Honeywell

Experion

Enterprise Model Builder

User's Guide

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Notices and Trademarks

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About This Document

This document describes how to use the Enterprise Model Builder application to build and administer the Enterprise Model in Experion or EBI systems. The Enterprise Model provides a means of organizing the system around the key entities in the customer's enterprise such as assets, material, activities and people.

Release Information

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References

The following list identifies all documents that may be sources of reference for material discussed in this publication.

Document Title

Contacts

World Wide Web

The following Honeywell web sites may be of interest to Process Solutions customers.

Honeywell Organization	WWW Address (URL)
Corporate	*http://www.honeywell.com*
Honeywell Process Solutions	*http://hpsweb.honeywell.com*

Telephone

Contact us by telephone at the numbers listed below.

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Symbol Definitions

The following table lists those symbols used in this document to denote certain conditions.

Symbol	Definition
	**ATTENTION:** Identifies information that requires special consideration.
	**TIP:** Identifies advice or hints for the user, often in terms of performing a task.
	**REFERENCE -EXTERNAL:** Identifies an additional source of information outside of the bookset.
	**REFERENCE - INTERNAL:** Identifies an additional source of information within the bookset.
CAUTION	Indicates a situation which, if not avoided, may result in equipment or work (data) on the system being damaged or lost, or may result in the inability to properly operate the process.
	**CAUTION**: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices. **CAUTION** symbol on the equipment refers the user to the product manual for additional information. The symbol appears next to required information in the manual.
	**WARNING**: Indicates a potentially hazardous situation, which, if not avoided, could result in serious injury or death. **WARNING** symbol on the equipment refers the user to the product manual for additional information. The symbol appears next to required information in the manual.

Symbol	Definition
	**WARNING, Risk of electrical shock**: Potential shock hazard where HAZARDOUS LIVE voltages greater than 30 Vrms, 42.4 Vpeak, or 60 VDC may be accessible.
	**ESD HAZARD:** Danger of an electro-static discharge to which equipment may be sensitive. Observe precautions for handling electrostatic sensitive devices.
	**Protective Earth (PE) terminal**: Provided for connection of the protective earth (green or green/yellow) supply system conductor.
	**Functional earth terminal**: Used for non-safety purposes such as noise immunity improvement. NOTE: This connection shall be bonded to Protective Earth at the source of supply in accordance with national local electrical code requirements.
	**Earth Ground**: **Functional earth connection.** NOTE: This connection shall be bonded to Protective Earth at the source of supply in accordance with national and local electrical code requirements.
	**Chassis Ground**: Identifies a connection to the chassis or frame of the equipment shall be bonded to Protective Earth at the source of supply in accordance with national and local electrical code requirements.

Contents

Tables

Figures

Enterprise Model Builder

The Enterprise Model Builder is the application used to build, edit and download an Enterprise Model in Experion or EBI systems. The enterprise model provides a means of organizing the system around the key entities in the customer's enterprise, such as assets, material, activities and people.

Using the Enterprise Model Builder you can:

- Create and construct an Asset model
- Create and construct Alarm groups
- Load asset model and alarm group configurations to the servers.
- Import/Export Asset models and alarm group files

Before you Begin

If you are not familiar with the Experion Enterprise Model or the Enterprise Model Builder application, read the following topics that provide conceptual, planning and guideline information about building an enterprise model:

- Experion Server and Client Planning Guide, Section: Assets and asset models. Provides concept, planning and design information for creating an enterprise model.
- Experion Server and Client Configuration Guide, Section: Configuring the enterprise model– Describes the various components of the enterprise model and outlines the tasks necessary to build the enterprise model.

Using Enterprise Model Builder

This section includes links to information that you can reference for:

Topic	Link
Accessing Enterprise Model Builder	Click Here
Guidelines for Using Enterprise Model Builder	Click Here
Naming Conventions in the Enterprise Model	Click Here
Set System Name	Click Here
Define Servers	Click Here
Load System Model	Click Here
Create and Configure Assets	Click Here
Load Asset model	Click Here
Create and Configure an Alarm Group	Click Here
Administering Enterprise Model Database (EMDB)	Click Here
Generate Reports	Click Here
Load Alarm Groups	Click Here
Migration	Click Here
Error Messages and Troubleshooting	Click Here
Parameter Reference	Click Here

Additional references

Other reference documents provide additional information about the concepts of the enterprise model and how it is implemented in Experion.

- Administration and Startup Guide– Describes how to perform routine administrative and housekeeping tasks required to maintain a reliable Experion system. Instructions for using the dbadmin utility are provided for backup and restore functions to the Enterprise Model database.

Naming conventions in the Enterprise Model

All entities in the Enterprise Model (systems, servers, assets and points) have a tag name which is a unique name used by the system to identify that entity. In addition to the tag name, entities also have an Item Name and an Enterprise Model Name (also referred to as a Full Item Name) which provides a more structured way of identifying entities.

Item Name

Item Name is a property that is given to all tagged objects in the system. It is a means to provide a more descriptive name to an entity, rather than using just a tag name for identifying an entity or object. Item name does not have to be unique within a system, but it must be unique among the children of the same containment parent. In Enterprise Model Builder, when you create an asset or alarm group, a default item name is given to that item. You can then enter another name to easily identify the item within the enterprose model.

Enterprise Model name, (Full Item Name)

The enterprise model name is comprised of a set of individual names, one for each individual entity. In many cases the structure of the name used to name entities in a model is defined by the structure of the model itself, as is the case for the asset model. For comparison, the enterprise model name is similar to the pathnaming convention that is used for defining files within folders and directories in a Windows environment.

In Enterprise Model Builder the full item name has the following general form:

```
[/SystemName][/Model]/TopLevelEntity/Entity/.../Entity
```

The *SystemName* refers to the name of the DSA system which the particular enterprise model includes. If the system name is not specified, then the local system is assumed. If the model name is not specified, then the asset model is assumed.

As an example, the following name refers to an agitator asset in the 1st precipitator on Train 1 in precipitation:

```
/Assets/Precipitation/Train1/Precipitator1/Agitator
```

Item names must be unique amongst the children of a particular asset.

Alarm groups can be referenced similarly as follows:

```
/AlarmGroups/AlarmGroup1
```

Tag name

Points and alarm groups can be given an enterprise model name when associated with assets in the asset model. This allows the points/alarm groups to be identified by names that are more meaningful to users of the system than only tag names.

All enterprise model entities also have a unique tag name (point name) that identifies the entity throughout the system. There are cases in which it is more convenient to identify a point or entity directly by its tag name. The system allows either tag names or enterprise model names to be used to identify points and entities.

The name for point tags spans the entire DSA system and the system assumes that point tag names are unique throughout the system. However, there are cases where point tag names may not be unique. For example, when two LCN systems on separate Experion servers are integrated into a DSA system, the LCN systems may contain duplicate tag names. A similar situation can occur when two separate existing Experion servers are first integrated in a DSA system.

Support for duplicate tag names

In order to discuss duplicate tag name support, we need to distinguish between two different types of points. “Server-owned points” are points that are “owned” by a particular server. Examples are analog, status, and CDA points. “System-owned points” are points that are “owned” by the system as a whole (which may span several servers). Examples include asset and alarm group points.

Duplicate tag names for “server-owned points” are supported so long as they exist on separate servers. Duplicate tag names for “system-owned points” are supported so long as they exist in separate systems. To distinguish between two “server-owned points” with duplicate tag names, the tag name must be pre-pended with the server alias. To distinguish between two “system-owned points” with duplicate tag names, the tag name must be pre-pended with the system name.

To reduce the possibility of clashes with enterprise model names, the colon character (‘:’) is used when pre-pending the server or system name to the tag name. Note that a “system-owned point” can never have the same tag name as a “server-owned point”.

Example of a tag name for a “server-owned point”

```
"AS01HSCWENDY:FIC123"
```

Example of a tag name for a “system-owned point”

```
"Mighty River Hydro:TANK01"
```

For “server-owned points” where the server alias is not specified the local server is assumed. Similarly, for “system-owned points” where the system name is not specified the local system is assumed.

As an option you can set a server wide option to indicate that duplicate tag names are not allowed. If this option is selected, then tag name insertion fails whenever a duplicate is detected and an alarm is raised (which is consistent with current system behavior). If you enable this option but duplicate tags already exist, then an error message is displayed informing you that you must first remove all of the duplicates from the system. This option is enabled by default.

Duplicate tag name enforcement

The Enterprise Model Builder is responsible for ensuring that the tag names of all assets and alarm groups are unique. When an alarm group is created, it may reference one or more points which have duplicate tag names. In order to resolve this ambiguity, the EMB stores these referenced tag names pre-pended with either the system name or the server name as appropriate. If the Point Browser is used to pick the tag names that belong to an alarm group, then it will return the pre-pended tag name when appropriate. If you type in a tag name without pre-pending it and there happens to be duplicates, then an error is raised by the Experion server when the download is attempted.

Guidelines when using Enterprise Model Builder

In General

- Enterprise Model Builder is installed as part of server installation. Once installed, you define the users on the server that will have access to EMB.
- Up to 10 servers can be added for access to EMB in a system.
- The Enterprise Model Database, EMDB (which is separate from other engineering and system databases), resides on the server.
- Asset models and alarm groups can be created and configured off-line much the same way as control strategies can be configured in Control Builder. Later, the asset model files can be loaded to the servers.

Asset model / Alarm group restrictions

- An asset model can contain up to 4,000 individual assets.
- Since the asset model is a hierarchical arrangement of assets, a model can have up to 10 levels defined. For example, an asset can have children associated with it nine levels deep. Although it is practical to have no more than five levels.
- Up to 1,000 assets can be designated as assignable within a system model.
- Up to 5000 alarm groups can be defined within a system model.
- The hierarchy in an alarm group can be up to 5 levels deep.

Client node restrictions

- EMB can be installed on client nodes so that up to 4 users can access and use EMB.
- Each client node may run one asset configuration and one alarm group configuration simultaneously from the same client node.
- Up to a total of 6 instances of Control Builder and EMB can be running on a workstation at once. For example, you may have 3 instances of Control Builder open and 3 instances of EMB on the same client node. Or any combination of the two applications that total 6.
- Up to 4 alarm group configurations may be run from different client nodes simultaneously.

Accessing Enterprise Model Builder

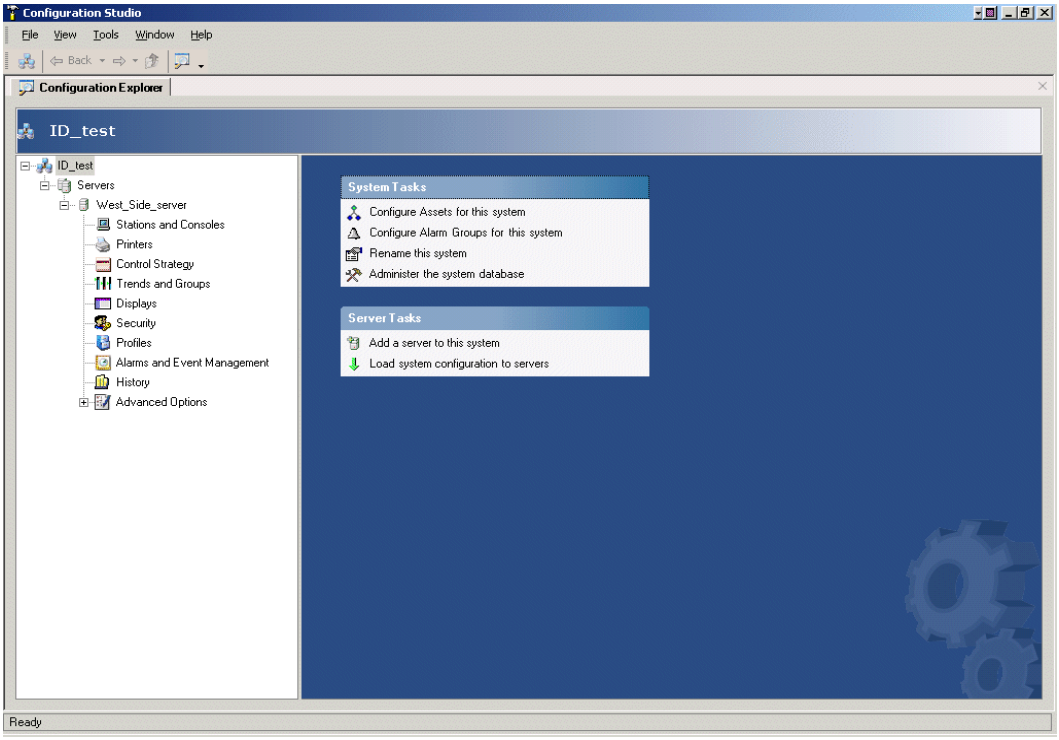
Access to Enterprise Model Builder is through the Configuration Studio. Some of the higher level tasks associated with the enterprise model are performed within Configuration Studio.

For example, if you want to:

- Set or Rename the System Name
- Add/Remove Servers from the system
- Edit Server parameters
- Load System Model Configuration to servers
- Administer the system database, (Enterprise Model Database, EMDB)

You can initiate these tasks directly from Configuration Studio as shown in the following figure.

Configuration Studio User Interface



Set system name (Rename System)

Description

When Enterprise Model Builder is installed on the server, a default name is given to the system name which then can be changed. The system name must be unique as it is used by the cluster or all of the servers that are a part of the enterprise model.

The system name, which is prefixed to the asset or point name, can be used to distinguish assets/points in one cluster (or system) from the assets/points in another cluster (or system).

Prerequisites

- At least one user has been defined on the server.
- You have launched Configuration Studio and connected to a system with a logon security level of Engineer or greater.

Considerations

Note that when you select 'Rename this system,' a lock occurs that prohibits any changes to the system configuration by any other users. Once the new name is validated, the lock is released.

Task

Follow the steps to change the system name.

Step	Action
1	From Configuration Explorer tab, select the System Task: **Rename this system** The SYSTEM:ROOT Block parameters form is displayed.
2	Enter the new system name (Tag Name), no more than 40 characters in length. Enter an Item Name (optional).
3	Press **Enter** or **OK**
4	Select the task: **Load System Configuration to servers…** to load the system configuration to all servers so that the new system name is distributed to all

Step	Action
	servers in the system. See Load System Model for a procedure and more information.

Add servers

Servers within the system are considered assets and are part of the system model. Servers are defined and added as part of the system model in Configuration Studio.

Prerequisites

- At least one user has been defined on the server.
- You have launched Configuration Studio and connected to a system with a logon security level of Engineer or greater.

Considerations

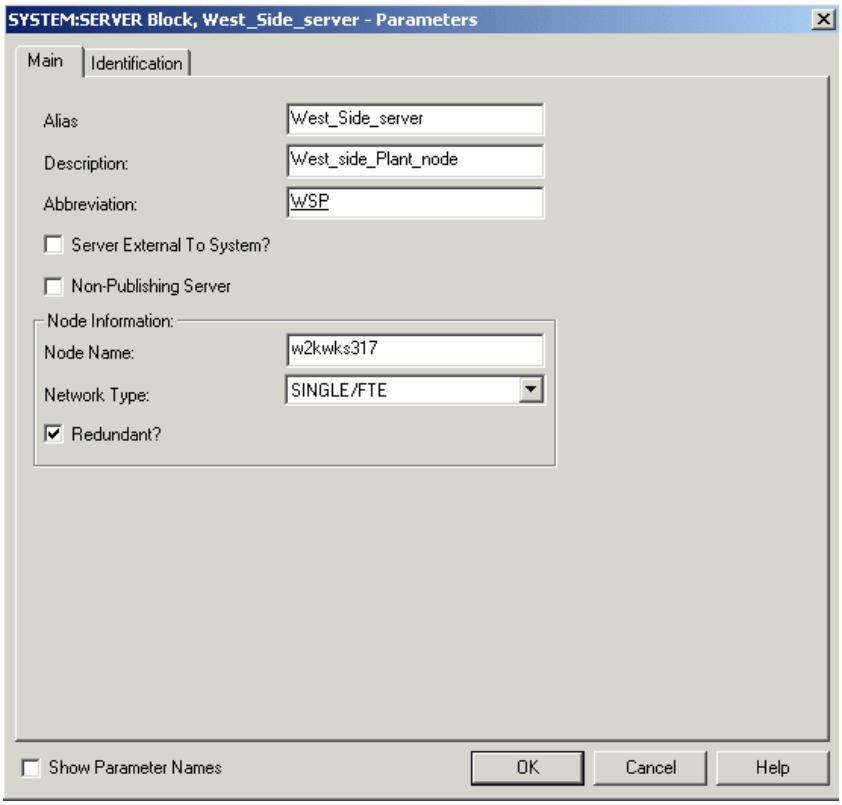
When adding a server, you can choose to import into the Enterprise Model Database any areas, assets and alarm groups defined on that server. Messages will prompt you on your choices.

Task

Use the following procedure to define system servers in the enterprise model.

Step	Action
1	In the Configuration Explorer tab select the Server Task **Add a server to this system.** The SYSTEM:SERVER Block parameters form is displayed.

Step	Action



2 The form contains a default tag name in the **Alias** field. Enter a unique Tag Name.

3 Enter a text description of the server in the **Description** field.

4 Enter an abbreviated name for the server in the **Abbreviation** field.

5 **Server External To System?** If so, check the box.

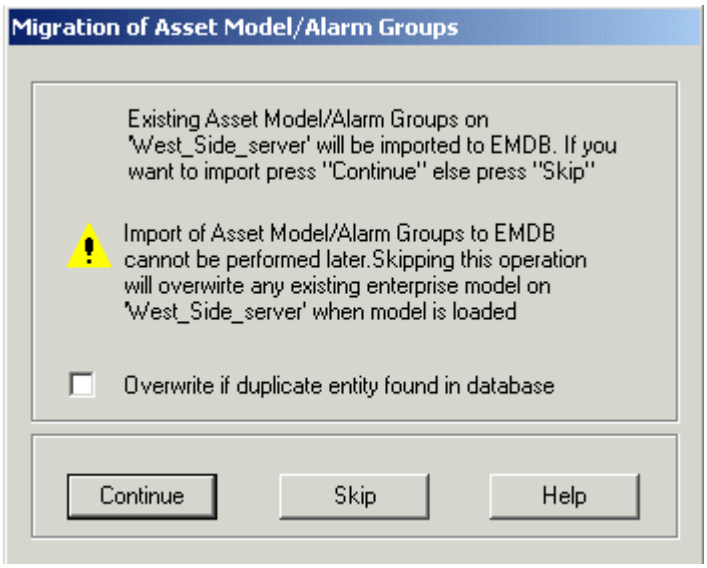
Note that adding a check to this box will gray out the Description and Abbreviation fields of the parameters form.

6 Add a check to designate the server as **Non-Publishing**.

For example, an E-server.

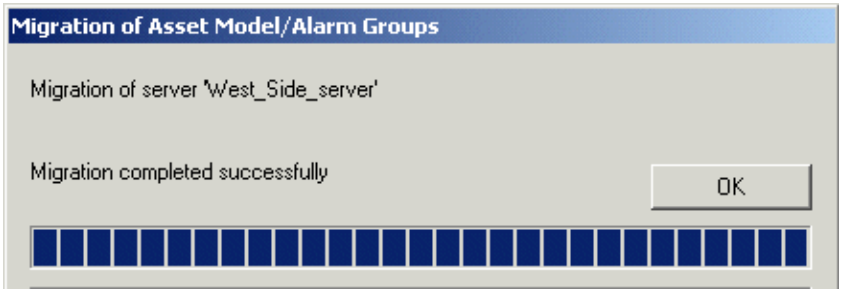
Step	Action
7	Enter the name of the server **Node** to where the system configuration will be loaded. (It can be the same as the server tag name.)
8	Select the **Network Type** from the drop down combo box in which the server is connected. (SINGLE/FTE, or DUAL)
9	Is the server redundant? If so, check the **Redundant?** box
10	Click on the '**Identification'** tab to display a second page of the property form. There are four **Comment** fields in which you can enter pertinent information about the server.
11	Click '**OK**'
12	A Server login dialog screen appears. Enter a valid username and Password. Choose **<None>** as your Domain. Click '**OK**.' A Migration of Asset Model/Alarm Groups dialog appears prompting you to choose whether to import the existing asset model/alarm groups on the newly created server into the Enterprise Model Database. You have the option to **Overwrite** an entity in the database **if a duplicate entity is found in the database** being imported. Uncheck the box if you want to be prompted when a duplicate is found. See Migration of Assets and Alarm Groups from Servers to EMDB for more information.

Step	Action



Note that if you choose 'Skip,' any existing areas, asset model and alarm groups on the server will be overwritten when a model is loaded to that server.

13 If you choose 'Continue,' the areas, asset model and alarm groups will be imported into the EMDB.



Once completed, the newly added server now appears in the System Model tree in Configuration Explorer.

If migration of an asset model or alarm groups fails, the server is not added to

Step	Action
	the system.
14	Repeat steps 1 through 13 in this procedure for each server to be defined in the system model.

Note that after a server is added to the system, an icon respresenting the server appears in the Studio Configuration window. Under the server icon is a compliment of categories (Stations and Consoles, Printers, Control Strategy, etc.). Selecting any of these categories displays related tasks that can be selected for server configuration. See the Server and Client Configuration Guide for details in performing those tasks.

Load system configuration

The system configuration load task downloads system configuration to all of the configured servers in the system. System configuration in EMDB consists of the following:

- System name
- All configured servers' configuration

Prerequisites

- You have launched Configuration Studio and connected to a system with a logon security level of Engineer or greater.
- Mngr passwords should be the same across all servers on a system.

Considerations

A system configuration load is performed during initial server configuration and anytime that system name or any server configuration has been changed. Note that the system configuration is also loaded to the servers as part of loading Asset model and Alarm Groups.

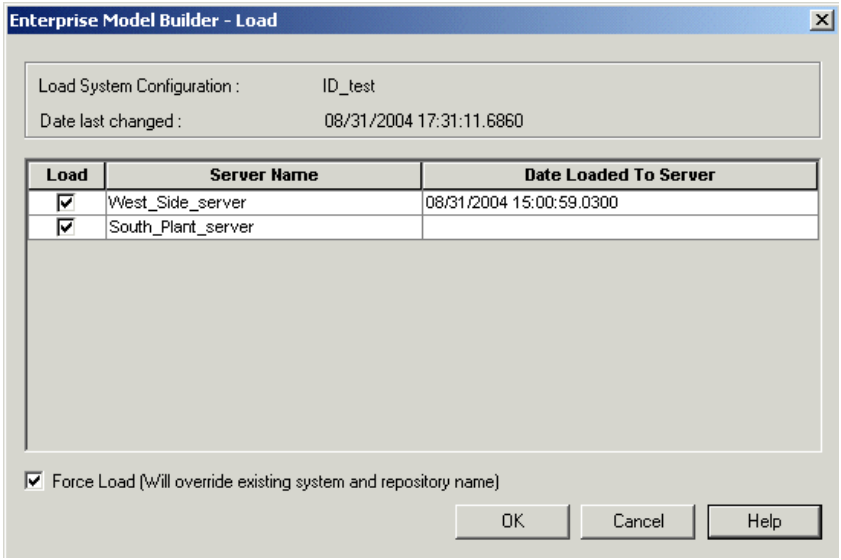
Load System Configuration is a task performed in the Configuration Explorer.

Note that when you click 'OK,' a lock occurs on all entities of the system, the servers selected for load and all configured servers. If the system or any of the servers selected to be loaded are already locked, an error is reported and the load operation is aborted. If any of the configured servers are already locked, an error is reported and the load operation is aborted. For example, another user may be using the server. See Load Status and Error Messages for more details.

Task

Use the following procedure to load a system configuration to selected servers.

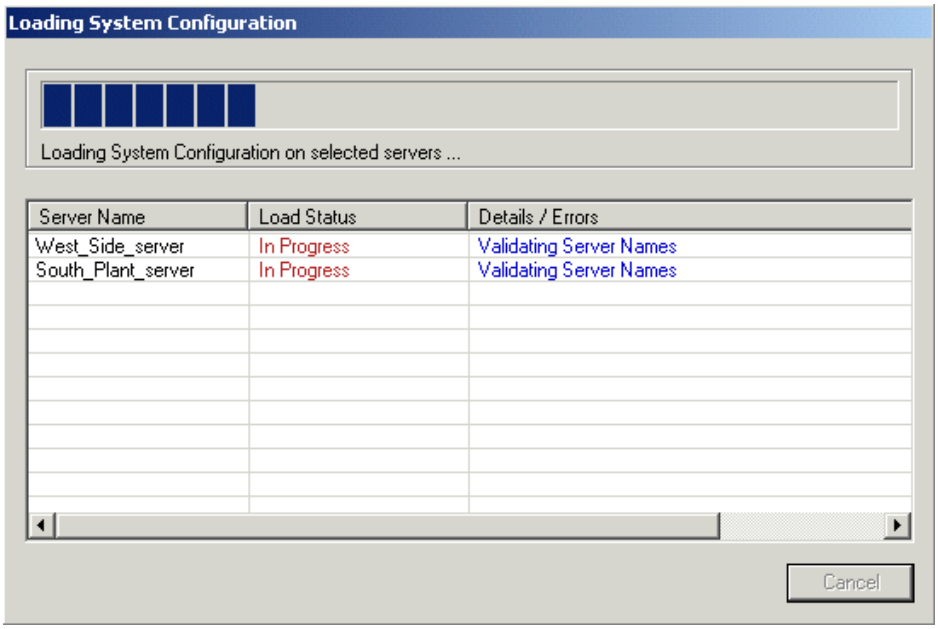
Step	Action
1	From the Configuration Explorer tab, select Server Task **Load system configuration to servers** The following dialog appears which allows you to select servers to be loaded.



	See Load system configuration dialog features for an explanation of the information presented in the Load dialog.
2	Select the servers that you want to download with the system configuration by adding a check mark in the **Load** Column next to the Server Name.
3	Uncheck any servers that you do not want to load at this time. Note: If no servers are selected for load, then the 'OK' button is disabled.
4	Click the '**OK**' button to begin the system configuration load operation on all selected servers. The Loading System Configuration dialog appears showing the name of all servers selected for load, the load status and a detail description for each

Step	Action

server. A progress bar is shown for the duration of the load operation.



The load operation validates all server names for all the configured servers in the system, on the server(s) selected for load.

If the load operation is successful without detection of any errors or warnings, a Load Status of “Complete” appears.

5 If any errors occur during the load operation, you should correct the fault and then perform the load procedure again. See Load Errors for more information.

Load system configuration dialog features

The following fields appear in the Load dialog and the Load System Configuration dialog:

Feature	Description
Load	Check boxes allow you select to which servers you want

Feature	Description
	to load. By default, all listed servers are selected.
Server Name	A list of all configured servers in the cluster or system. Remote servers are not shown. If any of the servers selected for load are redundant, the EMB loads to the primary server, then the changes are synchronized to the secondary server.
Date Loaded To Server	Indicates the date and time this model was last loaded to the server.
Force Load	Add a check to this box if you want to override the existing system and repository name in the selected servers.
Help	The Help button calls to open Knowledge Builder and display information about loading system configuration.
Details/Errors	Show the details relating to the Load Status. If errors occur, a message is displayed. See Error Messages for more details.

Creating and configuring assets

The first step in constructing an asset model is creating and configuring assets which are the objects (or entities) that make up the asset model.

Prerequisites

- You have launched Configuration Studio and connected to a system with a logon security level of Engineer or greater.
- You have already created a system model and configured servers in Configuration Studio.

Considerations

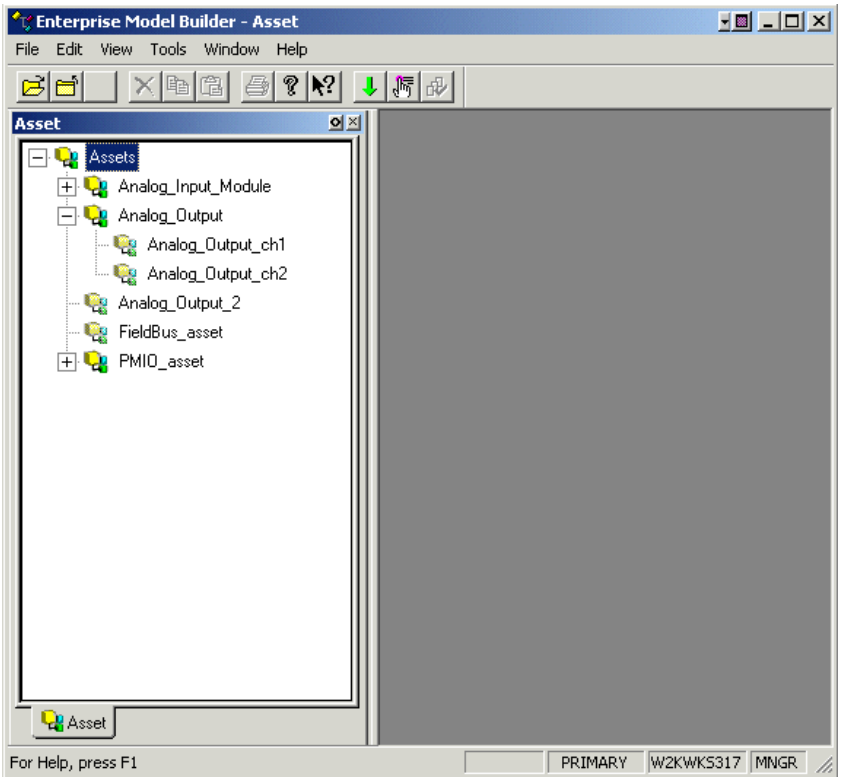
If you have migrated an existing system that contained areas, then these areas are converted to top level assets and appear in the asset model tree. See Migration for more details.

Note that when a new asset is created, it will appear as a child of the asset which was highlighted in the tree view. You can then click and drag the asset to the appropriate place in the model.

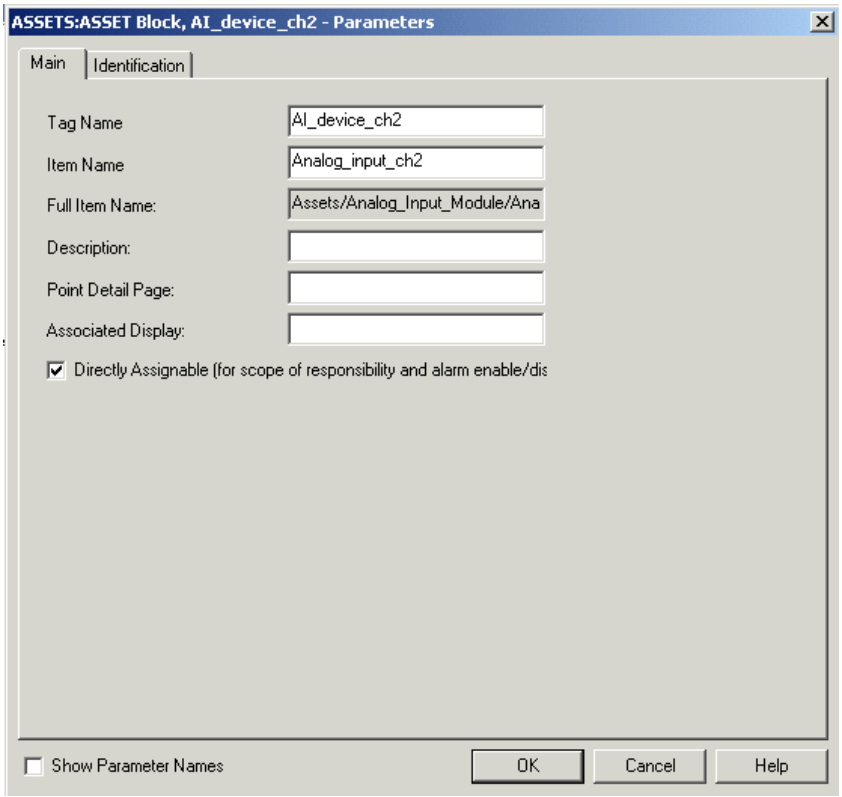
Task

Follow the procedure to create and configure new assets in the asset model.

Step	Action
1	In the Configuration Explorer tab select the top level asset in the System tree. Select the System Task **Configure Assets for this system**. The Enterprise Model Builder – Asset window appears as a separate window. The left side of the window shows a tree view of the asset model structure.
2	If a tree view window is not visible in the Asset window, click on the '**Open Tree**' icon  on the toolbar to open the asset model. The following figure shows an asset model tree view with several assets already defined.

Step	Action
	
3	Choose **File** > **New ASSET…** An ASSET Block Parameters form is displayed.

Step	Action



4 The form contains a default tag name. Enter a unique **Tag Name**.

5 The form contains a default **Item Name**. You can enter another name if you want.

6 Enter a text description of the asset in the **Description** field.

7 Enter the name of the **Point Detail Page** and **Associated Display** in the appropriate fields.

8 Check the box '**Directly Assignable (for scope of responsibility and alarm enable/disable)**' If you want the asset to be assignable to an operator, Station or alarm group.

For more information about assignable assets, see About assignable assets, or Planning your Asset Model for additional planning information.

Step	Action
	Note that the icons which represent assets designated as assignable are brighter in color than the icons of unassigned assets. See the figure in step 2 above.
9	Click on the '**Identification'** tab to display a second page of the property form. There are four **Comment** fields in which you can enter additional information about the server.
10	Click '**OK**' to create the asset which now appears in the Asset Model tree.
	**TIP** You can arrange assets within the asset model tree view according to your system specification simply by the click, drag and drop method.
11	Repeat steps 3 through 10 in the procedure for each asset to be defined in the asset model.
12	After configuring assets and building the asset model, perform a Load asset model and alarm groups to the servers in the system.

Creating and configuring alarm groups

Alarm groups provide a means to monitor a group of assets and or data points that are otherwise unrelated to one another in the asset model. Alarm groups are built using the parameters forms, and assets are associated with alarm groups by entering the asset tag name into the parameters form for the alarm group.

Note that alarm groups are referenced with other alarm groups through a containment relationship, where one alarm group is contained by another; (much like assets in the asset model). A set of alarm groups defined in a system effectively form an alarm group model, which is separate from the asset model.

Alarm groups are created and configured in the same way as assets. Assignable assets and data points then can be associated with the alarm group.

Prerequisites

- You have launched Configuration Studio and connected to a system with a logon security level of Engineer or greater.
- You have created an asset model and configured assets that are assignable using EMB.

- You have built and configured points, and associated them with assets using Quick Builder or Control Builder.
- Points and assets should be loaded.

Considerations

If you have migrated an existing system that contained alarm groups, then the alarm groups are added to the EMDB. See Migration for more details.

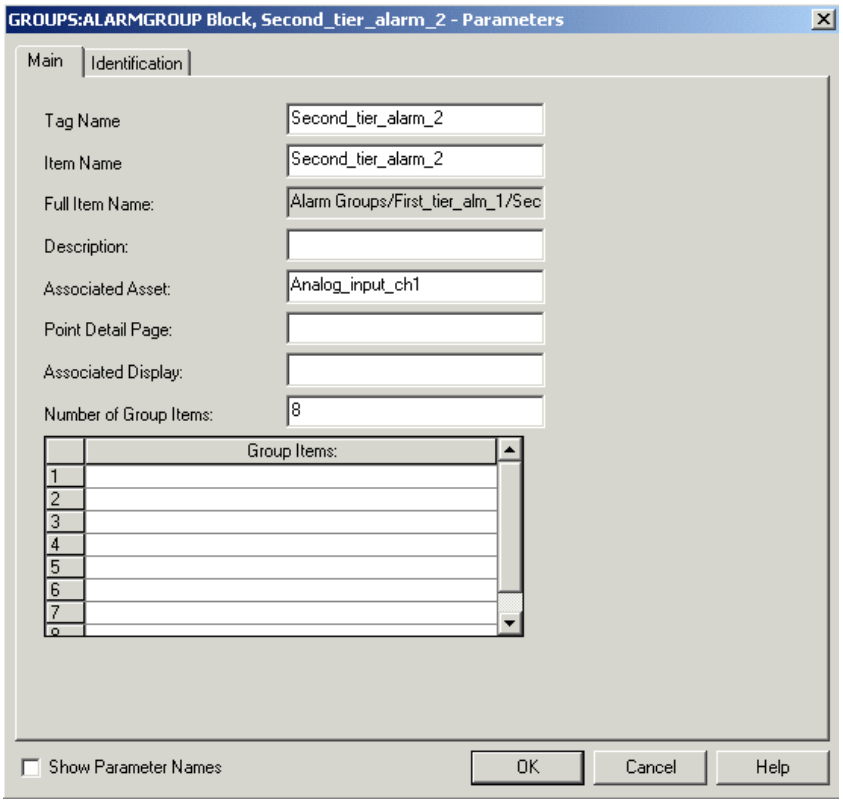
Note that when a new alarm group is created, it will appear as a child of the alarm group which was highlighted in the tree view. You can then click and drag the asset to the approporate place in the model.

Task

Follow the procedure to create and configure alarm groups for the system.

Step	Action
1	In the Configuration Studio Explorer tab select the top level asset in the System tree. Select the System Task **Configure Alarm Groups for this system**. The Enterprise Model Builder – Alarm Groups window appears as a separate window. The left side of the window shows a tree view of the alarm group model structure.
2	If a tree view window is not visible in the Alarm Group window, click on the '**Open Tree**' icon  on the toolbar to open the the Alarm Group model.
3	Choose **File** > **New ALARMGROUP…**, An Alarm Group Parameters form is displayed. The following figure shows an alarm group parameters form with several fields already defined.

Step	Action



4 The form contains a default tag name. Enter a unique **Tag Name**.

5 The form contains a default **Item Name**. You can enter another name if you want.

6 Enter a text description of the asset in the **Description** field.

7 Enter the tag name of the asset you want to associate with this alarm group in the **Associated Asset** field.

8 Enter the name of the **Point Detail Page** and **Associated Display** in the appropriate fields.

9 Enter the number of items, (assets and data points) that you want to be in this alarm group. Limit of 20 items.

Step	Action
10	Enter the tag names of the assets and data points that you want to include in this alarm group.
11	Click on the '**Identification'** tab to display a second page of the property form. There are four **Comment** fields in which you can enter additional information about the server.
12	Click '**OK**' to create the alarm group which now appears in the Alarm Group Model tree.
	**TIP** You can arrange alarm groups in the tree view according to your system specification simply by the click and drag method.
13	Repeat steps 3 through 12 in the procedure for each alarm group to be defined in the alarm group model.
14	After configuring the alarm groups and building the alarm group model, perform a Load asset model and alarm groups to the servers in the system.

Alarm Group icons

Alarm groups are represented in the tree view by the following icons:

Description	Icon
Alarm Groups	
Alarm Groups with multiple parents	

Loading asset model and alarm groups (Load Entire Model)

The asset model and/or alarm groups can be loaded to servers that are configured as part of the Enterprise Model.

The procedure is the same when loading either the asset model or alarm groups.

Prerequisites

- You have launched Configuration Studio and connected to a system with a logon security level of Engineer or greater.

- A system model has been created consisting of at least one server.
- You have an Enterprise Model Builder window open with either an asset model tree or alarm group tree displayed.
- An asset model or alarm groups have been created in Enterprise Model Builder for the system.

Considerations

The asset model and alarm groups can be loaded to the following server types:

- Experion Server
- Plant Reference Model (PRM) Server

This operation loads the entire asset model or alarm groups to the selected servers. The entire model includes the system configuration and all defined entities in the model, which includes the top-level asset or alarm group and all assets or alarm groups associated with that entity. Individual assets cannot be loaded, assets and alarms are loaded as a model.

ATTENTION

During the load operation, assets and points may temporarily belong to unassigned items in the Alarm Summary display. The tree view on the left of the display may show an incomplete model. Additionally, alarms may temporarily be raised against assets and points in the model showing a blank location field. These conditions should clear once the download is completed.

Note that when you click OK, a lock occurs on all entities of the Asset model and/or Alarm group and all configured servers selected for load. If the asset model or alarm group to be loaded is already locked, an error is reported and the load operation is aborted. If any of the configured servers are already locked an error is reported and the load operation is aborted. See Load Errors.

Task

Use the following procedure to load the asset model or alarm groups to selected servers.

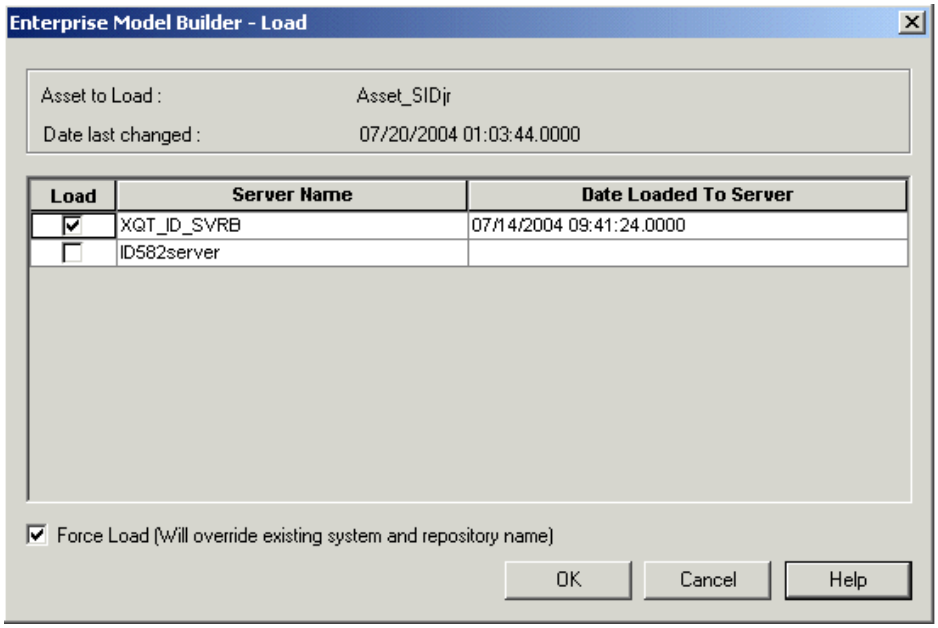
Step	Action
1	Select the menu and choose **Tools** > **Load Entire Model…** or Click on the Load icon  on the tool bar.

Step	Action

Also, you can select any asset or alarm group in the tree and right click.

Choose **Load Entire Model…**

The following Load dialog appears:



See Load Dialog features for an explanation of the information presented in the Load dialog.

2 Select the servers that you want to download with the asset model or alarm group by adding a check mark in the **Load** Column next to the Server Name.

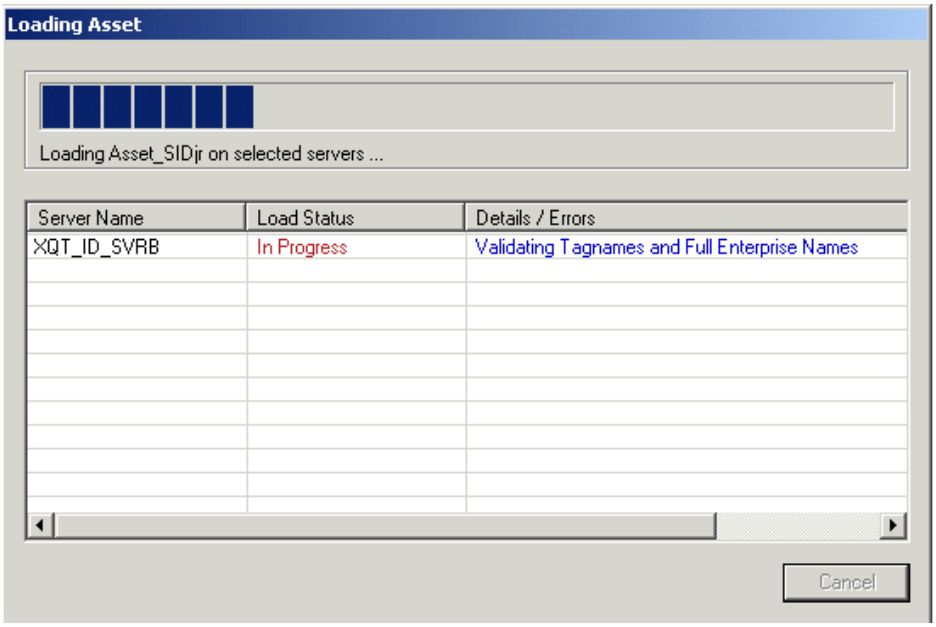
3 Uncheck any servers that you do not want to load at this time.

Note: If no servers are selected for load, then the '**OK**' button is disabled.

4 Choose whether or not to **Force Load** the servers. This check box allows the load to proceed even if the system name or repository name has been changed.

5 Click the '**OK**' button to begin the asset model load operation concurrently on all selected servers.

Step	Action
	The Loading Asset (or Alarm Group) dialog appears showing the name of the top-level asset (or alarm group) being loaded. A progress bar is shown for the duration of the load operation. The name of all servers selected for load, the load status and a detail description for each server also are shown. See figure.



During the load operation, the EMB validates the server names of all the configured servers in the system as well as the point and full item names of the asset model or alarm groups.

6 If the load operation is successful without detection of any errors or warnings, a Load Status of “Complete” appears.

If any errors occur during the load operation, you should correct the fault and then perform the load procedure again. See Load Errors for more information.

Load dialog features

The following information is given in the Load dialog:
Note that the Load Dialog is the same when loading alarm groups to server

Feature	Description
Asset to load:	The name of the asset or alarm group selected for loading.
Date Last Changed:	The date that the asset model was last revised or changed.
Load	Check boxes allow you select to which servers you want to load the asset model. By default, any servers that have not been loaded since the asset model has been changed (Date Last Changed) are selected for load.
Server Name	A list of all the configured servers in the cluster or system. Remote servers are not shown. If any of the servers selected for load are redundant, the EMB loads to the primary server, then the changes are synchronized to the secondary server.
Date loaded to Server	The date and time that selected asset model was loaded to the server. If this is the first time that the asset model is being loaded to the server, no date is shown.
Force Load (Override existing system and repository name)	A check in this box allows the load to proceed even if the system name or repository name has been changed.
Help	The Help button calls to open Knowledge Builder and display information about loading an asset model or alarm group.

Database Administration

Administration of the Enterprise Model Database (EMDB) consists of basic functions that are used to edit, delete, copy, move, import and export the parameters of entities defined in the EMDB, such as servers, assets or alarm groups. Other higher level administration functions, which include use of the dbadmin utility to backup and restore the database, are essential in maintaining the integrity of the EMDB.

EMDB Backup and Restore

The system utility DBADMIN is used to perform database backup and restore functions for the EMDB.

Note that in the case of redundant EMDB servers, backup and restore functions can be performed using the secondary server if necessary.

Prerequisites

- You have launched Configuration Studio and connected to a system with a logon security level of Engineer or greater.
- For redundant servers, ensure that primary and secondary EMDB servers are synchronized and replication is enabled.

Task

From the Configuration Studio Explorer tab, select the System Task

Administer the system database

The DBADMIN utility will open in a separate window enabling you to perform various database maintenance tasks. Information about using the DBADMIN utility is found in the Administration and Startup Guide in Knowledge Builder.

Edit, Copy, Delete, Import/Export

These functions are basic to configuring and changing the parameters of entities, asset models and alarm groups in the enterprise model. These include Edit, Delete, Copy, Move, Import and Export functions. Some of these functions are found under the Edit menu, or by right clicking on an asset or alarm group in the model.

Prerequisites

- You have launched Configuration Studio and connected to a system with a logon security level of Engineer or greater.
- An asset model and alarm groups has been created in Enterprise Model Builder for the system.

Edit

The Edit function allows you to change names and configuration parameters of assets and alarm groups when configuring the asset model or alarm groups.

Considerations

Any configuration parameters or names that you change during the edit session will appear as underlined so that you can see what changes were made.

Note that when you select 'Edit,' a lock occurs that prohibits any changes to the selected asset or alarm group by any other users. Once the form is closed, the lock is released. If the asset or alarm group is already locked, then a popup message appears to indicate that another user is accessing the form. You then have the option to open the form as read only.

Task

Step	Action
1	Select an asset or alarm group to edit.
2	Then either: • Use the menu and choose **Edit**-> **Properties …,** or • Right mouse menu and choose **Properties …,** or • Double click the Configuration Properties icon on the toolbar

Step	Action
3	The configuration parameters form will open for the asset or alarm group.
4	Make changes to any parameters which are available in the form.
	**TIP** To access a help topic associated with a parameter, select that parameter and then press F1.
5	Click OK to add the changes to the EMDB. Clicking Cancel will close the form without adding the changes to the database.

Rename

You can change the entity name of an asset or point name of alarm group without editing configuration parameters. The Rename function is available when configuring the asset model or alarm groups.

Considerations

ATTENTION

If you change the Entity Name of an asset or the Point Name of an alarm group, (either through the parameters form or by using the Rename function), a message will appear warning you of the impact of the name change.

Note that when you select 'Rename,' a lock occurs that prohibits any changes to the selected asset or alarm group by any other users. Once the rename is completed, the lock is released. If the asset or alarm group is already locked, then a popup message appears to indicate that another user is accessing the form.

Task

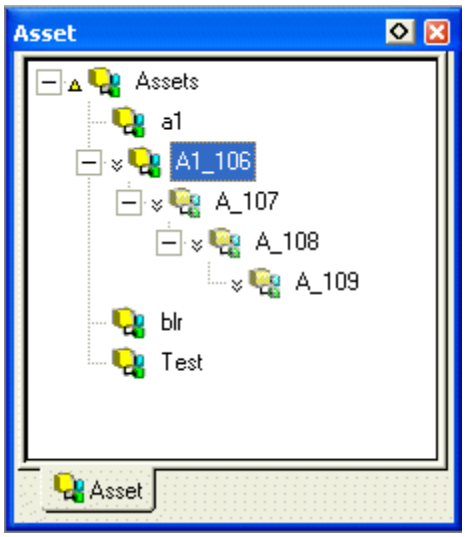
Step	Action
1	Select one entity from the tree view.
2	Use the menu and choose **Edit**->**Rename** ,or Press F2 button, or right mouse click menu and choose **Rename**.
3	An edit box in the tree pane appears and allows you to enter a different name.

Step	Action
4	Press **Enter**, or mouse click away from the edit box to complete the change.

Copy

The Copy function allows you to select one or more entities (assets and/or alarm groups) and then copy them to another location in the enterprise model. Note that if a selected asset contains assets which are children of the selected asset, the children are also copied.

You also can select more than one entity to copy at one time, which may result in multiple copys of selected entities. For example, consider the asset tree below.



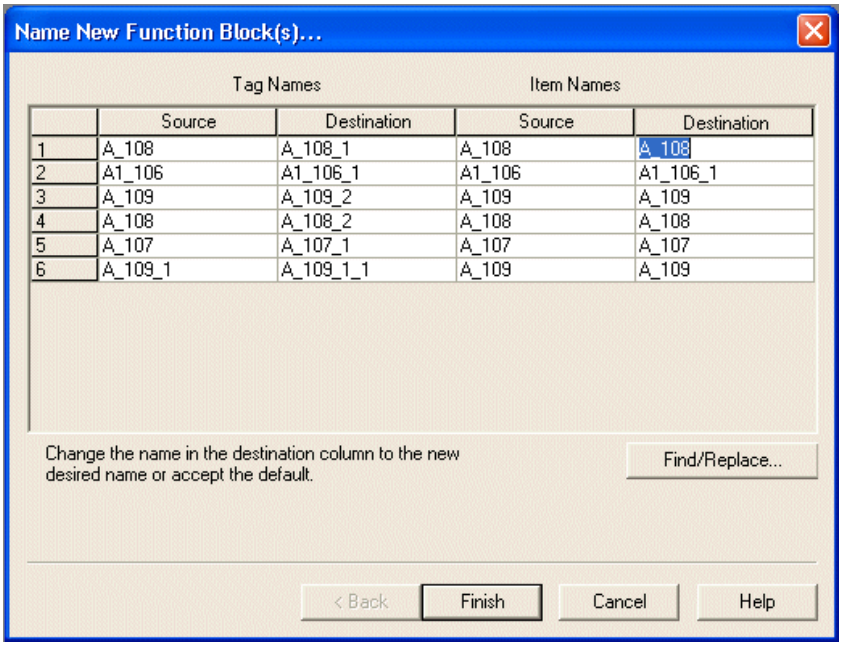
You select the Asset A1_106 and Asset A_108 to copy. When you perform the copy operation, the Asset A1_106 and its children (Assets A_107, A_108, and A_109), and Asset A_108 and its child (A_109) are copied.

Considerations

Note that when you select 'Copy,' a lock occurs that prohibits any other users from making changes to the selected entities. Once the entities are copied, the lock is released. Only entities that can be locked are available to be copied. If any of the entities are already locked, an error is reported that the entities could not be copied. You must remove the lock to perform the copy operation.

Task

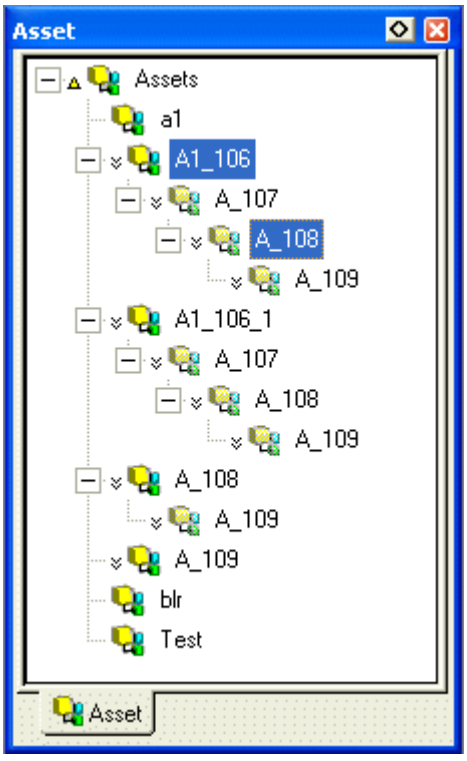
Step	Action
1	Select one or more assets or alarm groups to copy.
2	Then either: • Use the menu and choose **Edit**->**Copy…**, or • Right mouse menu and choose **Copy…**, or • Drag the selected object(s) onto the target for the copy (with the Ctrl key pressed) and then drop it into position on the model in the tree pane.
3	The Name New Function Block(s) dialog appears.



The dialog shows a list of entities to be copied, which includes all children of the copied entities (and their children).

You can also search to find entity names and then choose to replace them with other names. A Replace dialog appears when you click on the 'Find/Replace…' button.

Step	Action
	Entity Names The system generates new names for the copied entities. You can either change the names of the copied entities in the Destination column or accept the default names. The Destination name will be the same as the source name, as long as the entity name does not conflict with any names of the same parent.
4	Press the **Finish** button in the dialog to complete the copy operation.
5	The copy operation duplicates the selected entities along with the associated children. The Destination of the copied object(s) will be under the top level entity if no Destination has been entered in the dialog.



Note that you can click, drag and drop the assets or alarm groups to the desired location in the tree.

Delete

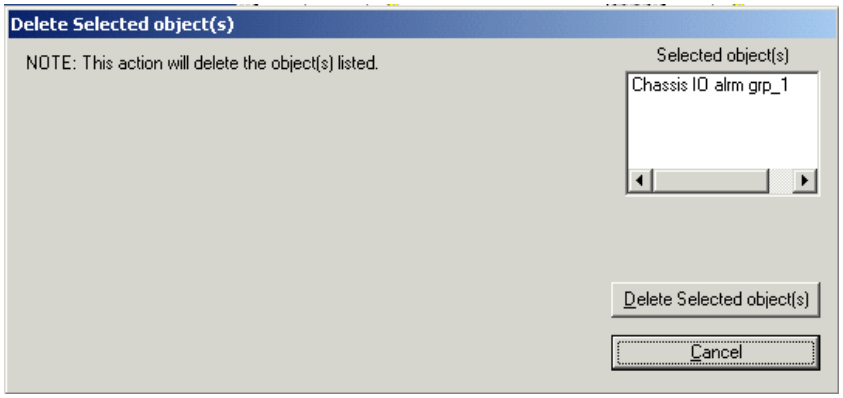
You can delete selected assets from the asset model and alarm groups from the alarms tree.

Considerations

Note that when you select 'Delete,' a lock occurs that prohibits any other users from making changes to the selected entities. Once the entities are deleted, the lock is released. If any of the entities are already locked, then a popup message appears to indicate that another user is accessing the entity and the delete function will be cancelled. You must remove the lock to perform the delete operation.

Task

Step	Action
1	Select one or more assets or alarm groups.
2	Then either: • Use the menu and choose **Edit**->**Delete…**, or • Right mouse click menu and choose **Delete…**, or • You can also click the Delete icon on the toolbar, or • Just press the **Delete** key. The Delete Selected Object(s) dialog appears.



Step	Action
	The dialog shows a list of all entities selected for deletion. If any of the selected entities have children, a message will indicate that children of selected entities will be deleted as well.
3	The selected entities and any children of the selected entities will be deleted. If a child of a selected entity has other parents that are not selected for deletion, then the child will not be deleted.

Move

You can move one or more entities (assets and/or alarm groups) and their associated children from one hierarchy parent to another in the enterprise model.

Considerations

Note that when you select 'Move,' it locks both the source and target entities of the move operation. The lock is released when the operation is complete. If any of the assets are already locked, then an error is indicated and the operation is canceled. You must remove the lock to perform the move operation.

Task

Step	Action
1	Select one or more entities that you want to move.
2	Then click and drag the entities onto another entity. If the moved entity has another parent, the relation to the other parent is not affected. The move operation will maintain the child relationships of the moved entities.
	**TIP** Open a second tree view to make it easier to move objects, especially when the tree view becomes large. You can click, drag and drop objects from one tree view to the new location in the second tree.
3	Note that if an entity is contained by multiple parents (alarm groups support this also), you can move an entity to a new parent, while keeping the parent relationship with the current parent. To do this, click, drag and drop the entity while holding down the **Ctrl** and **Shift** keys until the entity is dropped.

Import/Export

You can import and export the entire asset model or alarm group, or segments of the model.

- For example, you may want to export the model, or certain segments of the model in order to reuse it in (import it to) another location. You may want to export and save the model to use it as a backup.
- The data is imported and/or exported using XML.

Export

The Export function is available when configuring the asset model or alarm groups.

Considerations

When 'Export' is selected, a lock occurs that prohibits any other users from making changes to the selected entities. The lock is released once the export is complete. If any entities are not available to be locked, an error is reported and the operation is canceled.

Task

Step	Action
1	Select one entity, a group of entities, or the top-level entity, (if selecting the entire model) to export.
2	Then either: • Use the menu and choose **File**->**Export…** or • Right mouse click menu and choose **Export…**
3	A dialog appears displaying the name of the entity selected for export. The fully qualified name is displayed for assets and the point name is displayed for alarm groups. Select a path and filename as the target for export. Depending upon the entity selected, a default file name is supplied.
4	When you select **Export**, the selected entity and all associated children are exported intact to a single file. The export includes all information related to the exported entities including: • Entity name • Entity Point name

Step	Action
	• Parent Entity Point name • Property data

Import

The Import function copies a file which contains assets or alarm groups and their associated children and adds it to the currently open asset model or alarm group.

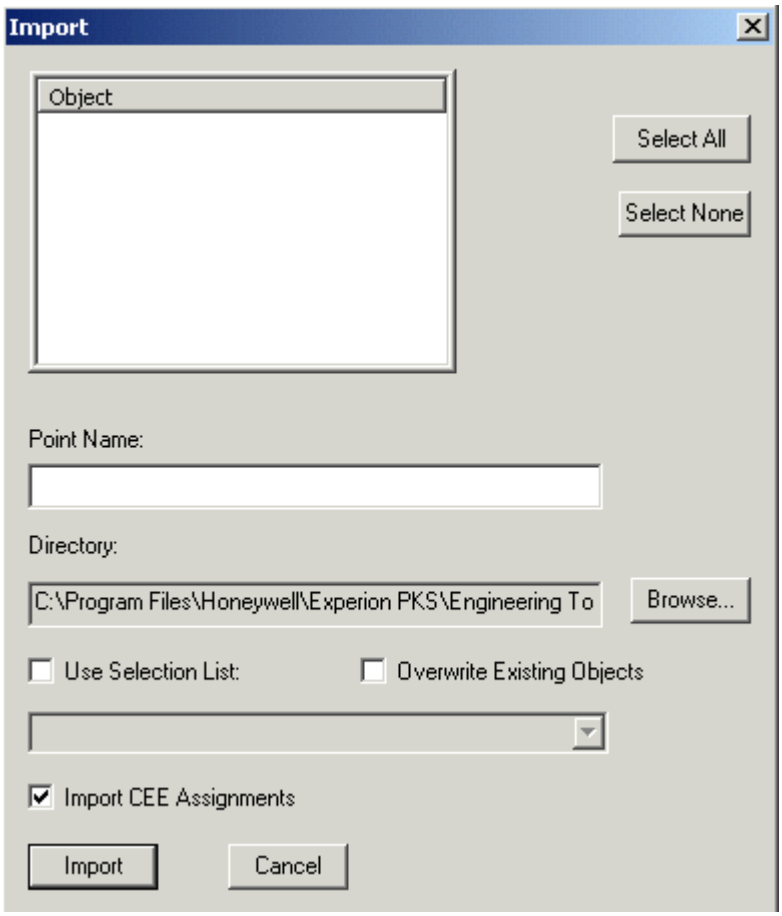
Considerations

When 'Import' is selected, a lock occurs that prohibits any other users from making changes to the selected entities. The lock is released once the import is complete. If any entities are not available to be locked, an error is reported and the operation is canceled.

Task

Step	Action
1	Use the menu and choose **File**->**Import…**
2	A dialog appears showing a list of exported objects based on a default directory. You may navigate to a different directory, which changes the list of exported objects.

Step	Action



- Select objects for import from the list in the 'Object' window. Or, enter a specific Point Name for which to import. Or, use the Directory for files to import, or use the Browse button to choose a different directory.
- Enter a check in the 'Use Selection List:' field and then click on the dropdown window to select an object for import.
- Enter a check in the 'Overwrite Existing Objects' field if you wish to overwrite any objects containing the same name in the enterprise model with the imported objects. See Overwriting Existing Objects for more information.

Step	Action
	• Enter a check in the 'Import CEE Assignments' field if you wish to import the CEE assignments with the objects.
	**ATTENTION** Note that if an asset is exported and then imported back into the same model, check the 'Overwrite Existing Objects' box.
3	Click '**Import**.' The import operation imports all entities encountered in the exported file and moves the entities to the parent specified in the file for each entity.

Note: In the following paragraphs, "**source**" refers to the information in the exported file and "**target**" refers to the entity in the EMDB.

Overwrite Existing Objects

Collisions may occur during a file import operation when the source contains a Point name that already exists in the EMDB. In the Import dialog (step 2 above), you can specify whether names and entities in the EMDB are to be overwritten with the names and entity parameters of the source when a collision occurs.

If you choose not to Overwrite Existing Objects when collisions occur, (the default), the import continues. Any errors encountered due to collisions during import are reported as shown in the following figure. You can then modify the source selection and/or check the overwrite option and repeat the import.

When you check the 'Overwrite Existing Objects' field in the Import dialog the following actions occur when a collision occurs:

- If the parent of the source is different than the target parent, the entity is moved to the parent specified in the source.
- If the entity name of the source is different than the target entity name, the source entity name is used.

Missing Parents

If the parent specified for the entity to be imported does not exist in the EMDB and is not selected for import, the entity will be added to the enterprise model as a top-level entity. A warning message is reported in the Importing Data dialog when the import operation is complete.

Duplicate Entity Names

The import operation ensures that an imported entity name is unique for entities of the same parent. If there is an entity already in the EMDB with the same name as an entity to be imported, the imported entity name is assigned a unique name. The name is modified from the source name, and appended with a _n, where n is an integer, (For example an entity named MIXING TANK in the database causes an imported entity with the same name to be modified to MIXING TANK_1.)

Generating Reports

You can generate reports that provide information on the entities and the enterprise model structure. The procedure is the same for generating reports for assets and alarm groups.

Task

Step	Action
1	In the Enterprise Model Builder window use the menu and choose **File->Reports…** The Reports dialog box appears. An asset or alarm group containment report can be generated from this dialog. The report will print the details of the selected entity (asset or alarm group) and any entities associated with it.
2	You can make these selections through the Report dialog box. • Select the report type as Asset containment, or Alarm Groups • Click the Print button to initiate a printout of the report • Click the Preview button to review the selected report's contents before printing it. • Click the Export button to intiate an export of the report to a disk file or Lotus Notes database in the file format of your choice. • Click the Close button to close the dialog box. • Click the Help button to call up this file.

Load Status and Error Messages

Lock errors

When you click on OK to begin a load operation, a lock occurs on the entities selected for loading so that changes cannot be made to these entities until the load is completed. These entities may include the system configuration, asset model, alarm groups or server configurations. If any of these entities are already locked due to a user making changes to the entities, then a message appears describing the entity that is locked and the user's name that is currently using it. These locks should be cleared before proceeding with the load.

Load errors

When you begin a load operation, the system configuration portion of the enterprise model or the entire model is downloaded from the EMDB repository to selected servers on the system. If errors occur during the load, an error message may appear, the load operation may abort or be cancelled, or the load may continue and complete. The Load Status and Details / Errors columns in the Load dialog provide information on the status of the load and the cause of any errors. The Load Status column of the dialog will indicate the action taken by the EMB. Depending upon the type of error or when during the load operation the error occurred, one of three conditions will result:

1. The load operation aborts on the server where the error was detected, (see Load Abort errors). Other servers selected for load may show a status of 'Cancelled.'
2. The load continues and then fails because of a detected error, (see Load Failed errors).
3. The load completes but reports that an error that was detected, (see Load Status).

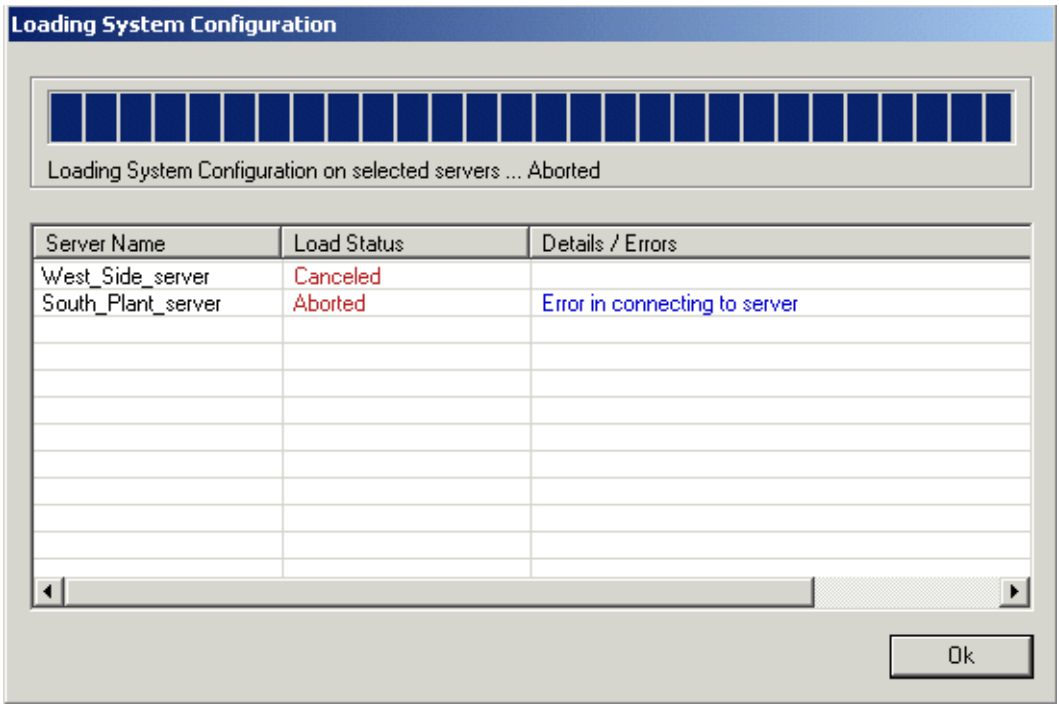
A description of the error appears in the Details/Errors column, or if there are multiple errors, a hyperlink, '[Double-click to view log file]'appears in the Details/Errors column. Double click on this link opens an error log in Notepad which describes the detected errors.

Load Abort errors

The system configuration or the entire enterprise model will be exported for loading onto the selected server(s). If any errors are detected during export, the entire load operation is aborted and the error is reported to you.

For example, if an error is detected during server validation, the load operation is aborted and the error is reported. The Load Status of "Abort" appears against the server(s) where

the error was detected, as shown in the following figure. The Details/Errors column describes the cause of the error. The Load Status of 'Cancelled' is shown for the other servers, meaning that the load operation did not run. See Load Status and Error Messages for details on all Load Status states.



Load Failed errors

When an error is detected during a load operation, a Load Status of 'Failed' may appear against the server on which the load operation has failed. However, the load will continue for the other selected servers. A brief description of the error is reported to you in the Details/Errors column.

For example, an error may occur when the system name or EMDB has changed and the Force Load option is not checked. The error message will tell you to perform a load with the Force Load option checked (check box on Load dialog) if you wish to overwrite the current system configuration.

If additional errors occur a log file is generated. A hyperlink, '[Double-click to view log file],' appears in the Details/Errors column against the server on which the errors have

occurred. Double click the link to view a log file generated by the errors. You should rectify the error and repeat the load for that particular server.

If any warnings are generated during the load operation, the load will complete, but the Load Status column will show "Complete (with warnings)." This may happen when you have chosen the Force Load option, and the system name or EMDB has changed. The load proceeds but a log file will be generated. Click on the link '[Double-click to view log file]' to view a log file generated by the errors. You should rectify the error and repeat the load for that particular server.

Load status

The Load Status of a server can vary depending on whether any errors are detected during the load operation and the load status of other servers. The 'Load Status' column indicates the state of the load operation for that server. Any detected errors are briefly described in the 'Details/Errors' column, (see Error Messages for more details of these messages). Valid load status for servers which may occur are described in the following table.

Load Status	Description and Result
In Progress	During the load operation the server is in the "In progress" state. A description of the load/state is shown in the 'Details/Errors' column.
Complete	If the load operation to the server completes without any warnings, the load status of the server changes to "Complete".
Complete (with warning)	If the load operation on the server completes with an error, the load status of the server changes to "Complete (with warning)". Click on the link '[Double-click to view log file]' to view a log file generated by the errors.
Abort	Server(s) in the "Abort" state indicate that an error has occurred on these servers which prevent the load operation to proceed further. The load status of the server(s) where the error has occurred changes to "Abort". The status of all other servers is blank, or Canceled. The 'Details/Errors' column contains a brief description of the error. If the error generates a log file, click on the link '[Double-click to view log file]' to view the log file.

Load Status	Description and Result
Canceled	Server(s) in the “Canceled” state indicate that the load operation will not proceed on these servers because one or more servers are in the “Abort” state. Since one or more servers are in “Abort” state and the load operation cannot proceed, load is canceled for all other servers.
Failed	Server(s) in the “Failed” state indicate that an error has occurred, and load operation cannot proceed on that server(s), but the load will continue for the other selected servers. The load status on the server(s) where the error has occurred changes to “Failed”. The Details column contains a brief description of the error. If the error generates a log file, click on the link ‘[Double-click to view log file]’ to view a log file generated by the errors.

Error messages

If an error is detected during the load operation, a status of the load operation is indicated for that server in the ‘Load Status’ column. The ‘Details/Errors’ column gives a brief description of the error. When multiple errors occur, a ‘[Double-click to view log file]’ link appears in the Details/Errors column. Double click on the link to open the error log in Notepad which describes the errors.

When errors are reported, look in the Enterprise Model Builder log file located at `C:\Documents and Settings\All Users\Application Data\Honeywell\Experion\`*`ServerName`*`.log` and then take steps to clear the error and then retry the load operation.

For example, if you encounter the any of the following error messages during a load operation:

Error in validating server names
Error in validating point names
Error in validating FQN

Look in the log file and determine what items were causing validation to fail. Look in the most recent file of the form ErrLog_*n*.txt, (*n* = a number). Rename the items and then retry the load operation.

The error messages, which may be shown in the 'Details/Errors' column or in the error log, are listed in the following table.

'Details / Errors' Message	Description and Result
Error in validating server names	Indicates that validating server names on the particular server has failed. The Load Status of the server is "Abort". The load operation to that server is aborted. See example above for action to clear error.
Error in validating point names	Indicates that validating point names on the particular server has failed. The Load Status of the server is "Abort". The load operation to that server is aborted. See example above for action to clear error.
Error in validating FQN	Indicates that validating Full Qualified Names (Full Item Names) on the particular server has failed. The Load Status of the server is "Abort". The load operation to that server is aborted. See example above for action to clear error.
Error in exporting system configuration	Indicates that exporting system configuration has failed. The Load Status of all servers is "Abort". The load operation is aborted.
Error in exporting Asset/Alarm group	Indicates that exporting Asset model or Alarm groups has failed. The Load Status of all servers is "Abort". The load operation is aborted.
System Name changed – Repeat Load with Force Option set	Indicates that the system name has changed after the previous load. The Load Status of the server is "Failed." The load operation fails for that server.

'Details / Errors' Message	Description and Result
	Click on the link '[Double-click to view log file]' to view a log file generated by the errors.
Repositroy changed – Repeat Load with Force Option set	Indicates that the EMDB repository has changed after previous load. The Load Status of the server is "Failed." Load fails for that particular server. Click on the link '[Double-click to view log file]' to view a log file generated by the errors.
Connection to server failed	Indicates that there was error in connecting to the server. The Load Status of the server is "Failed." Load fails for that server.
Error in loading system configuration	Indicates that an unexpected error has occurred in loading system configuration. The Load Status of the server is "Failed." The load operation fails for that server. Click on the link '[Double-click to view log file]' to view a log file generated by the errors.
Error in loading Asset/Alarm Group	Indicates that an unexpected error has occurred in loading the asset model or alarm group. The Load Status of the server is "Failed." The load operation fails for that server. Click on the link '[Double-click to view log file]' to view a log file generated by the errors.
Unable to locate the network share SVRPTBLD.	This error occurs when the network share 'SVRPTBLD' is not found on the client. EMB may need to be reinstalled on the client.

Migration

Enterprise model migration

Migration of your system to Experion Release210 will also adapt the following objects to work within the Enterprise Model:

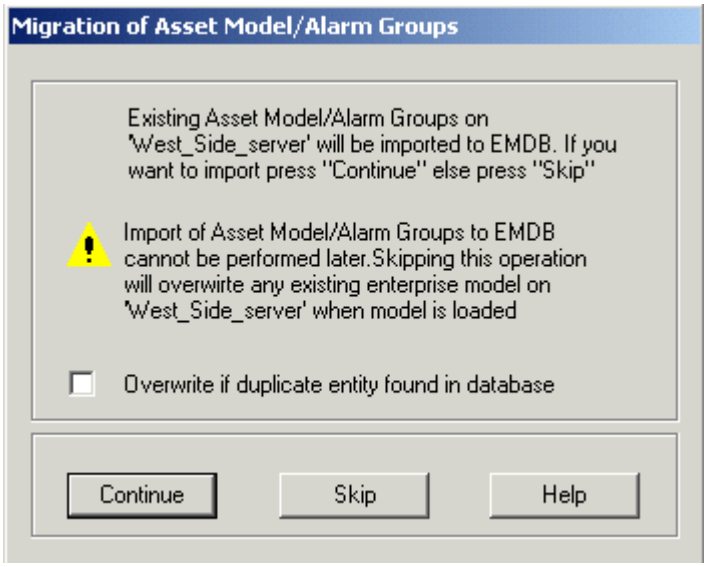
- Areas – Areas in existing Experion are converted to top-level assets in the asset model.
- Assets – Assets that were created from existing areas in previous Experion releases are added into the EMDB.
- Alarm Groups – Alarm groups also are added to the EMDB.

Migration of areas

The migration of areas in existing Experion to top-level assets in the asset model occurs as part of the Experion Server migration. For example, an area referenced by SCADA and CB points is migrated to reference a new asset (PARENTASSET). Additionally, the SCADA and CB points are assigned a default entity name, that is, the point name and the value of the SCANAREA parameter may be transferred to a new associated asset parameter.

Migration of Assets and Alarm Groups from Servers to EMDB

When you select the task 'Add a server to this system' in the Configuration Explorer window, you may choose to migrate the assets and alarm groups existing on the server into the EMDB. The asset model and alarm groups are exported from the server and imported into the EMDB and added to the system model. At the start of the migration (or import) you have the option to specify whether the operation should overwrite any entities in case of a collision, (such as duplicate entities with the same names). See the Migration dialog in the following figure.



Migration Dialog

You also have the option to skip the migration (or import of the server model configuration) for the new server. Note that there is no other mechanism to perform the migration at a later time, so you must confirm the request to skip the migration. If migration of the server model configuration is skipped, a load of the model from the EMDB to the server will overwrite any existing model configurations on that server.

Migration to later releases

The EMDB is migrated to a new release when the server node that it resides on is migrated to a new release. Migration rules are consistent with existing Experion migration rules. Once the EMDB has been migrated to a new release, the EMB clients must also be upgraded to the same release. Servers in the system are not required to be migrated forward at the same time. It is possible for the EMB to connect to Experion servers at earlier releases, as long as the servers are at least at Experion release 210.

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