespaces.

The following table lists the suggested initial sizes for DATA and INDEX tablespaces:

Tablespace	Small	Medium	Large
DATA	200 MB	500 MB	1 GB
INDEX	200 MB	250 MB	500 MB

DATA and INDEX tablespaces with these initial sizes can accommodate at least ten models or versions.

Appendix D: Sample Files

This section contains the following topics:

[Sample workers.properties File](#) (see page 200)

[Sample isapi_redirect.properties File](#) (see page 201)

[Sample isapi_redirect.reg File](#) (see page 202)

[Sample uniworkers.properties File](#) (see page 202)

[Sample uriworkermap.properties File](#) (see page 203)

Sample workers.properties File

The workers.properties file includes the following parameters:

```
worker.list  
worker.<workername>.host  
worker.<workername>.port  
worker.<workername>.type  
worker.<workername>.connection_pool_size
```

The descriptions of the parameters are as follows:

workers.list

Lists all the workers that are defined. When you start the web server, the plug-in instantiates these workers.

worker.<workername>.host

Defines the IP address of the computer where Tomcat (WA-OP) is installed.

worker.<workername>.port

Defines the port that the AJP workers inside Tomcat listen to. By default, AJP13.Workers listen to port 8009.

worker.<workername>.type

Defines the type of worker. The type of the worker can be ajp13, ajp14, jni, lb, or status.

worker.<workername>.connection_pool_size

Defines the number of connections made to AJP back-end.

The following is a sample workers.properties file:

```
# This file provides minimal jk configuration properties needed to  
# connect to Tomcat.  
#  
# The workers that jk should create and work with  
#  
worker.list=lb,jk-status  
#  
# Defining a worker named node1 and of type ajp13  
#  
worker.node1.type=ajp13  
worker.node1.host=localhost
```



```
worker.node1.port=8009
#
# Defining a load balancer
#
worker.lb.type=lb
worker.lb.balance_workers=node1
#
# Define status worker
#
worker.jk-status.type=status
```

Sample isapi_redirect.properties File

The following is a sample isapi_redirect.properties file:

```
extension_uri=/jakarta/isapi_redirect.dll

# Full path to the log file for the ISAPI Redirector
log_file=<path to the native_iis folder>\native_IIS\logs\isapi_redirect.log

# Log level (debug, info, warn, error or trace)
log_level=info

# Full path to the workers.properties file
worker_file=<path to the native_iis folder>\native_IIS\workers.properties

# Full path to the uriworkermap.properties file
worker_mount_file=<path to the native_iis
folder>\native_IIS\uriworkermap.properties
```

In this example, *jakarta* refers to the virtual directory you have added before you created the ISAPI filter.

Sample isapi_redirect.reg File

The following is a sample isapi_redirect.reg file:

```
REGEDIT4
```

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Apache Software Foundation\Jakarta Isapi  
Redirector\1.0]
```

```
"extension_uri"="/jakarta/isapi_redirect.dll"
```

```
"log_file"="<path to the native_iis folder>\native_IIS\logs\isapi.log"
```

```
"log_level"="debug"
```

```
"worker_file"="<path to the native_iis folder>\native_IIS\workers.properties"
```

```
"worker_mount_file"="<path to the native_iis  
folder>\native_IIS\uriworkermap.properties"
```

In this example, *jakarta* refers to the virtual directory you have added before you created the ISAPI filter.

Sample uniworkers.properties File

The following is a sample uniworkers.properties file:

```
/MartServer/*=node1
```

Sample uriworkermap.properties File

The following is a sample uriworkermap.properties file:

```
# This file provides sample mappings for example wlb
# worker defined in workermap.properties.minimal
# The general syntax for this file is:
# [URL]=[Worker name]
/*=lb
#
# Mount jkstatus to /jkmanager
# For production servers you will need to
# secure the access to the /jkmanager url
#
/jk-manager=jk-status
```