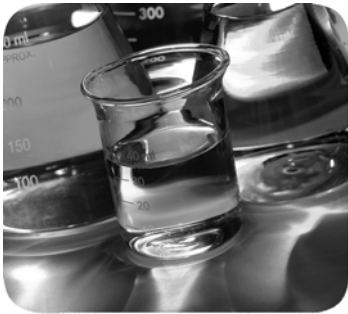


Application Code Manager



Important User Information

Read this document and the documents listed in the additional resources section about installation, configuration, and operation of this equipment before you install, configure, operate, or maintain this product. Users are required to familiarize themselves with installation and wiring instructions in addition to requirements of all applicable codes, laws, and standards.

Activities including installation, adjustments, putting into service, use, assembly, disassembly, and maintenance are required to be carried out by suitably trained personnel in accordance with applicable code of practice.

If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

In no event will Rockwell Automation, Inc. be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many variables and requirements associated with any particular installation, Rockwell Automation, Inc. cannot assume responsibility or liability for actual use based on the examples and diagrams.

No patent liability is assumed by Rockwell Automation, Inc. with respect to use of information, circuits, equipment, or software described in this manual.

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Throughout this manual, when necessary, we use notes to make you aware of safety considerations.



WARNING: Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.



ATTENTION: Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss. Attentions help you identify a hazard, avoid a hazard, and recognize the consequence.

IMPORTANT

Identifies information that is critical for successful application and understanding of the product.

Labels may also be on or inside the equipment to provide specific precautions.



SHOCK HAZARD: Labels may be on or inside the equipment, for example, a drive or motor, to alert people that dangerous voltage may be present.



BURN HAZARD: Labels may be on or inside the equipment, for example, a drive or motor, to alert people that surfaces may reach dangerous temperatures.



ARC FLASH HAZARD: Labels may be on or inside the equipment, for example, a motor control center, to alert people to potential Arc Flash. Arc Flash will cause severe injury or death. Wear proper Personal Protective Equipment (PPE). Follow ALL Regulatory requirements for safe work practices and for Personal Protective Equipment (PPE).

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Notes:

Preface Objectives

This preface covers the following topics:

- [Purpose of This Manual](#)
- [Additional Resources](#)
- [Abbreviations](#)

Purpose of This Manual

This manual is a user guide for the Application Code Manager (ACM) application. It provides procedures for the following:

- Installing the Program
- Creating Projects
- Registering Library Objects
- Configuring Library Objects
- Exporting and Importing Schedules
- Saving Projects
- Using the Database Manager
- Creating Reports

Additional Resources

This document contains additional information concerning related products from Rockwell Automation.

| Resource | Description |
|--|--|
| Library Designer and Library Object Manager User Manual, publication LOGIX-UM006A-EN-P | User manual for the Library Designer plug-in and the Library Object Manager application. |

You can view or download publications at <http://www.rockwellautomation.com/literature/>. To order paper copies of technical documentation, contact your local Allen-Bradley distributor or Rockwell Automation sales representative.

Abbreviations

The following abbreviations are used in this publication.

| Abbr | Meaning |
|------|--|
| ACM | Application Code Manager |
| FT | FactoryTalk® |
| FTAE | FactoryTalk Alarms and Events |
| GUI | Graphic User Interface |
| HMI | Human Machine Interface |
| I/O | Input/Output |
| LOM | Library Object Manager |
| ME | Machine Edition |
| SE | Site Edition |
| XML | Extensible Markup Language (Export format -XML file extension) |

Notes:

Application Code Manager Overview

Chapter Objectives

This chapter provides information on the following topics:

- [Design Process](#)
- [Library Objects](#)
- [Templates](#)
- [Schedules](#)
- [Design Automation Concept](#)

Design Process

The Studio 5000® Application Code Manager (ACM) design process introduces a modular, Object-based approach to the creation of ACD controller code, FactoryTalk® View SE/ME display content, FactoryTalk Historian Tag and FactoryTalk Alarms and Events (FTAE) import configuration.

The Studio 5000 ACM design process separates function and configuration into two separate layers of data, and divides the design process into two distinct workflows, Library Management and Project Execution.

The design process involves a suite of applications and plug-ins:

- The Studio 5000 Logix Designer® application
- The Library Designer plug-in
- The Library Object Manager (LOM) application
- The Application Code Manager (ACM) application
- FactoryTalk View Studio

The Library Management Workflow

Studio 5000 Logix Designer

The Library Management workflow begins when a Librarian creates a specific instance of ACD controller code in the Logix Designer application. The specific instance is a single Project containing a single Controller. The Project includes a logical structure allowing for these Logix Objects:

- Controller Tags
- Tasks
- Motion Groups
- Add-On Instructions

- Data Types
- Trends
- I/O Configurations

Each Logix Object has an internal hierarchy of elements: for example, a Task may contain one or more Programs, each of which may contain one or more Routines.

Every Project has one Controller. There may be one, many, or no instances of any type of Logix Object in the Project when the specific instance is created. This single instance of controller code is saved to an ACD file.

Traditionally, controller code was designed and configured for a specific Project. In the Library Management workflow, Librarians design content not for a specific Project, but to provide a widely applicable set of functions. Project components are used to create Library Objects. Each Library Object is an independent functional entity that can be easily configured to meet a wide range of applications and can be used in many Projects.

Library Designer

The Library Management workflow continues in the Library Designer plug-in. Using the Library Designer plug-in, the Library can assign the Project, the Controller, and any of the Logix Objects to one or many Library Objects. Each Library Object defines a set of functions, capabilities, and connections: valve, motor, controller, module. Rather than being tied to one application, Library Objects can be configured to meet the needs of multiple applications.

The Librarian adds decorative elements (Custom Properties) to the Library Object, including Parameters, SubObjects, Functions, Substitutions, and External References. Decoration lets the Library Object be configured when it is implemented in a Project in the ACM application. The ACM application can only access the decoration which has been added in the Library Designer plug-in.

Logix Objects can be restricted to a single Library Object or assigned to multiple Library Objects, each with a different set of decoration. A Library Object can contain a single Logix Object, or a Logix Object can be added as an element of a more complex Library Object. For example, a P_Alarm Add-On Instruction can be assigned to a valve Library Object and can also be an element of a Motor or Pump Library Object.

Each ACD file can include one Project Library Object, one Controller Library Object, and any number of Logix Object Library Objects.

While decoration is stored as part of the ACD file, it is treated as a separate layer of information from the base controller code.

Decoration allows the Librarian to control how the Library Object is instantiated, including configurations such as naming, tag values, conditional inclusion, and connections to other Library Objects. Project Engineers can instantiate one or many distinct instances of a Library Object within an ACM Project and can separately configure each instance.

Library Object Manager

The Library Management workflow is completed when the Librarian opens the decorated ACD file in the Library Object Manager application. The Library Object Manager application lets the Librarian publish each Library Object, either directly to the ACM Database or to a file in HSL4 format. The published Library Object can be registered by an ACM Project. HSL4 files can be distributed individually or as part of a Repository.

The Librarian can add non-Logix user interface features such as HMI (FactoryTalk View SE/ME) and Historian (FactoryTalk Historian SE) components to the Library Object in the Library Object Manager application. This can only be done after the Library Object has been published from the ACD file to a Folder or ACM Database Repository. The features added in the Library Object Manager application are saved to the individual HSL4 file or database entry for the Library Object and are not saved to the original ACD file.

Each Library Object file saved from the Library Object Manager application is classified within a four-level hierarchy:

Solution -> Library Type -> Category -> Catalog Number

For example, an analog input module might be classified as follows:

- **Solution: (RA-LIB) ACM 1.00**
Solution will, in most cases, name the Library Object Repository for the Library Object.
- **Library Type: Modules**
Library Type is a general classification for the Library Object based on its function, such as Module, valve, or motor.
- **Category: Analog**
Category is a more specific classification for the Library Object, based on its function.
- **Catalog Number: 1734-IE2C/C**
The specific identifier for the Library Object.

Each Library Object file must have a distinct version number per Solution. Just as the same Logix Object can be used to create one or many Library Objects within the Library Designer plug-in, the same Library Object can be used to create one or many distinct Library Object files (versions) within the Library Object Manager application.

Library Objects can be quickly distributed, then registered into and configured for multiple Projects in multiple locations. Library Objects are available to any Project Engineer that requires the functionality the Library Object provides. Projects can be built and executed by Project Engineers without the need for high level programming support. Librarians can rapidly create and distribute new Library Objects to meet the needs of specific applications.

FactoryTalk View Studio

Librarians use the FactoryTalk View Studio application to create Site Edition (SE) and Machine Edition (ME) Symbols. The Symbol objects are created as graphic displays and exported to XML. The XML files are imported into the Library Object Manager application and added as non-Logix content to Library Objects.

The Project Execution Workflow

Application Code Manager

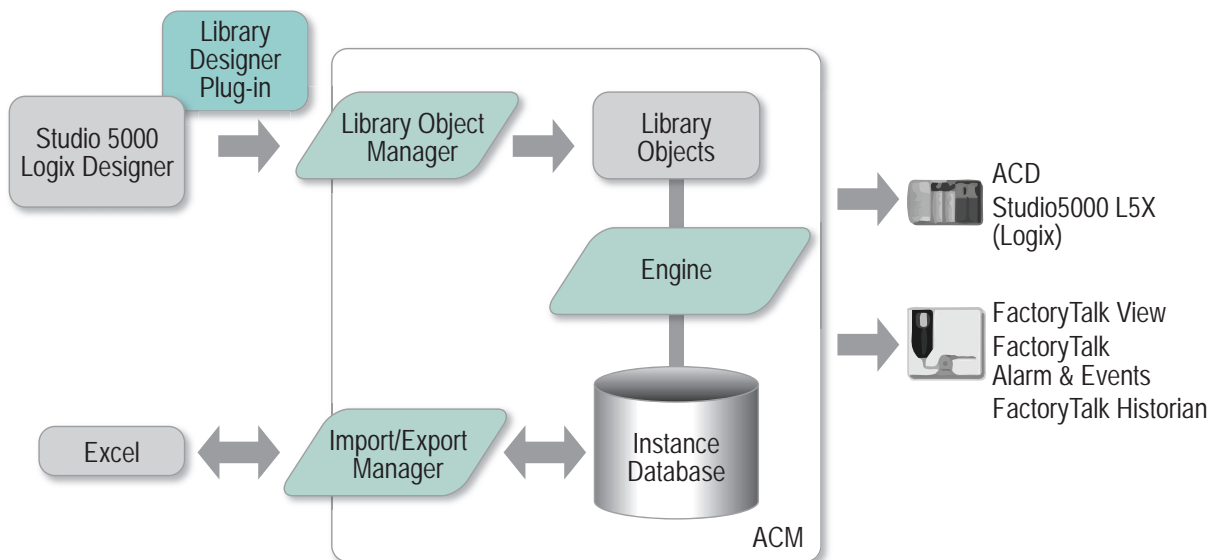
In the Application Code Manager application, Library Objects become the building blocks for Project Engineers to rapidly create and deploy Projects. Execution is simply a matter of registering, adding, and configuring the Library Objects. Projects can be completed without requiring high-end programming support.

In the Project Execution workflow, Project Engineers select Library Objects in the ACM application, configure the Library Object Parameters to meet the requirements of the current application, and then complete the workflow by creating the Project to ACD controller code.

Project Engineers can request new Library Objects from Librarians, reuse Library Objects from their own previous Projects, or share Library Objects with other Project Engineers. Completed Projects can, in turn, be used to create new Library Objects.

Library Objects

A Library Object (Library) is the class definition of an Object. A Library Object is instantiated. Individual Library Object files (HSL4) are XML formatted and registered in the ACM Database. A Library Object typically defines parameters, subclasses, user interface contents, and portions of controller code (for example, Logix) and HMI code (for example, FactoryTalk View SE/ME).



Library Objects contain controller code, as well as decoration (Custom Properties). Decoration is applied to a Library Object in the Library Designer plug-in. Decoration can be inherited from a Library Object that is higher in scope. Decoration that is applied to a Library Object is inherited by, or available to, all elements that are contained within the Library Object. Decoration can also be applied directly to an element, overriding inheritance from the Library Object and from Library Objects of higher scope.

Templates

A Template defines the static content and format of design output (for example, FT View display). A Template is not a class definition. A Template is not instantiated. Templates have a variety of formats (for example, HSL4, xml, csv, docx, xlsx, settings.xml) and are sometimes stored in the ACM Database, the “ACM Program Folder”, or the “Windows User Folder”. Refer to [Chapter 2. “Installation”](#) for information on registering Libraries and installing Template files.

Schedules

Schedules are tables or spreadsheets used to display or edit project data, typically Parameter values.

Read-only Schedules are temporarily generated for certain Main GUI Context Menu commands (for example, View Module I/O Schedule).

Excel spreadsheet Schedules can be exported, modified, and imported. These “spreadsheet” Schedules can be used for:

- Bulk additions, duplication, and changes
- Transferring project contents
- Snapshots
- Backups
- Version comparison

Design Automation Concept

The Project Design Outputs are generated automatically. The Objects (instances) and Parameter values, stored in the ACM Database, are combined with various Templates to create the following design outputs:

- Logix
- FactoryTalk View SE/ME graphics
- FactoryTalk Historian SE import file
- FactoryTalk Alarms and Events import file
- Excel (Schedules)

Notes:

Installation

Chapter Objectives

This chapter describes the steps for installing the Application Code Manager (ACM) application:

- [Installing the Application Code Manager Application](#)
- [Local Library and Template File Installation](#)
- [Completing the Application Code Manager for New Installation](#)
- [The Application Code Manager Application Full Upgrade](#)

The following application programs are used with the ACM application but are not included in these installation instructions:

- Studio 5000 Logix Designer® application V27 or higher
- FactoryTalk® View SE/ME
- FactoryTalk Historian SE
- Microsoft Office 2010 or later

TIP

Before upgrading an existing ACM installation, export all ACM Projects to a Project Schedule and back up the ACM Database(s).

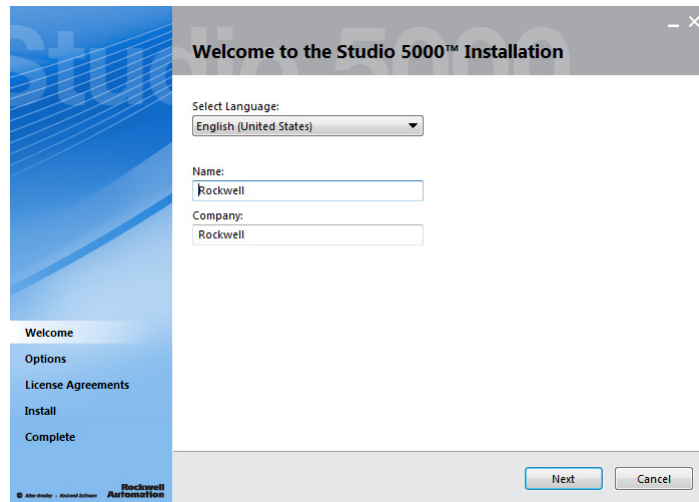
Refer to [Import Export Manager Export Tab on page 80](#) for information on the All Projects export option.

Refer to the Backup database command in [Chapter 7, Database Manager](#) for more information on backing up an ACM Database.

Refer to [Import Export Manager Import Tab on page 76](#) for information on importing a Project Schedule.

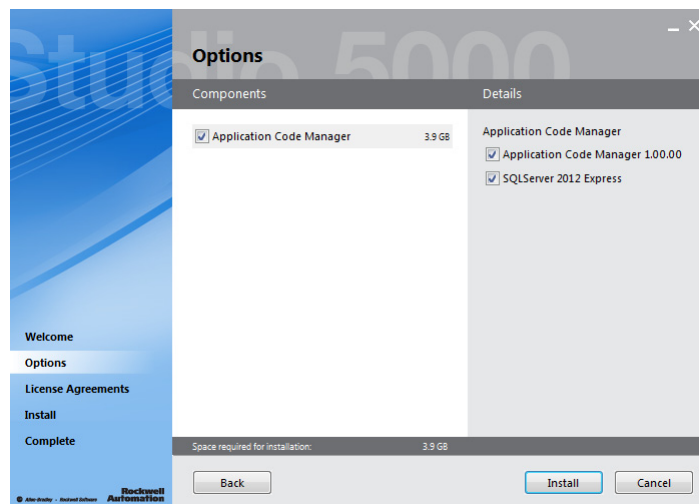
Installing the Application Code Manager Application

1. Run the **setup.exe** file.
2. The Welcome window opens. Select a language, enter the primary user name and company name, and click **Next**.



3. Select the programs you wish to install and click **Install**.

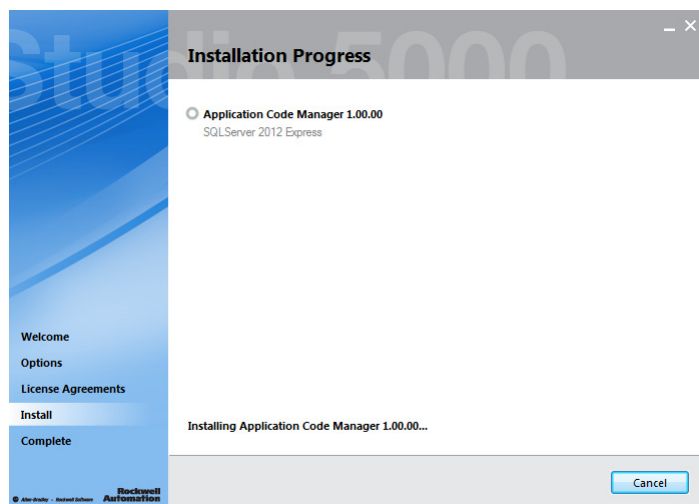
TIP SQL Server 2012 Express is optional if an existing ACM Database is used.



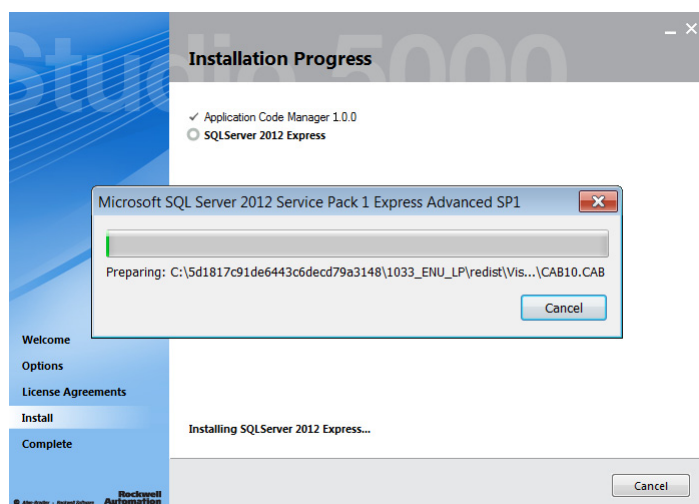
- If you have selected to install SQLServer 2012 Express, review the Software License Agreement and click **Accept all**.



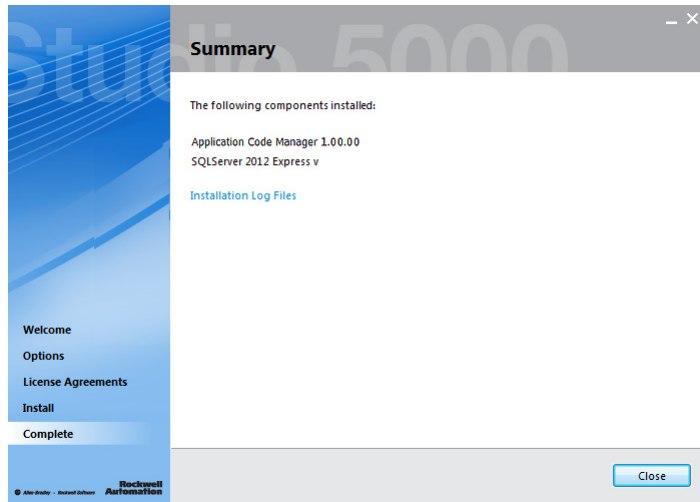
- The installer installs all prerequisite files, then opens the installer window. Click **Next**. The installer installs the Application Code Manager application.



- If you selected to install SQL Server 2012, the installer will now install the program. This installation will take several minutes to complete.



7. The Summary screen displays. Click **Close** to complete the installation.



Local Library and Template File Installation

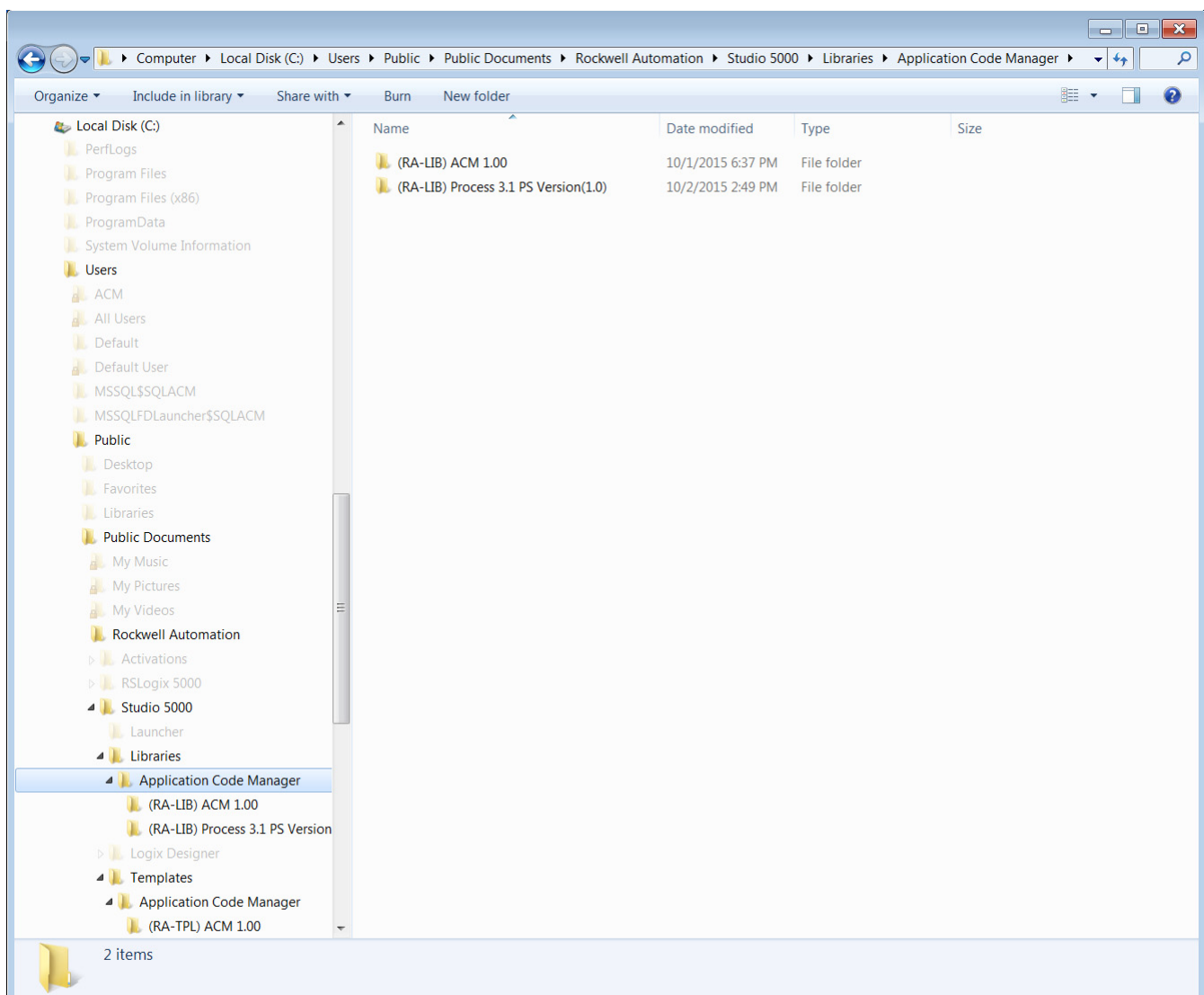
The installer creates folders for the default Library Object files and Template files in this location:

C: -> Users -> Public -> Public Documents -> Rockwell Automation -> Studio 5000

The installer creates separate “Libraries” and “Templates” folders and creates an “Application Code Manager” subfolder in each. It then copies the Library Object Repositories, (RA-LIB) ACM 1.00 and (RA-LIB) Process 3.1, and the Template Repository, (RA-TPL) ACM 1.00, into their respective subfolders.

The “(RA-TPL) ACM 1.00” folder is set as the default documentation path for the Application Code Manager application. Refer to the **Settings** command in the [Main GUI Tools Menu](#) for information on setting the documentation path.

TIP When design collaboration (i.e. shared ACM Database) is required, Template files can be copied to a shared folder.



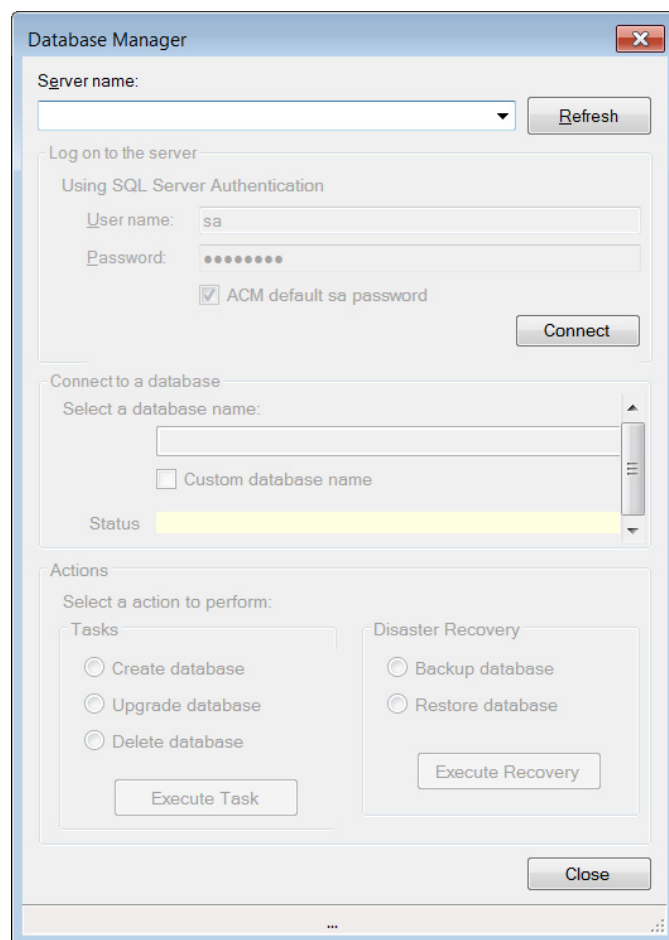
Completing the Application Code Manager for New Installation

After you open the Application Code Manager application, follow these steps to complete the installation.

1. Access the Database Manager and create a database.
2. Connect to the database.
3. Register Library content.

Accessing the Database Manager

The Database Manager is accessed by executing the **Database Manager** command in the **Main GUI Tools Menu**. Refer to [Main GUI Tools Menu on page 43](#) for more information.



The following table describes the controls on the **Database Manager** dialog.

| | |
|------------------------------------|---|
| Server name: | Selects a computer name and SQL server instance from a pull-down list, or enter a computer name and SQL server instance in the following format: <Computer Name> \ <SQL Server Instance> |
| Refresh | Refreshes the Server name selections. |
| Log on to the server | |
| User name: | SQL server user name entered during ACM Database creation. Refer to Creating an ACM Database on page 22 for more information. The default user name is "sa". |
| Password: | SQL server password entered when SQL Server Express was installed. Refer to Installing the Application Code Manager Application on page 16 for more information. |
| ACM default sa password | Selects the default ACM password. Check this box if the default SQL server password was entered when SQL Server Express was installed. Refer to Installing the Application Code Manager Application on page 16 for more information. |
| Connect | Connects to the database named in the Select a database name combo box using the SQL server entered in the Server name combo box. |
| Connect to a database | |
| Select a database name: | Selects a database name from a pull-down list. If the Custom database name checkbox is not selected, the default ACM database name is displayed (ACM). |
| Custom database name | De-selects the default ACM Database name (ACM). Check this box if the default ACM Database name was not entered during ACM Database creation. Refer to Creating an ACM Database on page 22 for more information. |
| Status | Displays ACM Database connection status. |
| Actions – Tasks | |
| Create database | Creates a database using the SQL server entered in the Server name combo box and the database name entered in the Select a database name combo box when the Execute Task command is clicked. Refer to Creating an ACM Database on page 22 for more information. |
| Upgrade database | Upgrades the ACM Database named in the Select a database name combo box using the SQL server entered in the Server name combo box when the Execute Task command is clicked. |
| Delete database | Deletes the database named in the Select a database name combo box using the SQL server entered in the Server name combo box when the Execute Task command is clicked. Refer to Deleting a Database on page 94 for more information. |
| Actions – Disaster Recovery | |
| Backup database | Makes a backup copy of the database file named in the Select a database name combo box when the Execute Recovery command is clicked. |
| Restore database | Replaces the database file named in the Select a database name combo box with a database file when the Execute Recovery command is clicked. |

Creating an ACM Database

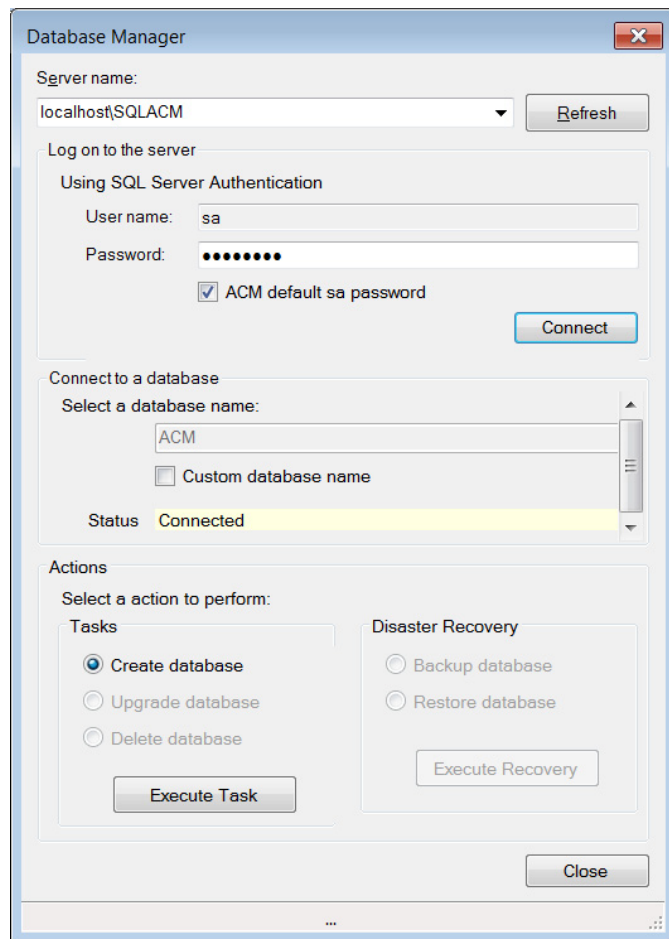
Display the **Database Manager** dialog by executing the **Database Manager** command in the **Main GUI Tools Menu**.

Enter a computer name and a SQL server instance in the **Server name** combo box. Enter the SQL server authentication and click **Connect**.

TIP Contact the database administrator for the computer name, the SQL server instance, and the server authentication if you did not install this SQL server instance.

Do not check the Custom database name checkbox. Use the default ACM Database name (ACM).

Click **Create database** and click **Execute Task**.

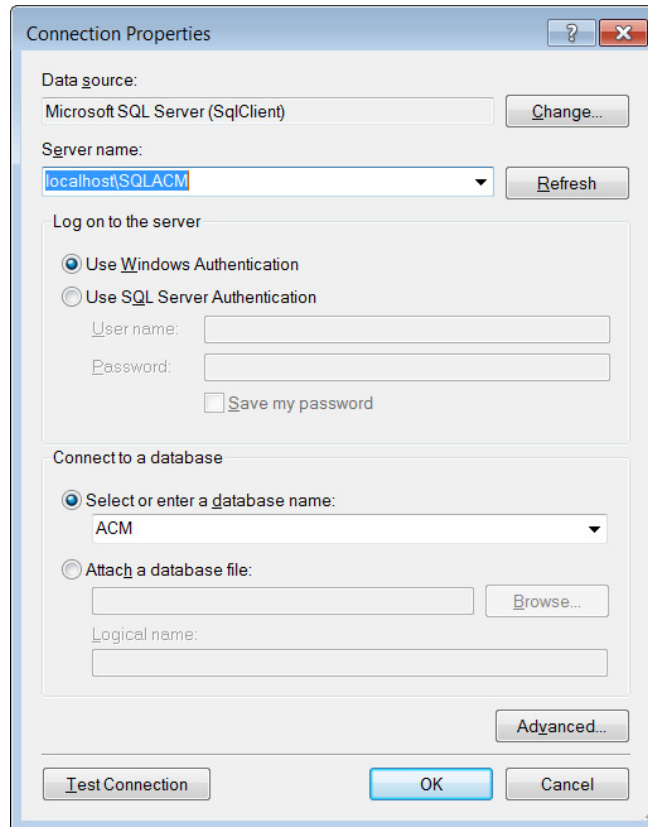


The **Database Manager** will display the results. Click **OK**.

Refer to [Connecting to an ACM Database on page 39](#) for information on connecting to the ACM Database.

Connecting to an ACM Database

Display the Connection Properties dialog by executing the Connect command in the Main GUI File Menu.



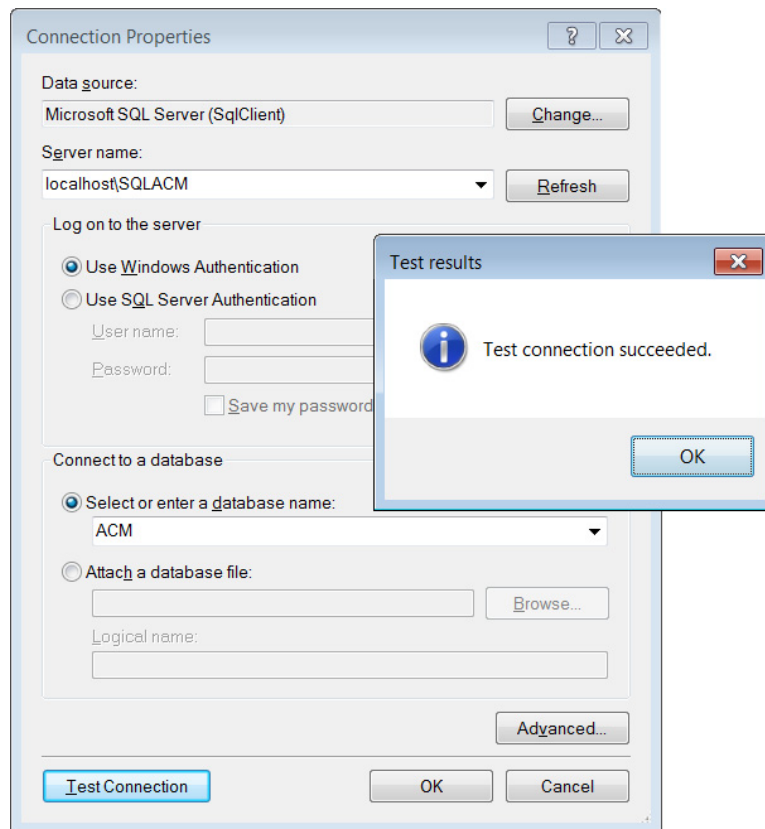
The following table describes the contents of the **Connection Properties** dialog.

| | |
|---|---|
| Data source: | Database type. Always select Microsoft SQL Server (SqlClient). |
| Server name: | Selects a computer name and SQL server instance from a pull-down list or enter a computer name and SQL server instance in the following format: <Computer Name> \ <SQL Server Instance> |
| Log on to the server Use Window Authentication | Allows SQL server log on using Windows authentication. |
| Log on to server Use SQL Server Authentication | Allows SQL server log on using SQL server authentication. |
| Connect to a database Select or enter a database name: | Select a database name from a pull-down list or enter a database name. |
| Connect to a database Attach a database file: | Type a database file name or use the Browse button to search for a file. |
| Test Connection | Tests the connection to the database. If a "Test connection succeeded." message is not returned, check the following: <ul style="list-style-type: none"> • Computer name • SQL Server authentication • Network access (remote SQL Server) |
| Advanced | Select to specify advanced connections to the database. |

Enter a computer name, a SQL server instance, and the SQL server authentication. Contact the database administrator for the computer name, the SQL server instance, and the SQL server authentication if you did not install this SQL server instance.

Select or enter a database name. Contact the database creator for the database name if you did not create the database.

TIP After entering the Connection Properties, test the connection by executing the Test Connection command and confirm the correct database name is displayed in the Main GUI Title Bar. Refer to [Main GUI Title Bar on page 28](#) for more information.



Registering the Default ACM Libraries

Verify that the ACM application is connected to the correct ACM Database by examining the Main GUI Title Bar. Refer to [Main GUI Title Bar on page 28](#) for more information.

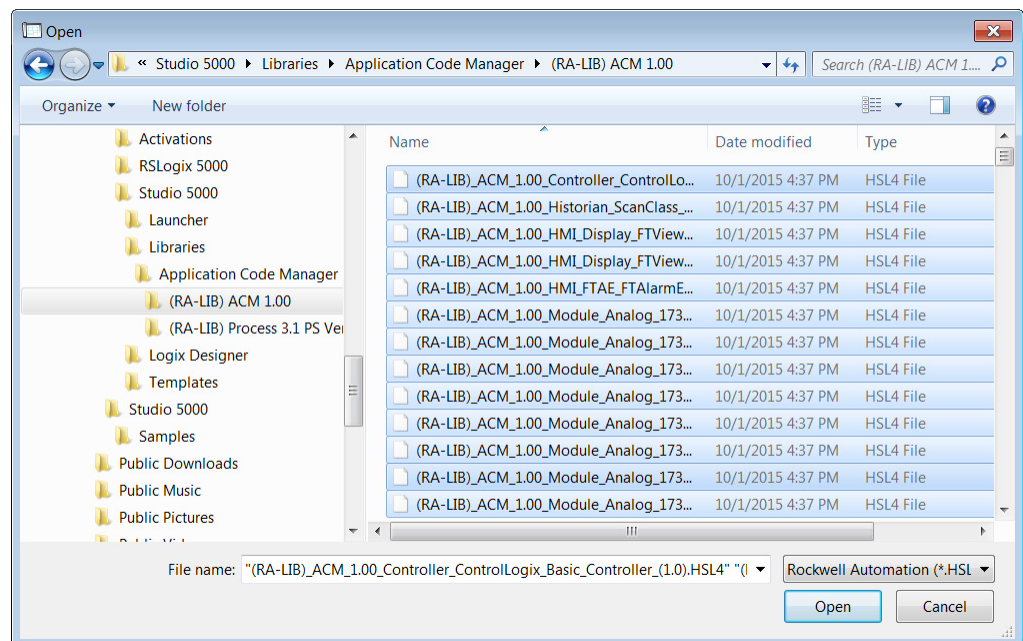
Follow these steps to register the default Libraries.

1. Display the **Open** dialog by executing the **Register** command in the **Registered Libraries Context Menu**. The dialog should open in the default location:

C: -> Users -> Public -> Public Documents -> Rockwell Automation -> Studio 5000 -> Libraries -> Application Code Manager

2. Open the “(RA-LIB) ACM 1.00” folder. Select all the Library Objects contained in the folder and click **Open**.
3. Repeat the process for the “(RA-LIB) Process 3.1” folder.

TIP The **Register** command can be executed from any context menu in the Main GUI Registered Library tree view: right-click to open the context menu. The location of a Library in the Main GUI Registered Library tree view is defined in the Library file (HSL4).



The Application Code Manager Application Full Upgrade

When upgrading the Application Code Manager application, it may be desirable to bring the Libraries used in the ACM Projects for a particular ACM Database up to date and to obsolete the old Libraries versions.

IMPORTANT Always back up the current ACM Database before performing a full upgrade.

The following steps are the recommended method for doing a full upgrade.

1. Back up database.
2. Export all Projects with IEM.
3. Run ACM install, open the Database Manager, and delete the ACM Database.
4. Create a new ACM Database.
5. Upgrade all Templates.
6. Register the new master Libraries.
7. Import Projects using the Import Export Manager.

TIP When importing the Projects, a compatible Library must be registered in the ACM Database. The Catalog Number of the registered Library must match the Catalog Number in the Project Schedule, and a Library with a revision greater than or equal to the revision in the Schedule must be registered. If a Library with the same revision is registered, the Library with the same revision is used. If a Library with the same revision is not registered and a Library with a greater revision is registered, the newest Library is used.

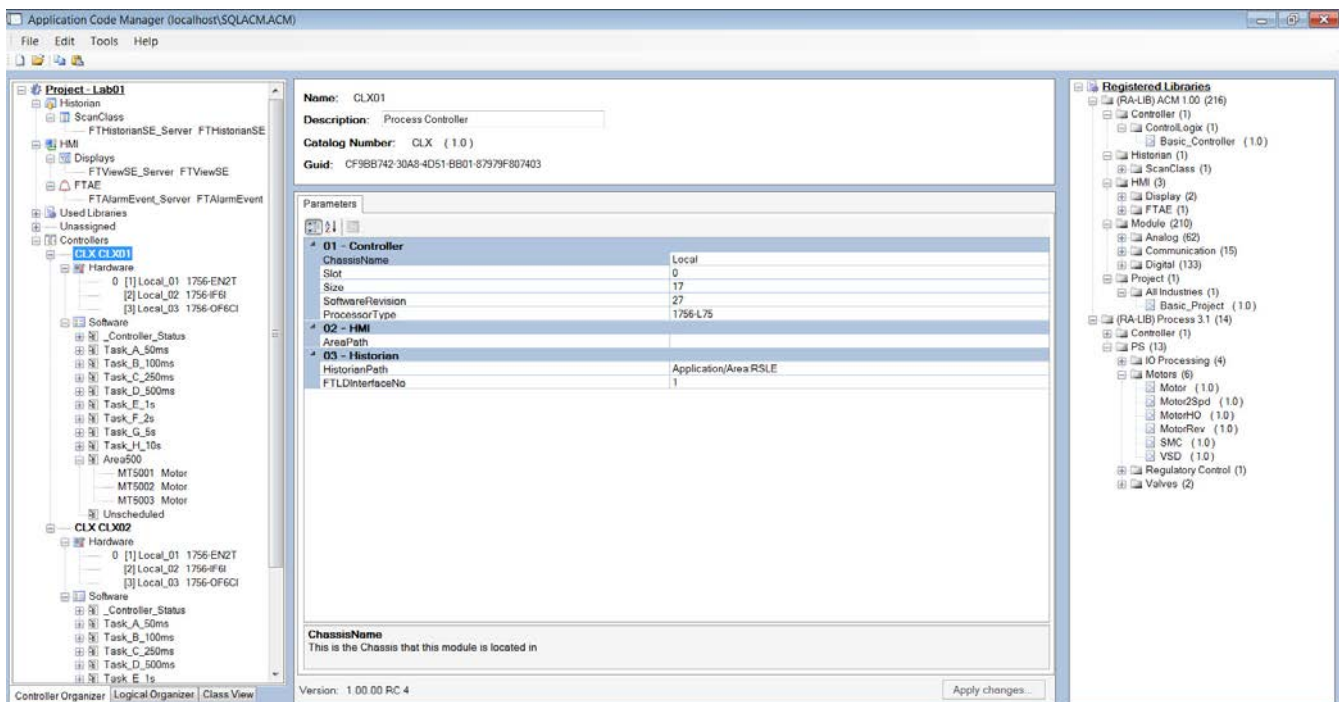
Main Graphic User Interface

Chapter Objectives

This chapter provides information on the following topics:

- [Main GUI Title Bar](#)
- [Main GUI Menu Bar](#)
- [Main GUI Button Bar](#)
- [Main GUI Registered Libraries Tree View](#)
- [Main GUI Project Tree View](#)
- [Main GUI Object Parameter Dialog](#)

This chapter describes the Main Graphic User Interface (Main GUI).



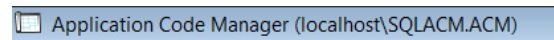
The following table describes the controls on the **Main Graphic User Interface**.

| | |
|-------------------|---|
| Title Bar | Refer to Main GUI Title Bar on page 28 for more information. |
| Menu Bar | Refer to Main GUI Menu Bar on page 28 for more information. |
| Button Bar | Refer to Main GUI Button Bar on page 28 for more information. |

| | |
|---------------------------------------|---|
| Registered Libraries Tree View | Refer to Main GUI Registered Libraries Tree View on page 28 for more information. |
| Project Tree View | Refer to Main GUI Project Tree View on page 30 for more information. |
| Object Parameter Dialog | Refer to Main GUI Object Parameter Dialog on page 35 for more information. |

Main GUI Title Bar

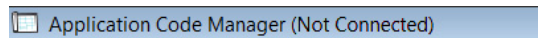
The Main GUI Title Bar is shown below.



The Main GUI Title Bar displays the application icon and application name followed by the computer name, SQL server instance, and database name formatted as follows:

<Computer Name> \ <SQL Server Instance>.<DataBase Name>

The Main GUI Title Bar displays “(Not Connected)” if the ACM is not connected to a database.



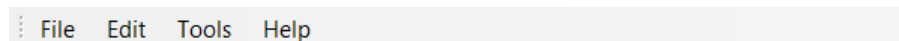
TIP If the Main GUI Title Bar displays “(Not Connected)”, refer to [Connecting to an ACM Database on page 39](#).

The Windows Minimize, Maximize, and Normal Size buttons are enabled.

Use the Windows close button to close the ACM application.

Main GUI Menu Bar

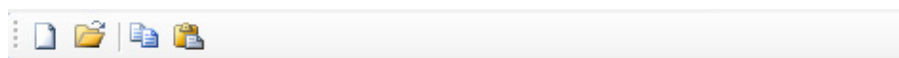
The Main GUI Menu Bar is shown below.



Refer to [Main GUI Menu Bar on page 37](#) for more information.

Main GUI Button Bar

The Main GUI Button Bar is shown below.



The Main GUI Button Bar is located directly below the Main GUI Menu Bar, and provides quick access to commonly used commands.

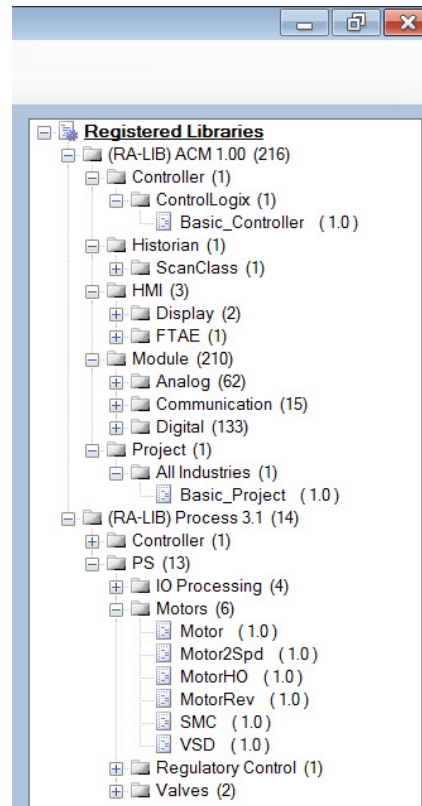
Refer to [Main GUI Button Bar on page 37](#) for more information.

Main GUI Registered Libraries Tree View

The Registered Library Tree View displays all Libraries (classes) in the connected ACM Database. These Libraries can be added (instantiated) to an ACM Project.

Refer to [Library Objects on page 12](#) for a description of a Library.

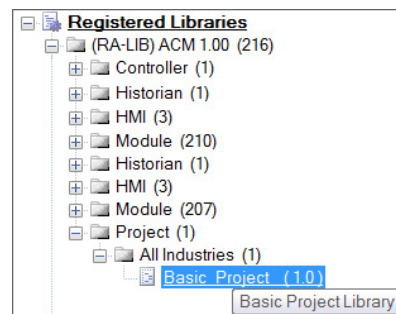
The Registered Library Tree View is shown below.



The Libraries are organized in a 4-level hierarchy:

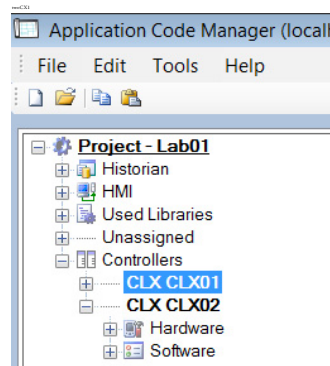
- > Solution (Number of Objects)
 - > Library Type (Number of Objects)
 - > Library Category (Number of Objects)
 - > Library Catalog Number (Library Version)

The Library Description is shown in the Library's tool tip.



Main GUI Project Tree View

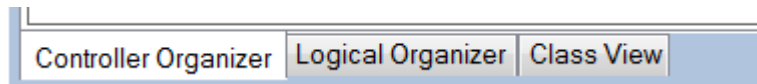
The Main GUI Project Tree view is shown below.



The Main GUI Project Tree View displays the Objects (instances) contained in the Project including FT Historian Server Objects, FT View SE/ME Server Objects, Libraries (classes) used in the Project, and Controller Objects.

Organizing the View

The Objects (instances) contained in a project are arranged in a hierarchy. There are three ways to organize the hierarchy, which are accessed by clicking one of the three tabs at the bottom of the Main GUI Project Tree view.



Controller Organizer

The Controller Organizer is the default view and displays all the project data according to the following nodes:

- System (Non-Controller data)
The System node displays non-controller-specific data such as Historian and HMI configurations.
- Unassigned (Unassigned Controller data)
- Controllers (Hardware and Software)
The Controllers node displays all the Controllers and controller-specific data.

Each configured Controller should be split up according to the following child nodes:

- Hardware (Communication and I/O modules, etc.)
- Software (Logix-specific Objects, Task\Program, Control Modules, etc.)

Users can add, copy, or delete Object instances from this view. Users can generate code from this view. Users can generate reports from this view.

Logical Organizer

The Logical Organizer displays all the controller-specific data according to the defined organizational model, independent of which controller each Object instance belongs to.

The Logical Organizer supports the same definitions of a Logical Organizer as found within the Studio 5000 Logix Designer® application, such as Folders and Programs, Folders within Folders, and Programs within Programs.

Objects are organized by the Folder\Program parent relationships and show the instances below them.

Users can add, copy, or delete Object instances from this view. Users can NOT generate code from this view. Users can generate reports from this view.

Class View

The Class View displays all the used Library Objects with their instances for the project, independent of which controller each Object instance belongs to.

Objects are organized by the Library Object catalog numbers and show the instances below them.

Users can NOT add, copy, or delete any Object instances. Users can NOT generate code from this view. Users can generate reports from this view.

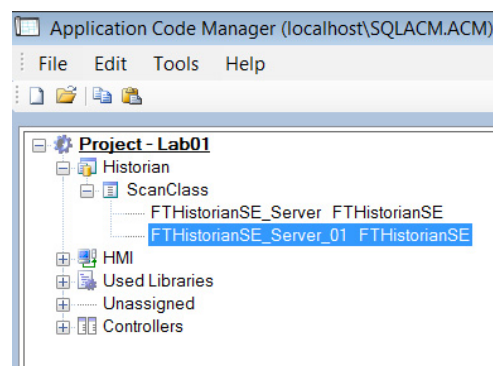
Historian Branch

The **Historian** branch in the Main GUI Project Tree View contains all Historian ScanClass Objects (instances) in the Project.

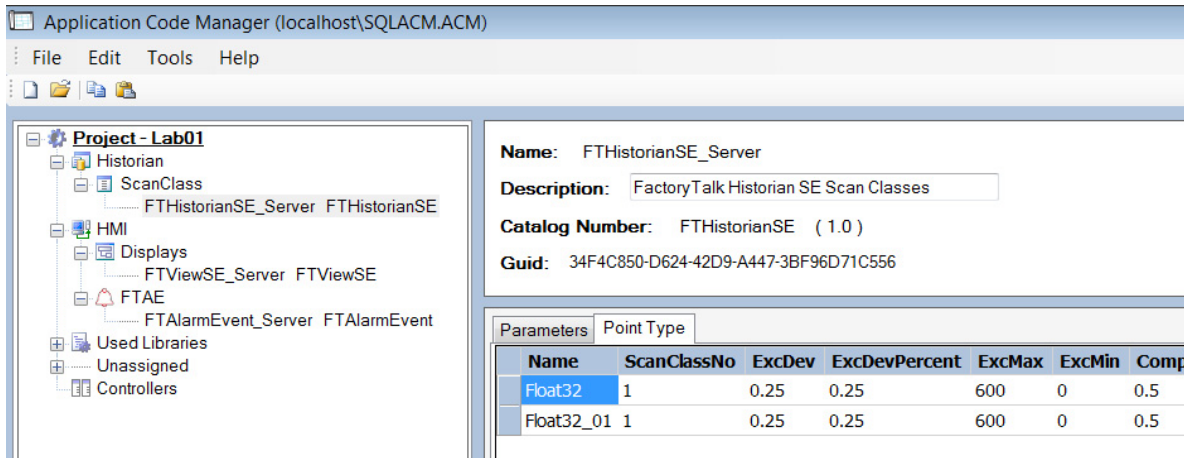
The Historian Objects are organized in a 4-level hierarchy:

Project > Historian > ScanClass > Object

The following Project includes two Historian_ScanClass Objects (instances). For the second instance, the Object (instance) Name is FTHistorianSE_Server_01 and the Library (class) Name is FTHistorianSE.



The Historian Scan Class definitions are SubObjects in the FT_Historian01 Object (instance).



HMI Branch

The **HMI** branch in the Main GUI Project Tree View contains all HMI Objects (instances) in the Project.

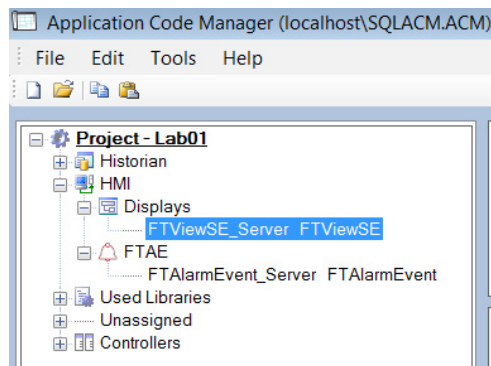
The HMI Objects are organized in a 4-level hierarchy:

Project > HMI > Displays > Object

and

Project > HMI > FTAE > Object

The following Project includes Objects (instances) in two Library Categories (Displays and FactoryTalk® Alarms and Events [FTAE]).



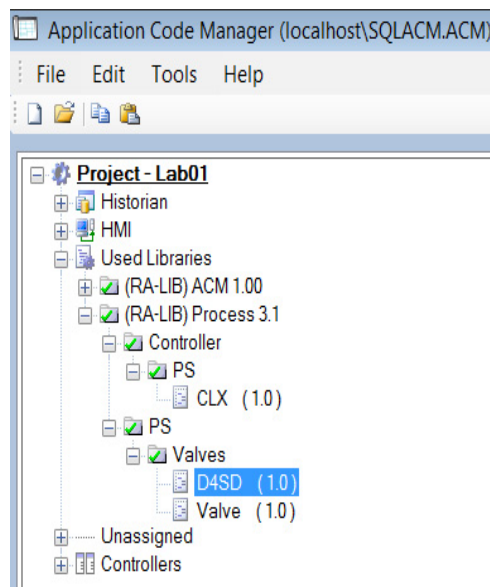
Used Libraries Branch

The **Used Libraries** branch in the Main GUI Project Tree View displays the Libraries (classes) that are used in the Project.

The Libraries are organized in a 4-level hierarchy:

- > Solution
 - > Library Type
 - > Library Category
 - > Library Catalog Number (Library Version)

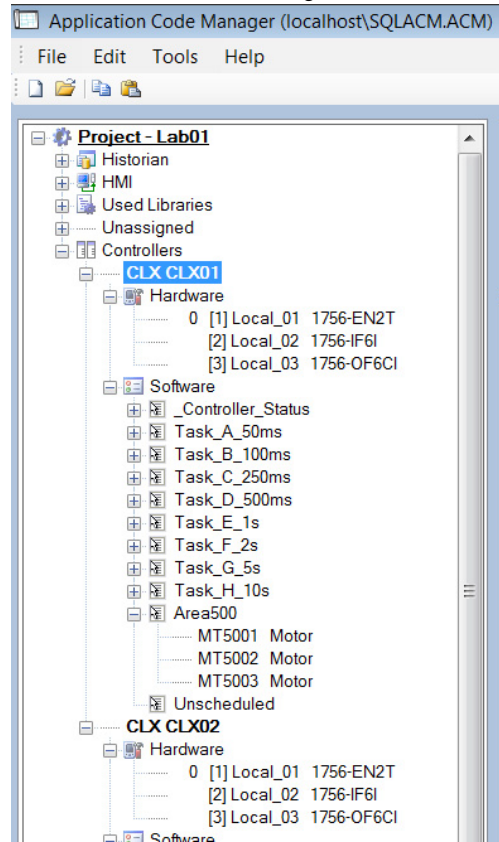
The following Project includes at least one Valve Object (instance) and at least one D4SD valve Object (instance).



Controllers Branch

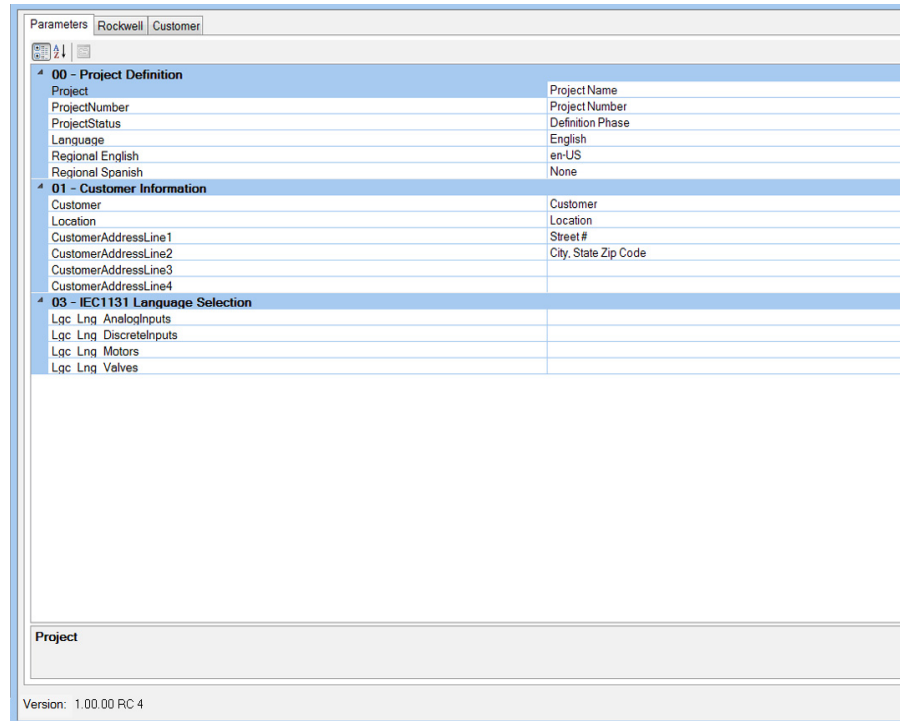
The **Controllers** branch in the Main GUI Project Tree View contains all Controller Objects (instances) in the Project.

The following Project includes two Controller Objects (CLX01 and CLX02). The controller organization is determined by the Solution selected for the controller. CLX01 is configured with the (RA-LIB) Process 3.1 Solution Library.




Main GUI Object Parameter Dialog

The Main GUI Object Parameter dialog displays the Parameters and SubObjects for the currently selected Object. The dialog for a typical Project Object is shown below.



The Parameters for the Object highlighted in the Main GUI Project Tree View are displayed on the Parameters tab.

Parameters can be displayed in groups (for example, 00 – Project Definition) or alphabetically by clicking the appropriate sort button:

 - Sort in Groups

 - Sort Alphabetically

The Parameter name (for example, ProjectStatus) is shown in the column on the left and the Parameter value (for example, Definition Phase) is shown in the column on the right. Parameter values can be changed by typing a new value in the right column.

A description of the selected parameter is displayed at the bottom of the Main GUI Object Parameter Dialog.

The **Apply changes** command is available when an Object or SubObject Parameter value is changed. Click the **Apply changes** command to save the changes to the ACM Database.

The ACM version is also shown in the Main GUI Object Parameter dialog.

SubObject Parameters Tab

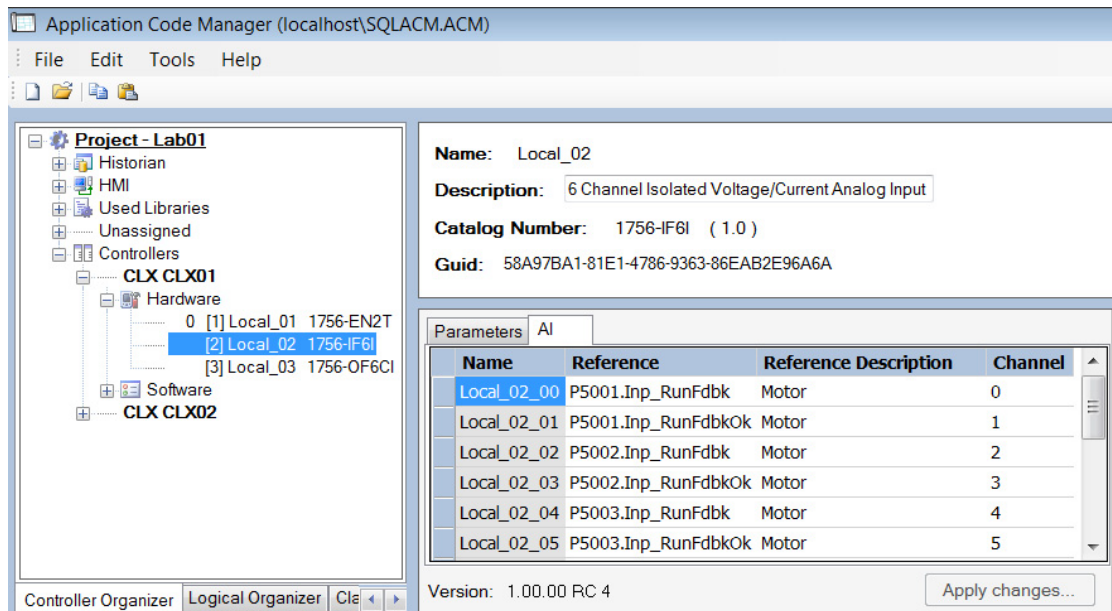
Some Objects have additional tabs for SubObject Parameters (for example, Rockwell contacts). SubObject Parameters are shown on a **SubObject Parameters** tab. The tab is labeled with the SubObject Display Name.

Each row in the **SubObject Parameters** tab represents a SubObject (instance).

The SubObject name is shown in the Name column. Additional columns display the SubObject Parameters (for example, Company, Function). The SubObject name and the SubObject Parameter values can be changed by typing a new value below the column header.

The SubObject name can be configured as read-only. When the SubObject name is read-only, the value is shown dimmed.

The Local_04 DO (Digital Outputs) **SubObject Parameters** tab is shown below.



By default, the SubObjects are sorted alphabetically by name. The SubObjects can be sorted in groups by clicking on a column header. Execute the Reset Grouping command in the SubObjects context menu to apply the default sorting. Refer to [SubObject Context Menu on page 72](#) for more information.

Double-clicking on a column header border will resize the column width.

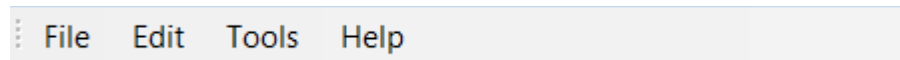
Main GUI Menu Bar

Chapter Objectives

This chapter provides information on the following topics:

- [Main GUI Button Bar](#)
- [Main GUI File Menu](#)
- [Main GUI Edit Menu](#)
- [Main GUI Tools Menu](#)
- [Main GUI Help Menu](#)

The Main GUI Menu Bar is shown below.



The following table describes the **Main GUI Menu Bar** selections.





| | |
|--------------|--|
| File | Create, open, and delete ACM Projects in the connected ACM Database. Refer to Main GUI File Menu on page 38 for more information. |
| Edit | Undo, redo, cut, copy, paste, and select commands. Refer to Main GUI Edit Menu on page 43 section for more information. |
| Tools | Provides commands to open the Import Export Manager, the Database Manager, and the Settings dialog. A command to log debug information in the ACM Log File and a command to view the ACM Log File is also provided. Refer to Main GUI Tools Menu on page 43 for more information. |
| Help | Access an online website and display information about the current ACM installation. Refer to Main GUI Help Menu on page 44 for more information. |

Main GUI Button Bar

The Main GUI Button Bar is shown below.

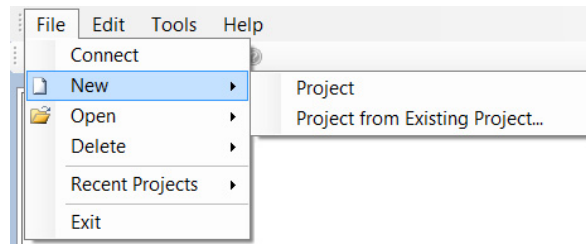


The following table describes each **Main GUI Button Bar** command.

| | |
|---|--|
|  | Refer to the New Project command in Main GUI File Menu on page 38 . |
|  | Refer to the Apply Changes command in Main GUI Object Parameter Dialog on page 35 . |
|  | Refer to the Copy command in Main GUI Edit Menu on page 43 . |
|  | Refer to the Paste command in Main GUI Edit Menu on page 43 . |

Main GUI File Menu

The Main GUI File Menu commands are as shown below.

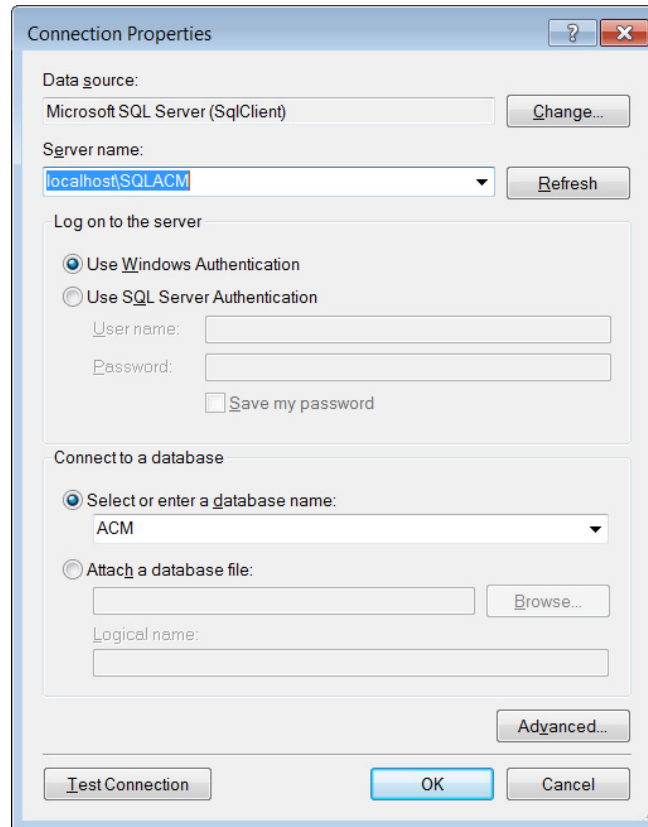


The following table describes the **Main GUI File Menu** commands.

| | |
|---|---|
| Connect | Connects the ACM to an ACM Database. Refer to Connecting to an ACM Database on page 39 for more information. |
| New Project | Creates a new Project in the connected ACM Database. Refer to Creating a New Project on page 41 for more information. |
| New Project from Existing Project... | Copies an existing Project to a new Project in the connected ACM Database. Refer to Copying an Existing Project on page 42 for more information. |
| Open | Opens an existing Project in the connected ACM Database. Choose an ACM Project from the list. |
| Delete | Deletes an existing Project in the connected ACM Database. Choose an ACM Project from the list. Important: Deleted Projects cannot be recovered. |
| Recent Projects | Opens a recent project. Choose an ACM Project from the list. |
| Exit | Closes the ACM application. |

Connecting to an ACM Database

Display the Connection Properties dialog by executing the Connect command in the Main GUI File Menu.



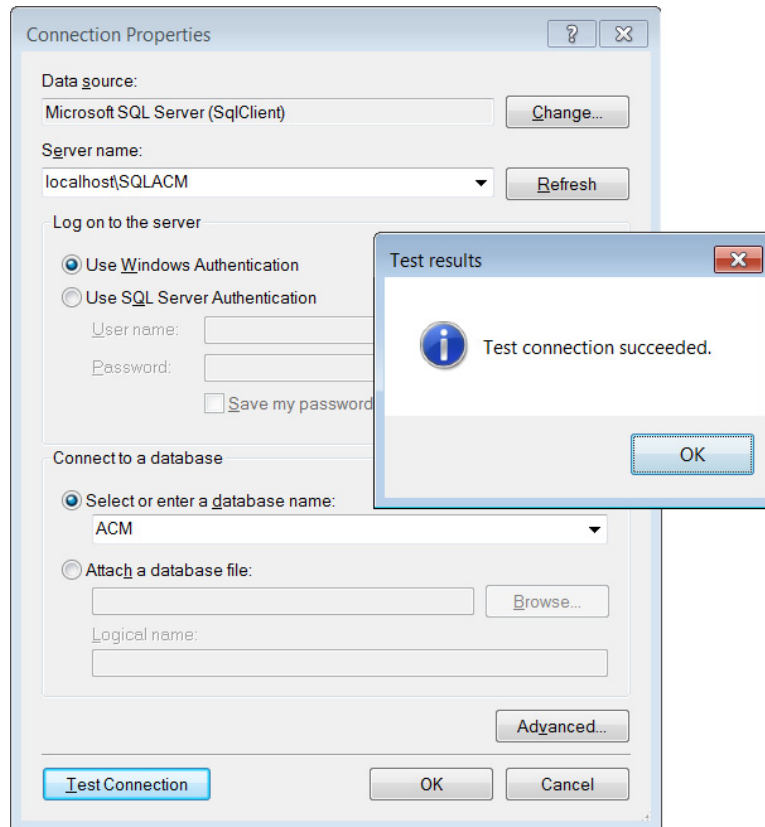
The following table describes the contents of the **Connection Properties** dialog.

| | |
|---|---|
| Data source: | Database type. Always select Microsoft SQL Server (SqlClient). |
| Server name: | Selects a computer name and SQL server instance from a pull-down list or enter a computer name and SQL server instance in the following format: <Computer Name> \ <SQL Server Instance> |
| Log on to the server Use Window Authentication | Allows SQL server log on using Windows authentication. |
| Log on to server Use SQL Server Authentication | Allows SQL server log on using SQL server authentication. |
| Connect to a database Select or enter a database name: | Select a database name from a pull-down list or enter a database name. |
| Connect to a database Attach a database file: | Type a database file name or use the Browse button to search for a file. |
| Test Connection | Tests the connection to the database. If a "Test connection succeeded." message is not returned, check the following: <ul style="list-style-type: none"> • Computer name • SQL Server authentication • Network access (remote SQL Server) |
| Advanced | Select to specify advanced connections to the database. |

Enter a computer name, a SQL server instance, and the SQL server authentication. Contact the database administrator for the computer name, the SQL server instance, and the SQL server authentication if you did not install this SQL server instance.

Select or enter a database name. Contact the database creator for the database name if you did not create the database.

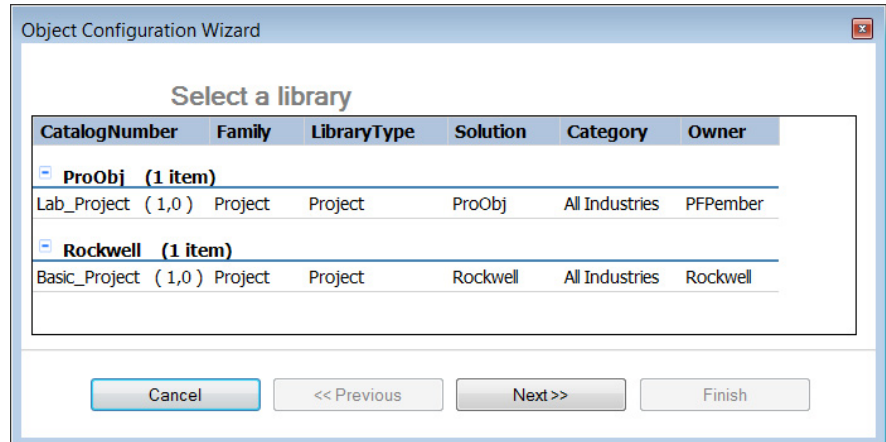
TIP After entering the Connection Properties, test the connection by executing the Test Connection command and confirm the correct database name is displayed in the Main GUI Title Bar. Refer to [Main GUI Title Bar on page 28](#) for more information.



Creating a New Project

Display the Object Configuration Wizard dialog by executing the New Project command in the **Main GUI File Menu**.

The **Object Configuration Wizard** is displayed.

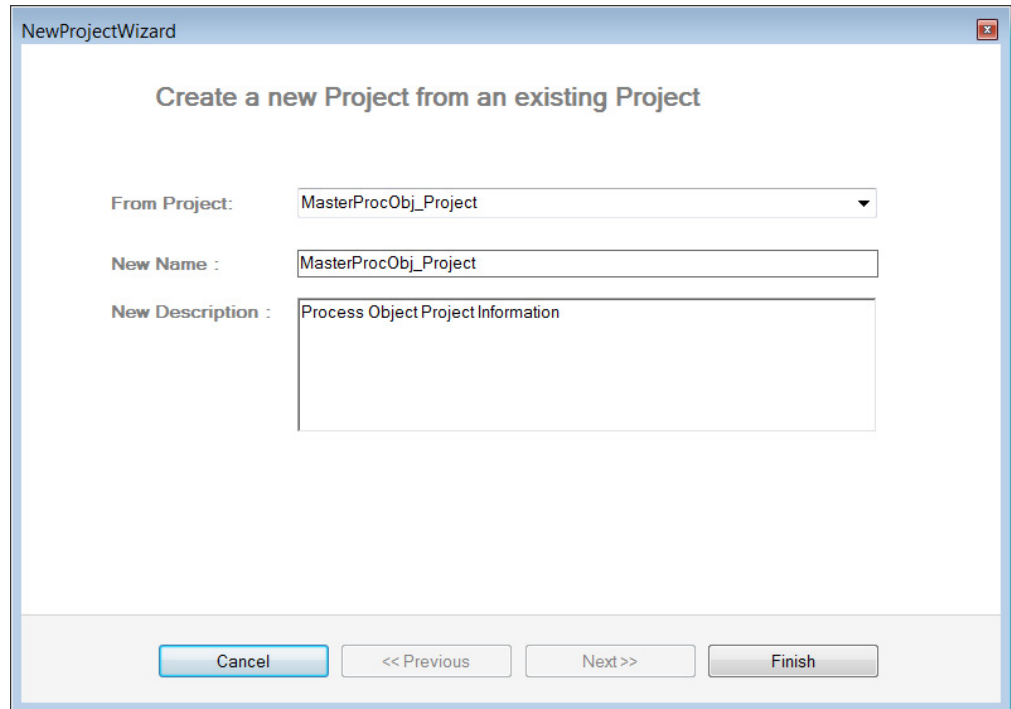


Click the + symbol to expand a Library Category and display the Project Libraries registered in the connected ACM Database.

Select a Project Library by highlighting a row and clicking **Next**.

Copying an Existing Project

Display the **New Project Wizard** dialog by executing the Project from the Existing Project command in the **Main GUI File Menu**.

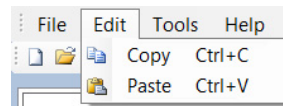


Select a Project in the connected ACM Database to be copied in the **From Project** pull-down list.

Type the **New Name** and **New Description** for the new Project and click **Finish**.

Main GUI Edit Menu

The Main GUI Edit Menu commands are shown below.

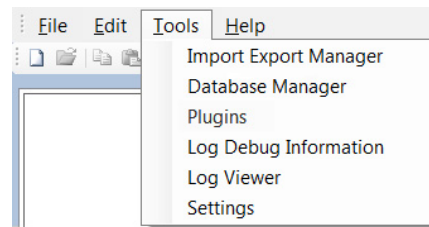


The following table describes each **Main GUI Edit Menu** command.

| | |
|--------------|-------------------------------------|
| Copy | Copies the selected Project Object. |
| Paste | Pastes the Project Object. |

Main GUI Tools Menu

The Main GUI Tools Menu commands are shown below.

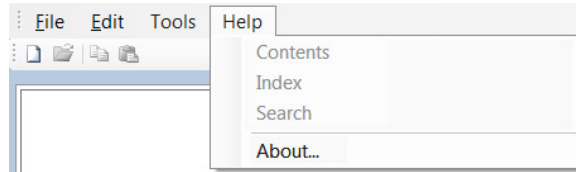


The following table describes each **Main GUI Tools Menu** command.

| | |
|------------------------------|---|
| Import Export Manager | Imports/exports ACM Project content to/from an Excel spreadsheet (Schedule). Use for bulk additions, duplications, changes; comparing versions; snapshots; backup customer parameter entry, and/or transferring project contents. Refer to Chapter 6, Import Export Manager for more information. |
| Database Manager | Creates deletes, upgrades, backs up, and restores ACM Databases. Refer to Chapter 7, Database Manager for more information. |
| Plugins | Provides access to ACM extensions, tools, or utilities not included with the ACM setup. This menu item is not available until a Plugin is installed. |
| Log Debug Information | When checked, debug information is included in the ACM Log File. Information is written to the ACM Log File when design outputs are generated (for example, ControlLogix [®] , FactoryTalk [®] View, FactoryTalk Historian, Word) or when Schedules are imported or exported. |
| Log Viewer | Displays the contents of the most recent ACM Log File. A new ACM Log File is created for each ACM session. |
| Settings | Opens the Settings dialog. The Documentation Template folder is configured in the Settings dialog. |

Main GUI Help Menu

The Main GUI Help Menu commands are shown below.



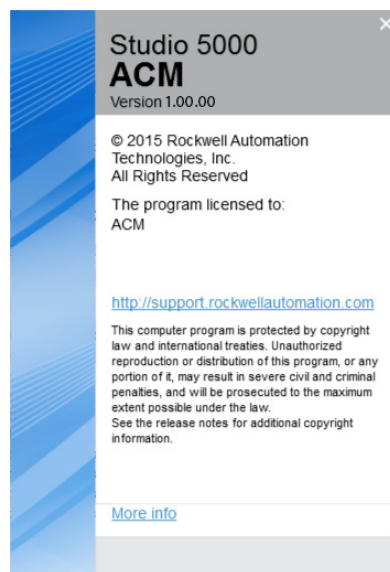
The following table describes each **Main GUI Help Menu** command.

| | |
|-----------------|--|
| Contents | Not available |
| Index | Not available |
| Search | Not available |
| About... | Displays the About Application Code Manager dialog. Refer to Interpreting the About Application Code Manager Dialog on page 44 for more information. |

Interpreting the About Application Code Manager Dialog

Display the **About Application Code Manager** dialog by executing the About command in the Main GUI Help Menu.

The **About Application Code Manager** dialog displays the ACM version, copyright information, activation information, and support information.



Main GUI Context Menu Commands

Chapter Objectives

This chapter provides information on the following topics:

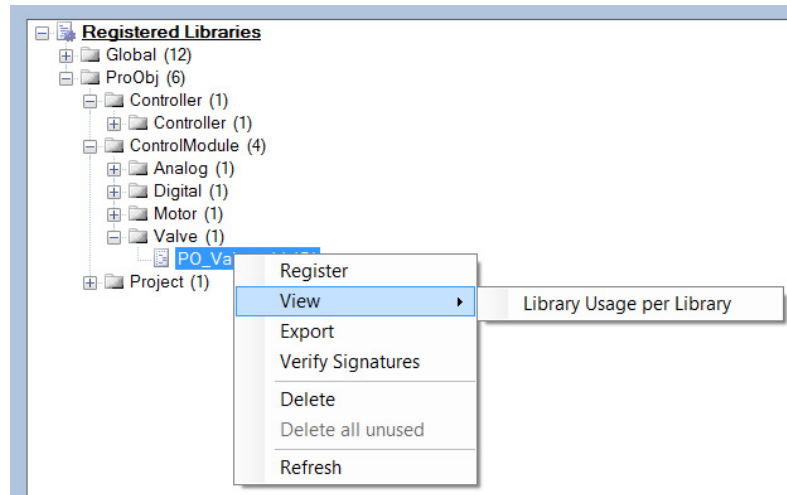
- [Registered Libraries Context Menu](#)
- [Project Context Menu](#)
- [HMI Context Menu](#)
- [HMI Category Context Menu](#)
- [HMI Object Context Menu](#)
- [Historian Context Menu](#)
- [Historian Category Context Menu](#)
- [Historian Object Context Menu](#)
- [Project Libraries Context Menu](#)
- [Controller Context Menu](#)
- [Hardware Context Menu](#)
- [Software Branch Context Menu](#)
- [SubObject Context Menu](#)

Each section describes the commands in a single Main GUI Context Menu.

Main GUI Context Menus are opened by right-clicking particular Objects in the Main GUI.

Registered Libraries Context Menu

The Registered Libraries Context Menu is available by right-clicking any branch in the Registered Libraries tree view.



The following table describes each **Registered Libraries Context Menu** command.

| | |
|--|---|
| Register | Registers one or more library files (HSL4). Refer to Registering an ACM Library on page 47 for more information. |
| View Library Usage | Displays a report showing the Registered Library usage for the Libraries in the connected ACM Database. Available only at the Registered Libraries branch. Refer to Viewing Registered Library Usage on page 96 for more information. |
| View Library Usage per Solution | Displays a report showing the Registered Library usage for the Libraries in the selected Solution. Available only at a Solution branch. Refer to Viewing Registered Library Usage on page 96 for more information. |
| View Library Usage per Library Type | Displays a report showing the Registered Library usage for the Libraries in the selected Library Type. Available only at a Library Type branch. Refer to Viewing Registered Library Usage on page 96 for more information. |
| View Library Usage per Category | Displays a report showing the Registered Library usage for the Libraries in the selected Library Category. Available only at a Library Category branch. Refer to Viewing Registered Library Usage on page 96 for more information. |
| View Library Usage per Library | Displays a report showing the Registered Library usage for the selected Library. Available only at a Library branch. Refer to Viewing Registered Library Usage on page 96 for more information. |
| Export | Exports the selected Library to an HSL4 (xml) formatted file. Available only at the Library Catalog Number branch. |
| Verify Signatures | Verifies that the contents within each registered Library file comply with any signing rules and originated from an approved source. |
| Delete | Deletes the selected library in the connected ACM Database. Libraries that are used in Projects cannot be deleted. A Global Library usage report will be displayed when a Library that is used is selected for deletion. |
| Delete all unused | Deletes all unused Libraries in the connected ACM Database. Available only at the Registered Libraries branch. |
| Refresh | Refreshes the Registered Libraries tree view. |

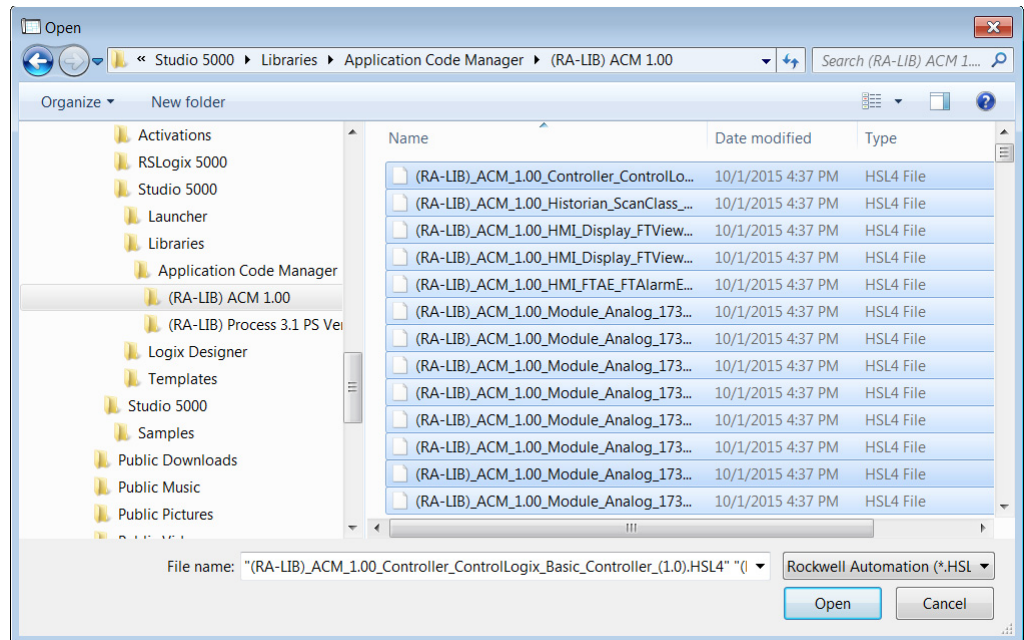
Registering an ACM Library

Verify that the ACM application is connected to the correct ACM Database by examining the Main GUI Title Bar. Refer to [Main GUI Title Bar on page 28](#) for more information.

Display the **Open** dialog by executing the **Register** command in the **Registered Libraries Context Menu** and select one or more Library files (HSL4) to be registered.

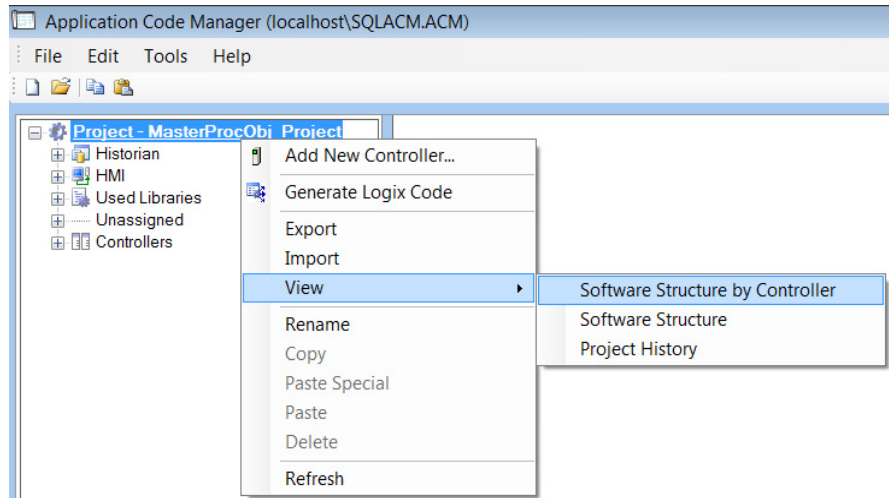
TIP The **Register** command can be executed from any context menu in the Main GUI Registered Library tree view: right-click to open the context menu. The location of a Library in the Main GUI Registered Library tree view is defined in the Library file (HSL4).

Click **Open**.



Project Context Menu

The Project Context Menu is available by right-clicking the Project branch in the Main GUI Project tree view.



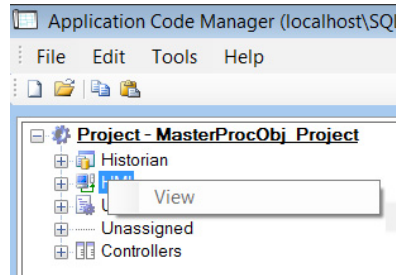
The following table describes each **Project Context Menu** command.

| | |
|--|---|
| Add New Controller... | Adds a new Controller Object (instance) to the Project. Refer to Adding a New Controller on page 60 for more information. |
| Generate Logix Code | Generates logix code (for example, L5X) for the selected Controller. |
| Export | Starts the Import Export Manager and configures the Import Export Manager dialog to export the Project. Refer to Chapter 6, Import Export Manager for more information. |
| Import | Starts the Import Export Manager. Refer to Chapter 6, Import Export Manager for more information. |
| View Software Structure by Controller | Displays a report showing a list of Control Modules used in the Project and sorted by: 1. Controller 2. Task 3. Program 4. Object Refer to Viewing Software Structure in Chapter 8 for more information. |
| View Software Structure | Displays a report showing a list of Control Modules used in the Project and sorted by: 1. Task 2. Program 3. Object 4. Controller Refer to Viewing Software Structure on page 97 for more information. |
| View Project History | Displays a report showing the Project History. Refer to Viewing Software Structure on page 97 for more information. |
| Rename | Highlights the Project name so it can be edited. |
| Copy | Refer to the New Project from Existing Project command in Main GUI File Menu on page 38 . |
| Paste Special | Not available |

| | |
|----------------|--|
| Paste | Not available |
| Delete | Not available Refer to the Delete command in Main GUI File Menu on page 38 . |
| Refresh | Refreshes the Main GUI for the Project. |

HMI Context Menu

The HMI Context Menu is available by right-clicking the HMI branch in the Main GUI Project tree view.

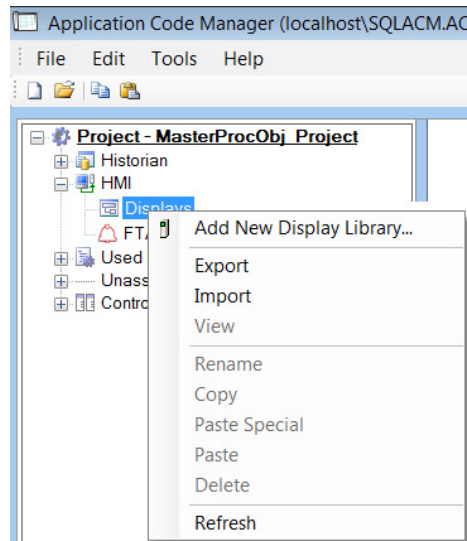


The following table describes each **HMI Context Menu** command.

| | |
|-------------|---------------|
| View | Not available |
|-------------|---------------|

HMI Category Context Menu

The HMI Category Context Menu is available by right-clicking an HMI Category (for example, Colors, Displays) branch in the Main GUI Project tree view.



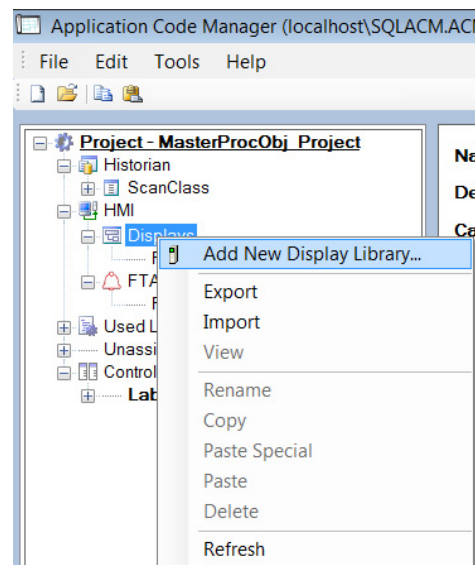
The following table describes each **HMI Category Context Menu** command.

| | |
|--|---|
| Add New <HMI Category> Library... | Adds a new Object (instance) to the selected HMI Category. Refer to Adding a New HMI Object on page 50 for more information. |
| Export | Starts the Import Export Manager. Refer to Chapter 6, Import Export Manager for more information. |
| Import | Starts the Import Export Manager. Refer to Chapter 6, Import Export Manager for more information. |
| View | Not available |
| Rename | Not available |
| Copy | Not available |
| Paste Special | Not available |
| Paste | Not available |
| Delete | Not available |
| Refresh | Refreshes the Project tree view. |

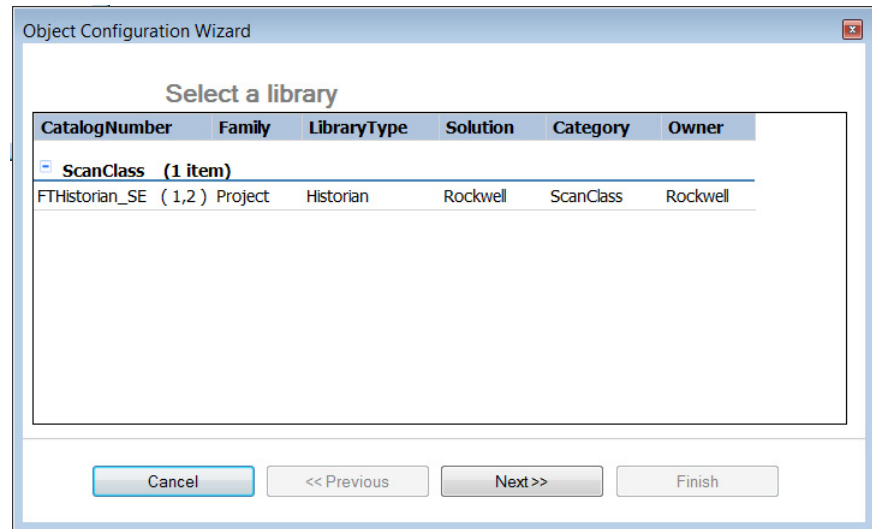
Adding a New HMI Object

Display the Object Configuration Wizard dialog by executing the **Add New <HMI Category> Library** command in the **HMI Category Context Menu**.

For example, to add an HMI_Displays Object, display the **HMI Category Context Menu** by right-clicking on the Displays category and selecting **Add New Display Library**.



The **Object Configuration Wizard** is displayed.

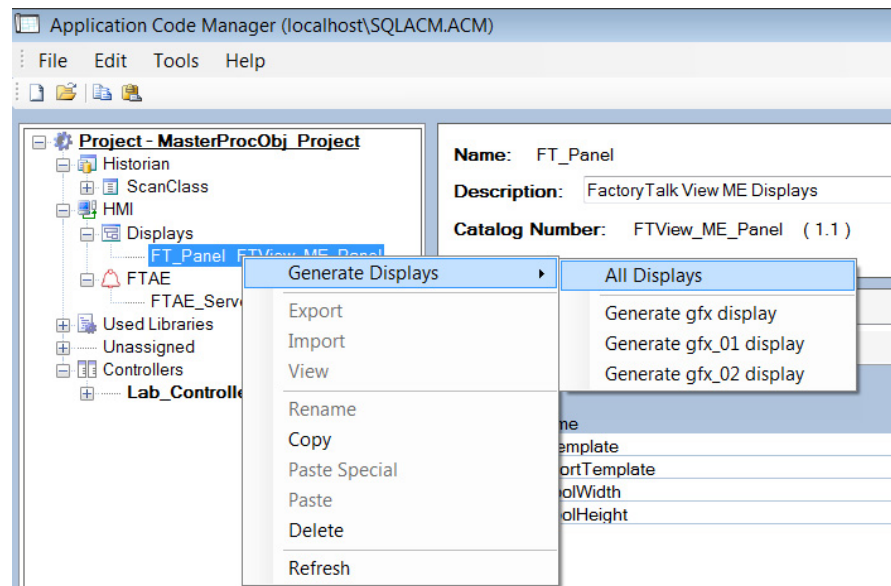


Click the + symbol to expand a Library Category and display the HMI Libraries registered in the connected ACM Database.

Select an HMI Library by highlighting a row and clicking **Next**.

HMI Object Context Menu

The HMI Object Context Menu is available by right-clicking an HMI Object (for example, SE_Server) branch in the Main GUI Project tree view.



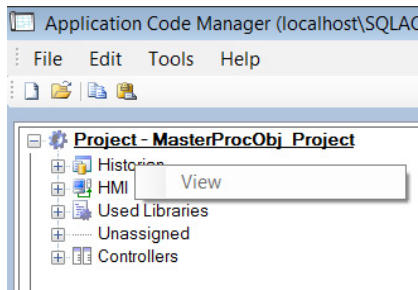
The following table describes each **HMI Object Context Menu** command.

| | |
|---|--|
| Generate Displays All Displays | Generates the HMI design output for all Display SubObjects using the Templates specified in the HMI Object Parameters. |
| Generate Displays Generate <Display> display | Generates the HMI design output for the selected Display SubObject using the Templates specified in the HMI Object Parameters. |

| | |
|----------------------|----------------------------------|
| Export | Not available |
| Import | Not available |
| View | Not available |
| Rename | Renames the selected Object. |
| Copy | Copies the selected Object. |
| Paste Special | Not available |
| Paste | Not available |
| Delete | Deletes the selected Object. |
| Refresh | Refreshes the Project tree view. |

Historian Context Menu

The Historian Context Menu is available by right-clicking the Historian branch in the Main GUI Project tree view.

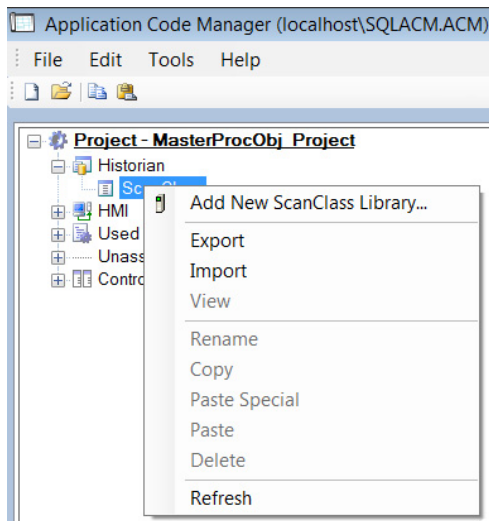


The following table describes each **Historian Context Menu** command.

| | |
|-------------|---------------|
| View | Not available |
|-------------|---------------|

Historian Category Context Menu

The Historian Category Context Menu is available by right-clicking a Historian Category (for example, ScanClass) branch in the Main GUI Project tree view.



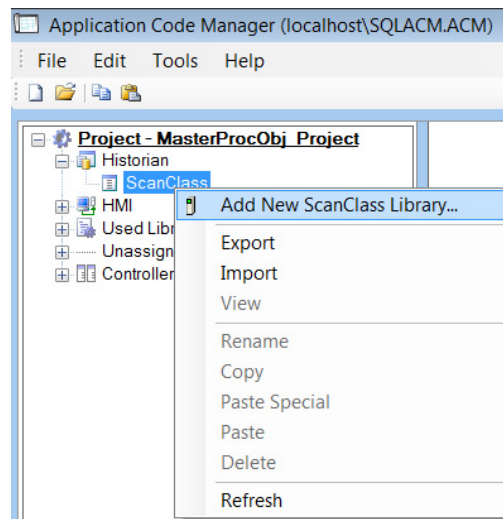
The following table describes each **Historian Category Context Menu** command.

| | |
|--|---|
| Add New <Historian Category> Library... | Adds a new Object (instance) to the selected Historian Category. Refer to Adding a New Historian Object on page 53 for more information. |
| Export | Starts the Import Export Manager. Refer to Chapter 6, Import Export Manager for more information. |
| Import | Starts the Import Export Manager. Refer to Chapter 6, Import Export Manager for more information. |
| View | Not available |
| Rename | Not available |
| Copy | Not available |
| Paste Special | Not available |
| Paste | Not available |
| Delete | Not available |
| Refresh | Refreshes the Project tree view. |

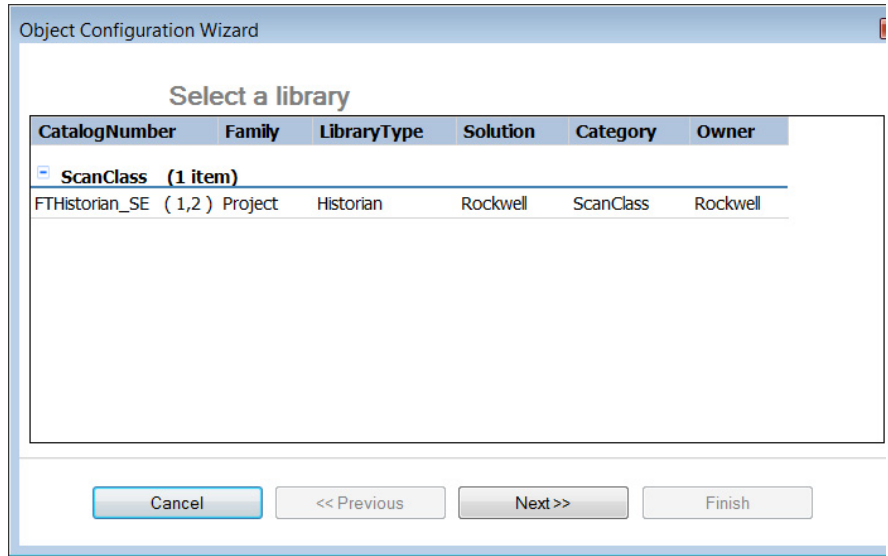
Adding a New Historian Object

Display the Object Configuration Wizard dialog by executing the **Add New <Historian Category> Library** command in the **Historian Category Context Menu**.

For example, to add a Historian_ScanClass Object, display the **Historian Category Context Menu** by right-clicking on the ScanClass category and selecting **Add New ScanClass Library**.



The **Object Configuration Wizard** is displayed.

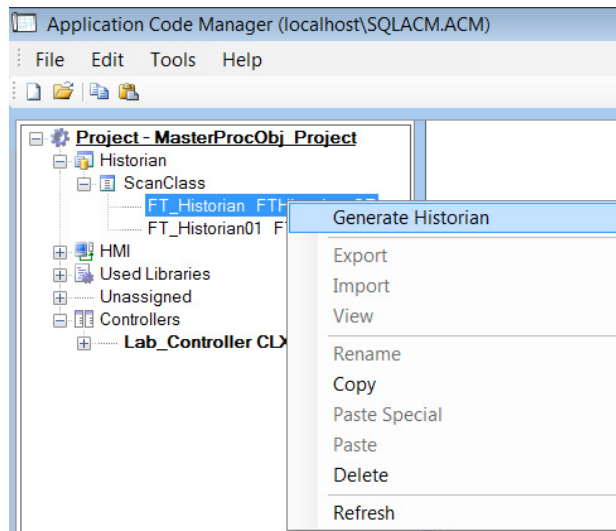


Click the + symbol to expand a Library Category and display the Historian Libraries registered in the connected ACM Database.

Select a Historian Library by highlighting a row and clicking **Next**.

Historian Object Context Menu

The Historian Object Context Menu is available by right-clicking a Historian Object branch in the Main GUI Project tree view.



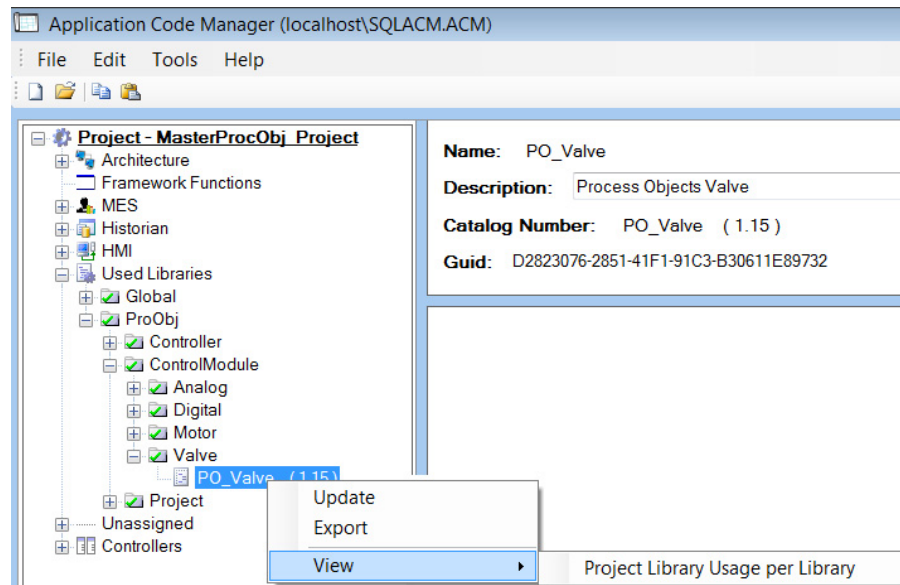
The following table describes each **Historian Object Context Menu** command.

| | |
|---------------------------|---|
| Generate Historian | Generates the Historian design output for all Display SubObjects using the Template specified in the Historian Object Parameters. |
| Export | Not available |
| Import | Not available |
| View | Not available |

| | |
|----------------------|----------------------------------|
| Rename | Renames the selected Object. |
| Copy | Copies the selected Object. |
| Paste Special | Not available |
| Paste | Not available |
| Delete | Deletes the selected Object. |
| Refresh | Refreshes the Project tree view. |

Project Libraries Context Menu

The Project Libraries Context Menu is available by right-clicking any Library branch in the Main GUI Project tree view.



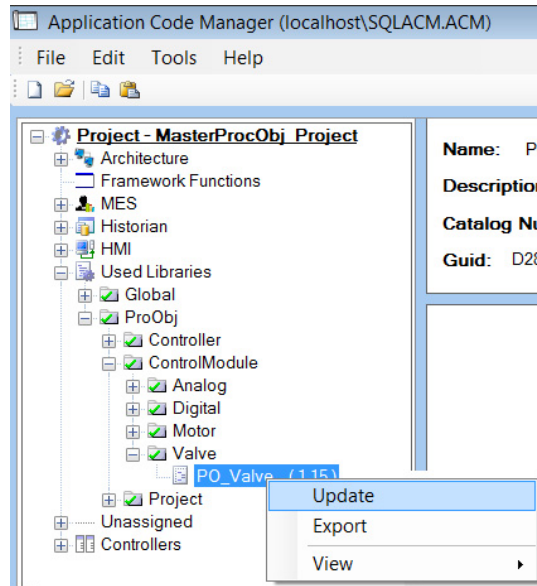
The following table describes each **Project Libraries Context Menu** command.

| | |
|--|--|
| Update | Updates all instances of the selected Library or Libraries in the current Project. Refer to Updating a Project Library on page 56 for more information. |
| Export | Exports the selected Library. Exports the Library to an HSL4 (xml) formatted file. |
| View Library Instance for <Library> | Displays a Library instance report for the selected Library. |
| View Library Instance Count for <Library> | Displays a Library instance count report for the selected Library. |

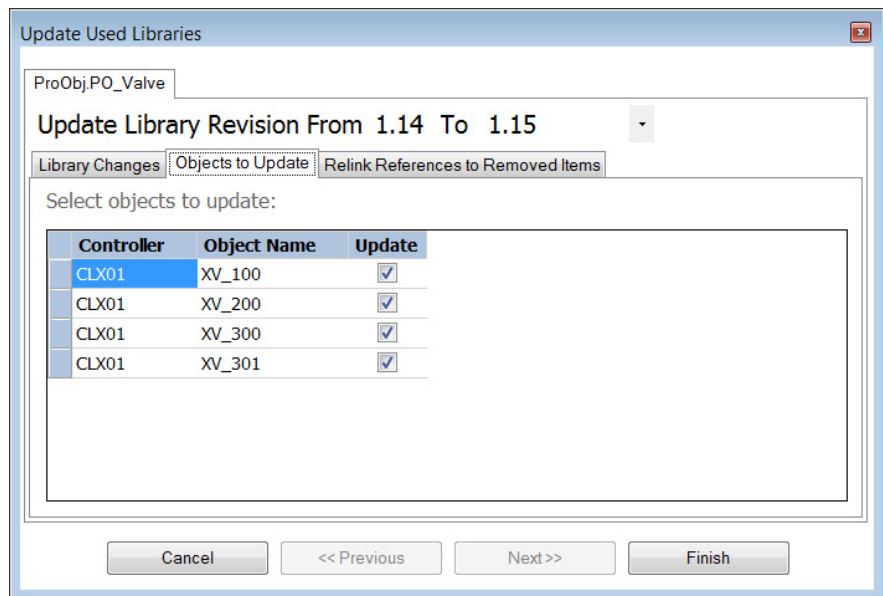
Updating a Project Library

Select a Project Library or Project Library Tree View branch containing the Libraries to be updated. Library versions are shown in parenthesis.

Execute the **Update** command in the **Project Libraries Context Menu**.

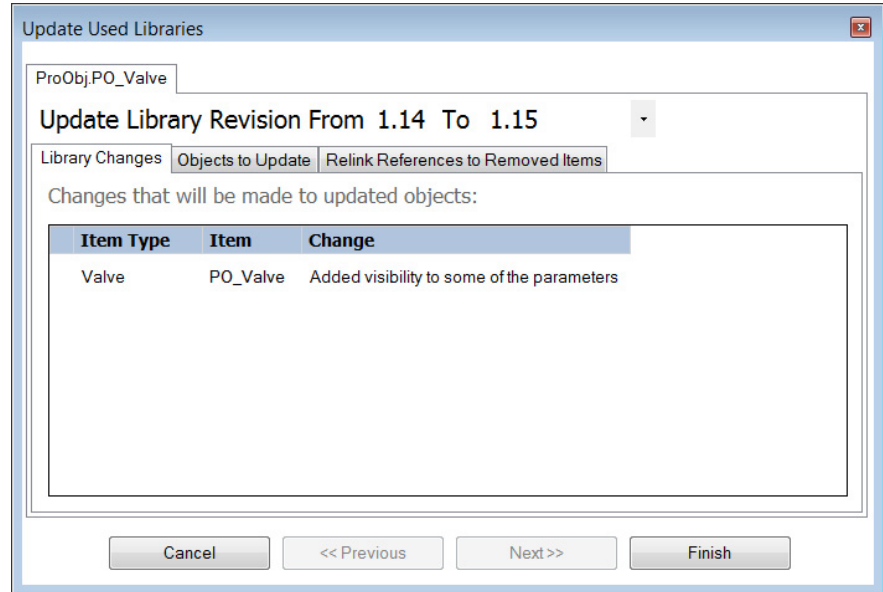


The **Update Used Libraries** dialog is displayed.

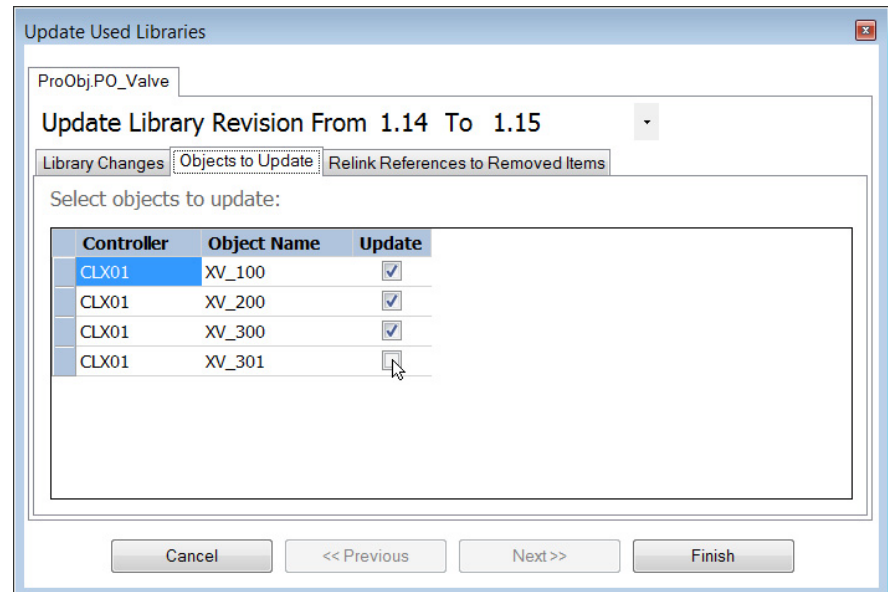


A tab is shown for each Library in the selected Project Library Tree View branch. Libraries with available updates will have a version shown in the “To” combo box. Select a new version using the combo box.

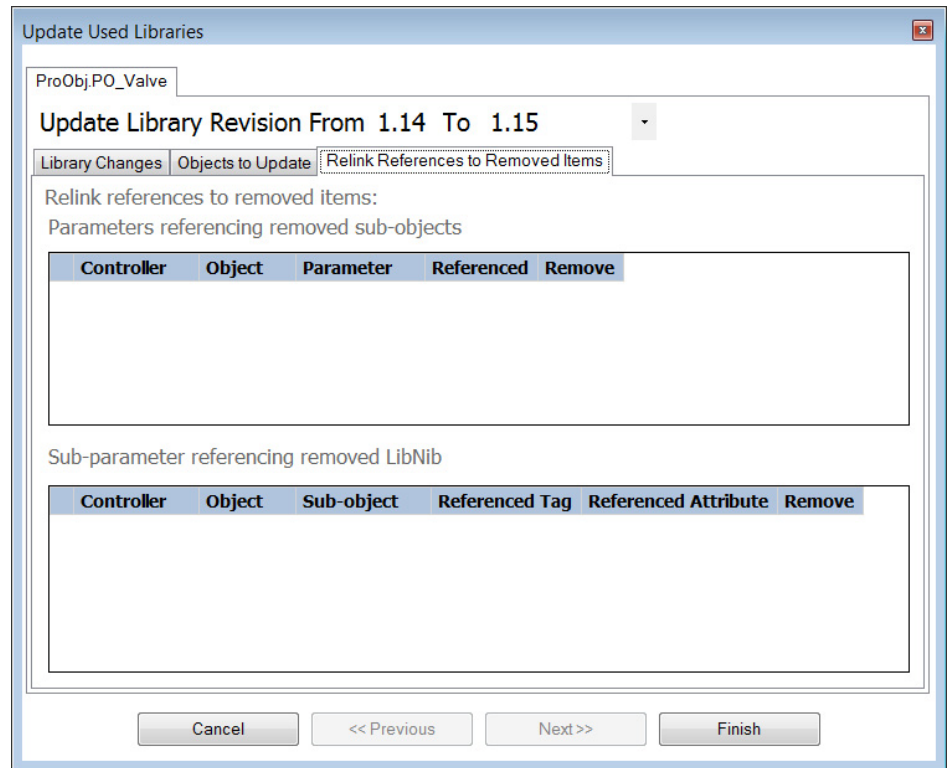
Parameter changes for the new version are identified on the **Library Changes** sub-tab.



Project Objects (instances) referencing the Project Library can be selected using the **Objects to Update** sub-tab.



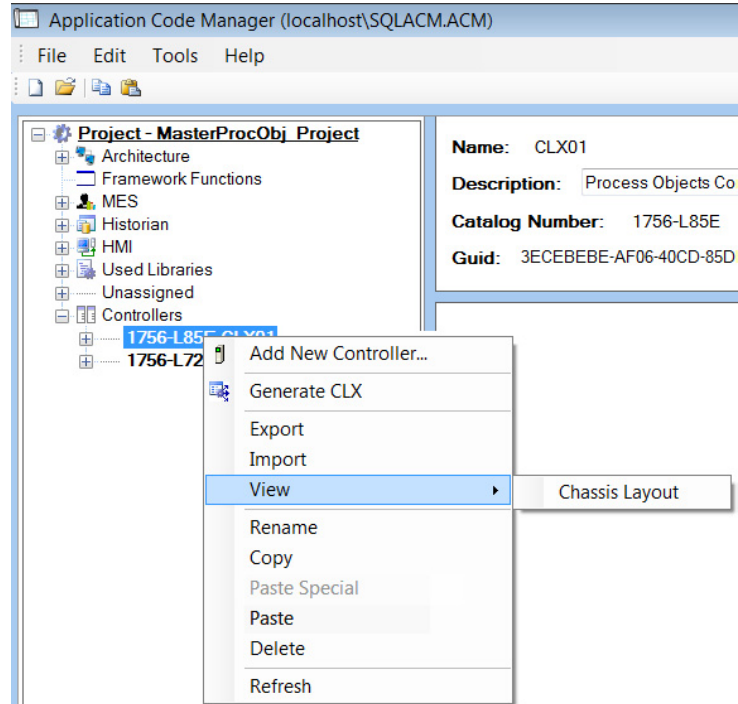
References to SubObjects and Nibs that were removed in the new Library version can be re-linked or removed using the **Relink References to Removed Items** sub-tab.



Click **Finish**.

Controller Context Menu

The **Controller Context Menu** is available by right-clicking any Controller branch in the Main GUI Project tree view.



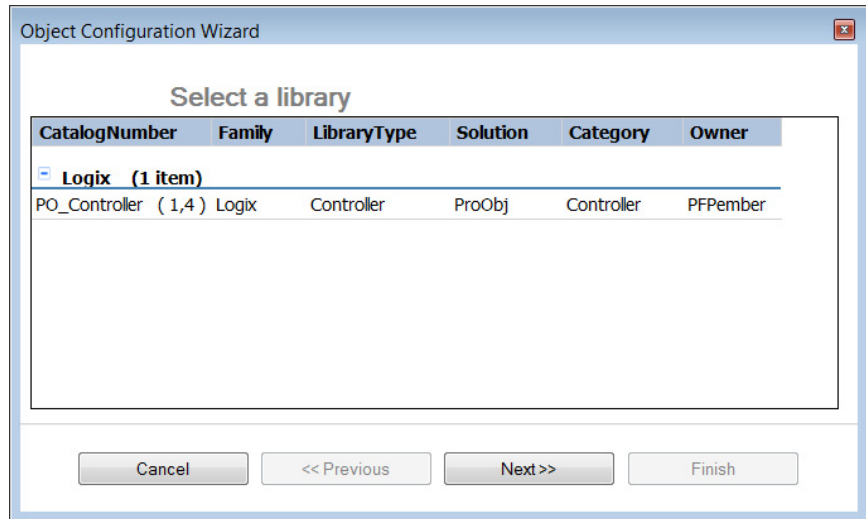
The following table describes each **Controller Context Menu** command.

| | |
|------------------------------|---|
| Add New Controller... | Adds a new Controller Object (instance). Refer to Adding a New Controller on page 60 for more information. |
| Generate Logix Code | Generates code (for example, L5X) for the selected Controller. |
| Export | Starts the Import Export Manager and configures the Import Export Manager dialog to export the selected Controller. Refer to Chapter 6, Import Export Manager for more information. |
| Import | Starts the Import Export Manager. Refer to Chapter 6, Import Export Manager for more information. |
| View Chassis Layout | Displays or prints a report with the I/O Modules in the Controller (local) chassis. Pastes the contents of the clipboard to the selected Controller with options. |
| Rename | Highlights the Controller name so it can be edited. |
| Copy | Copies the selected Controller to the clipboard. |
| Paste Special | Pastes the contents of the clipboard to the selected Controller with options. |
| Paste | Pastes the contents of the clipboard to the selected Controller. |
| Delete | Deletes the selected Controller. |
| Refresh | Refreshes the Project tree view. |

Adding a New Controller

Display the Object Configuration Wizard dialog by executing the **Add New Controller** command in the **Controllers Context Menu**.

The **Object Configuration Wizard** is displayed.

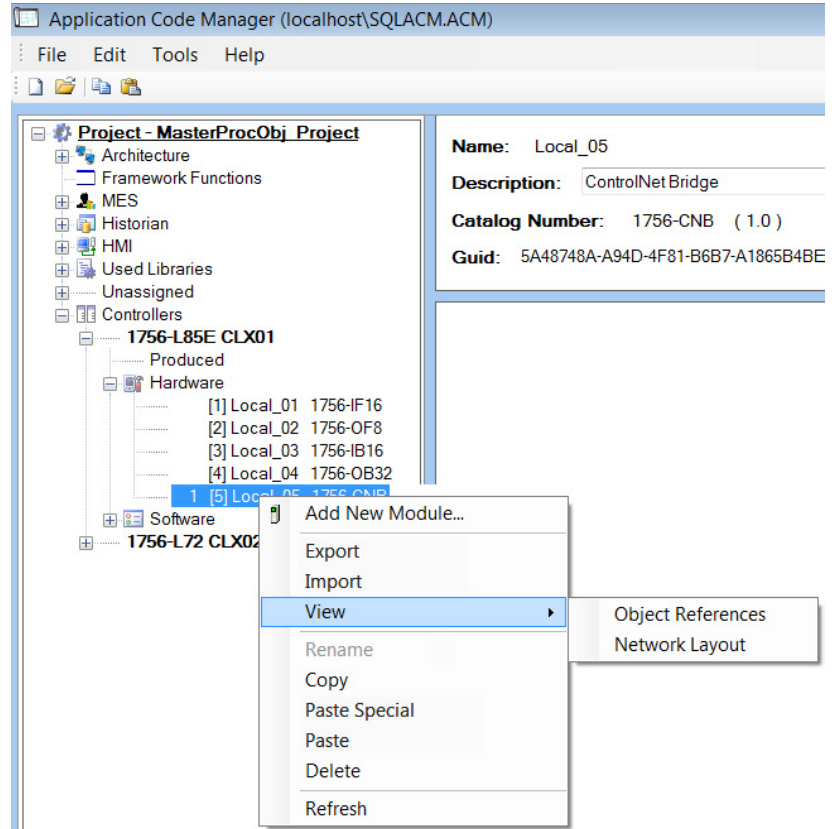


Click the + symbol to expand a Library Category and display the Controller Libraries registered in the connected ACM Database.

Select a Controller Library by highlighting a row and clicking **Next**.

Hardware Context Menu

The Hardware Context Menu is available by right-clicking any branch in the Hardware tree view.



The following table describes each **Hardware Context Menu** command.

| | |
|-----------------------------------|---|
| Add New Module... | Adds a new Hardware Module to the Controller (local) chassis or as a child to the selected communication Module. Available only at the Hardware branch or a communication Module branch. Refer to Adding a New Hardware Module on page 63 for more information. |
| Export | Starts the Import Export Manager and configures the Import Export Manager dialog for a Partial Controller Hardware export. Available only at the Hardware branch. Refer to Chapter 6, Import Export Manager for more information. |
| Import | Starts the Import Export Manager. Available only at the Hardware branch. Refer to Chapter 6, Import Export Manager for more information. |
| View Object References | Displays a report showing the Objects that refer to the selected Module. Not available at the Hardware branch. Refer to Chapter 8, Reports for more information. |
| View Network Layout | Displays a report showing the selected communication Module and the child communication Modules. Available only at a communication Module branch. Refer to Chapter 8, Reports for more information. |

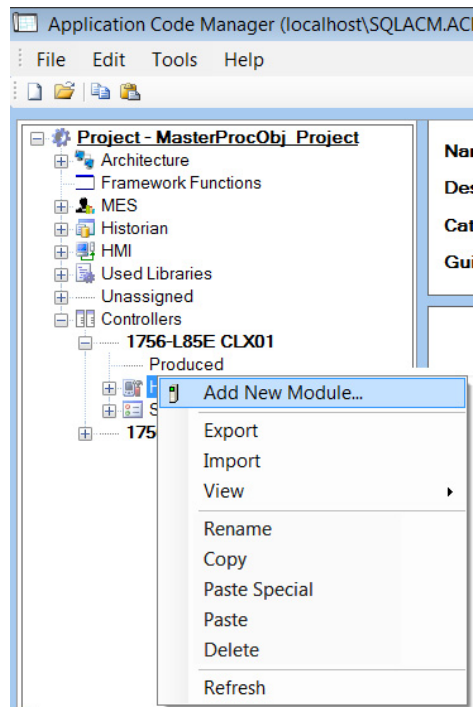
| | |
|---|--|
| View Chassis Layout | <p>Displays a report showing the child Modules for the Controller (local) chassis or the selected communication module.</p> <p>Available only at the Hardware branch or a “remote” communication Module branch.</p> <p>Refer to Chapter 8, Reports for more information.</p> |
| View Module I/O Schedule for Rack Module | <p>Displays a report showing the I/O channels and the Object Parameters that are referring to the I/O channels.</p> <p>Available only at an IO Module branch.</p> <p>Refer to Chapter 8, Reports for more information.</p> |
| Rename | Not available |
| Copy | <p>Copies the selected Module (and child Modules) to the clipboard.</p> <p>Not available at the Hardware branch.</p> <p>Refer to Using Copy and Paste Special with Hardware on page 64 for more information.</p> |
| Paste Special | <p>Pastes the Module in the clipboard to the Controller (local) chassis or as a child to the selected Module with an option to include Children and SubObjects.</p> <p>Refer to Using Copy and Paste Special with Hardware on page 64 for more information.</p> |
| Paste | <p>Pastes the Module in the clipboard to the Controller (local) chassis or as a child to the selected Module.</p> |
| Delete | <p>Deletes the selected Module (and child Modules).</p> <p>Modules that are referenced by other Objects cannot be deleted. A report showing the Objects that refer to the selected Module is displayed when a referenced Module is selected for deletion. Refer to Deleting a Referenced Hardware Module on page 66 for more information.</p> <p>Not available at the Hardware branch.</p> |
| Refresh | Refreshes the Hardware tree view. |

Adding a New Hardware Module

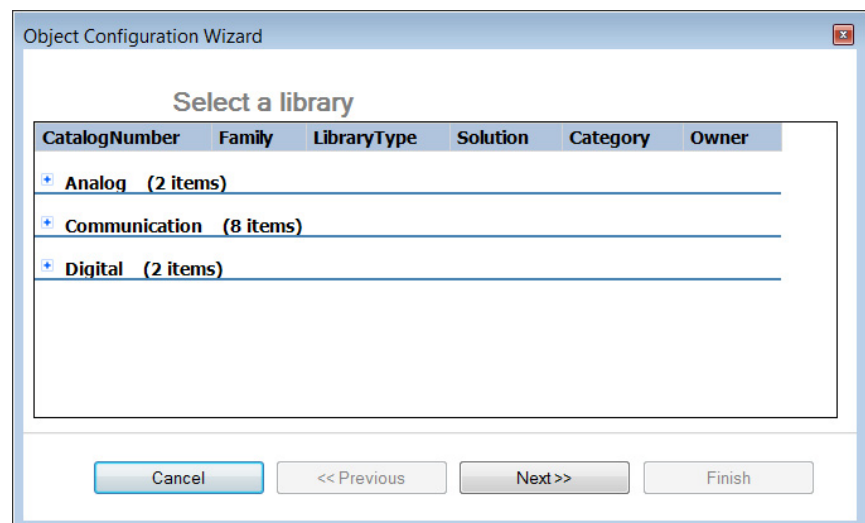
Determine the branch in the Hardware tree view, below which a module is to be added.

Display the **Hardware Context Menu** from the branch of the Hardware tree view below which a module is to be added.

For example, to add a remote communication module below the local communication module, display the **Hardware Context Menu** by right-clicking on the local communication module and selecting **Add New Module**.



The **Object Configuration Wizard** dialog is displayed.

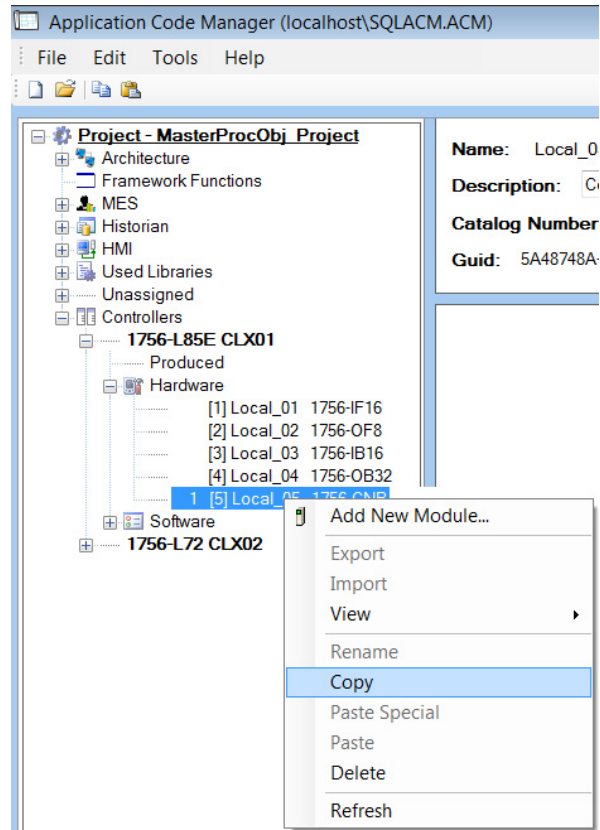


Click the + symbol to expand a Library Category and display the Libraries registered in the connected ACM Database.

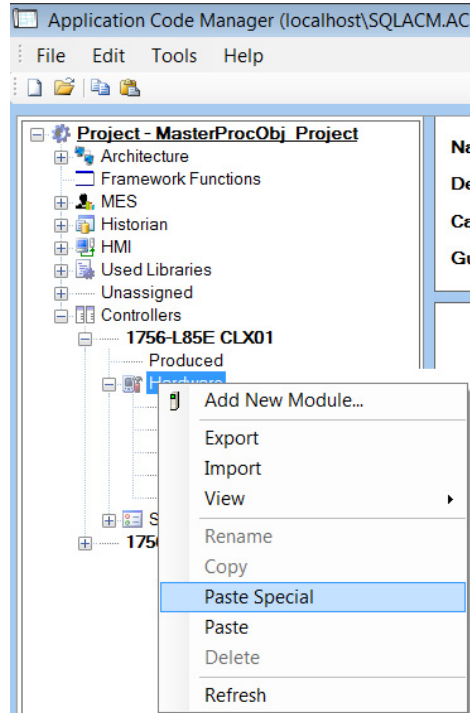
Select a Module Library by highlighting a row and clicking **Next**.

Using Copy and Paste Special with Hardware

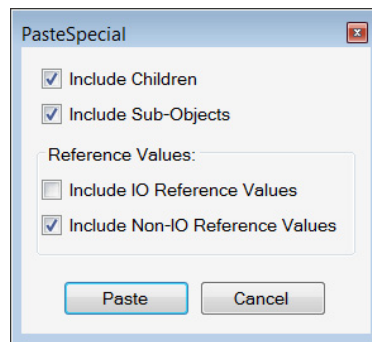
Copy an I/O Module or communication Module to the clipboard by executing the **Copy** command in the **Hardware Context Menu**.



To add the Module, display the **Hardware Context Menu** by right-clicking on the branch of the Hardware tree view below which the Module will be pasted and selecting **Paste Special**.



The PasteSpecial Children and SubObjects dialog is displayed.

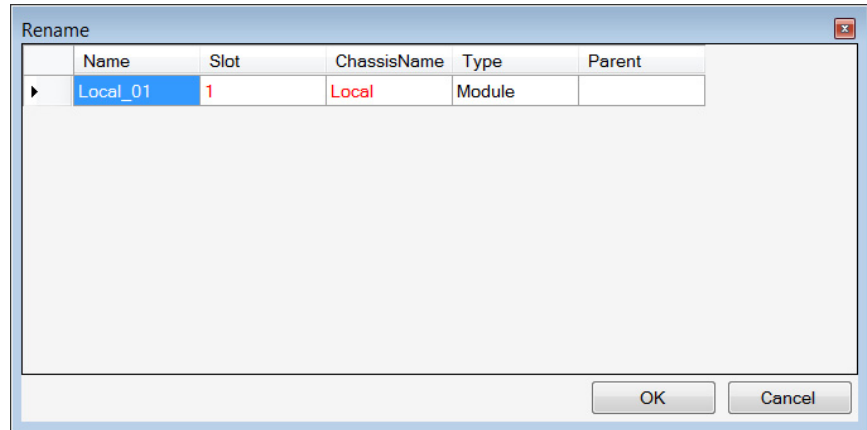


Check the **Include Children** check box to include Hardware Communication Module Children.

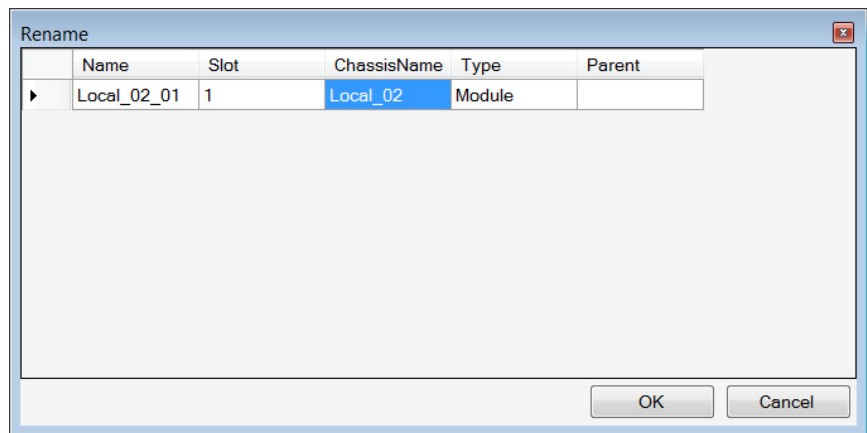
Check the **Include SubObjects** check box to include Hardware I/O Module SubObjects (for example, Channels).

Click **Paste** to continue.

The **Rename** dialog is displayed showing the Objects that will be pasted. The Object names that must be changed, to prevent an Object naming conflict, are shown in red.



Enter new Object names. The Object naming conflicts are shown in black when the naming conflicts are resolved.

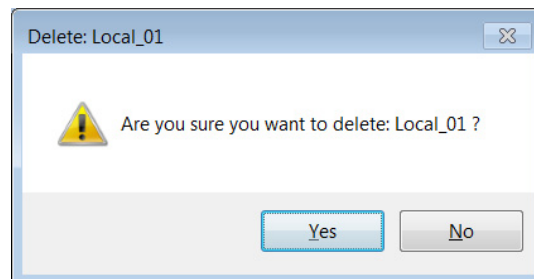


Click **OK**.

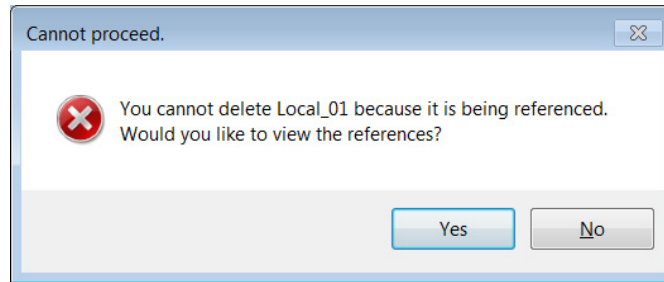
Deleting a Referenced Hardware Module

Execute the **Delete** command in the **Hardware Context Menu**.

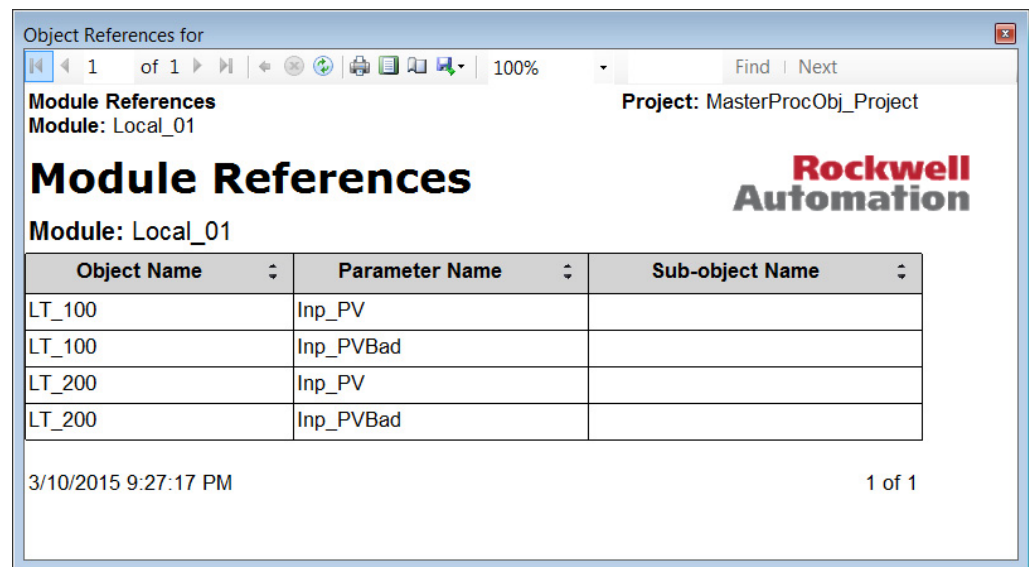
Click **Yes** to confirm.



If the Module is referenced by another Object, the **Cannot delete** dialog is displayed. Click **Yes** to view a report showing the Objects that refer to the selected Module.



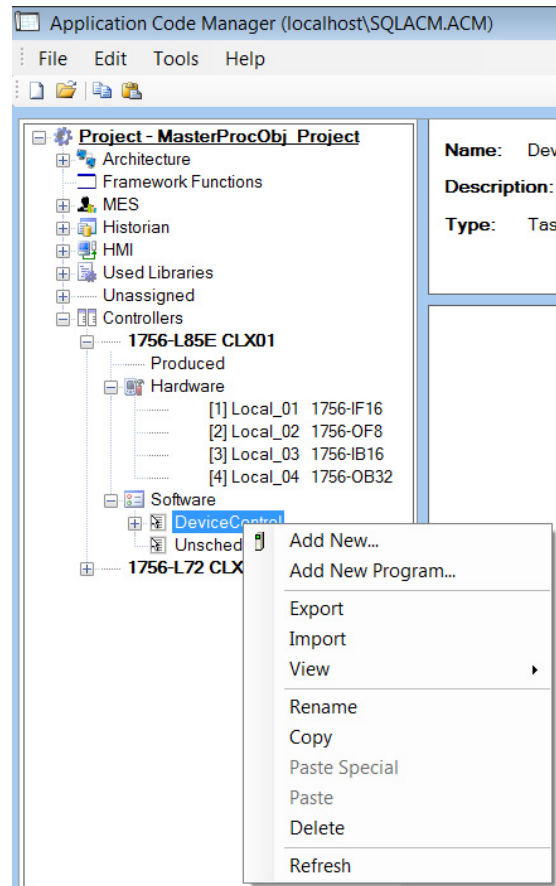
The **Module I/O Schedule** dialog is displayed for the Hardware I/O Module.



Remove all references to the Hardware I/O Module and execute the **Delete** command again.

Software Branch Context Menus

The Software Context Menus are available by right-clicking on any of the Software branches in the Main GUI Project tree view. Depending upon the selected branch or Object, the options available to the user on the context menu are enabled or disabled as applicable.



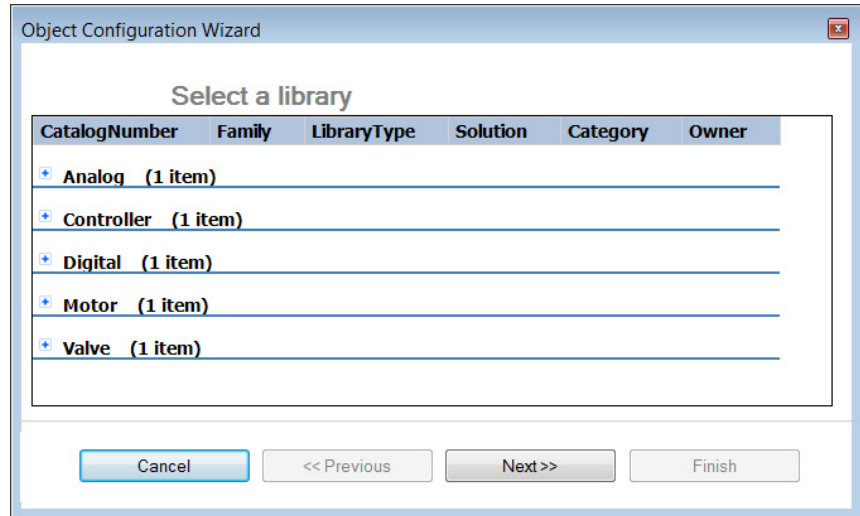
The following table describes each **Software Context Menu** command.

| | |
|---------------------------------|--|
| Add New... | Adds a new Task/Program or Object to the selected branch. |
| Add New Program... | Adds a new Program to the selected Task. |
| Export | Starts the Import Export Manager and configures the Import Export Manager dialog to export the selected Objects. Refer to Chapter 6, Import Export Manager for more information. |
| Import | Starts the Import Export Manager. Refer to Chapter 6, Import Export Manager for more information. |
| View [Object] References | Displays or prints a report of references to the selected objects. |
| Rename | Highlights the selected object name so it can be edited. |
| Copy | Copies the selected object to the clipboard. |
| Paste Special | Pastes the contents of the clipboard to the selected branch with an option to include Children, SubObjects, and References. |
| Paste | Pastes the contents of the clipboard to the selected branch. |
| Delete | Deletes the selected objects. |
| Refresh | Refreshes the branch. |

Adding a New Software Object to a Controller

Display the Object Configuration Wizard dialog by executing the **Add New** command in the **Software Task Context Menu** or the **Software Program Context Menu**.

The **Object Configuration Wizard** is displayed.

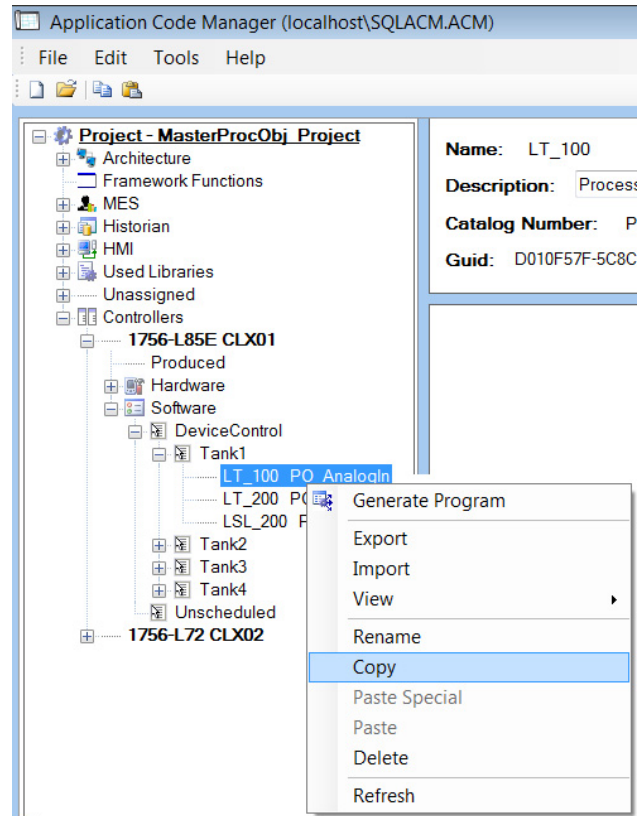


Click the + symbol to expand a Library Category and display the Libraries registered in the connected ACM Database.

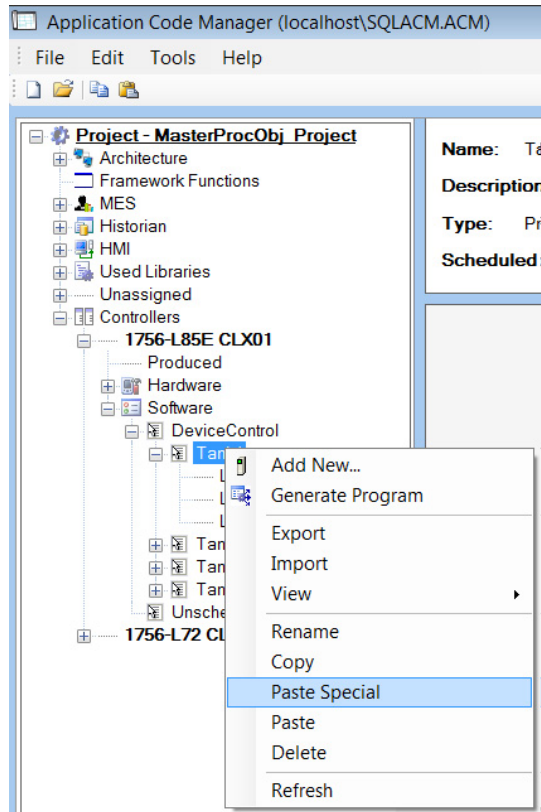
Select a Library that is designed to be placed in the Selected Task or Program by highlighting a row and clicking **Next**.

Using Copy and Paste Special with Software

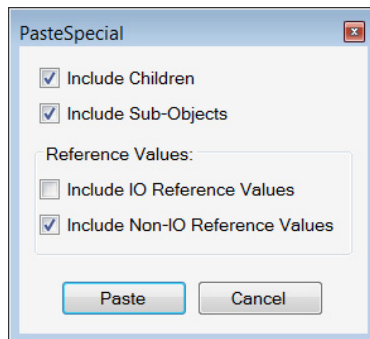
Copy an object from the Software tree view to the clipboard by executing the **Copy** command in the **Software Program Context Menu** or the **Software Object Context Menu**.



Execute the **PasteSpecial** command in the **Software Task Context Menu** or the **Software Program Context Menu**. (The contents of the clipboard will be pasted to the selected Task or Program.)



The PasteSpecial dialog is displayed.



Check the **Include Children** check box to include Children of the copied Programs.

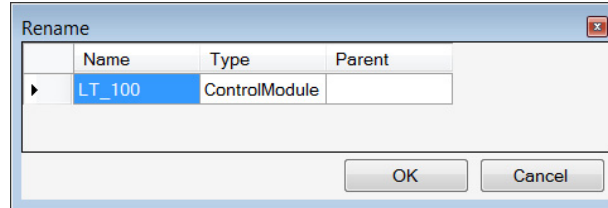
Check the **Include SubObjects** check box to include the Object's SubObjects (for example, Interlocks, Permissives).

Check the **Include IO Reference Values** check box to include any IO reference values (for example, IO mapping to an analog input parameter).

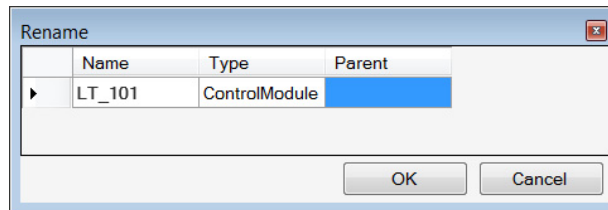
Check the **Include Non-IO Reference Values** check box to include any non-IO reference values (for example, references to an analog control module from a PIDE control module parameter).

Click **Paste** to continue.

The **Rename** dialog displays the Objects that will be pasted. The Object names that must be changed to prevent an Object naming conflict are shown in red.



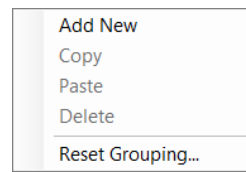
Type new Object names. The Object naming conflicts are shown in black when the naming conflicts are resolved.



Click **OK**.

SubObject Context Menu

The SubObject Context Menu is available by right-clicking the white space in any **SubObject Parameters** tab. Refer to [SubObject Parameters Tab on page 36](#) for more information.



The following table describes each **SubObject Context Menu** command.

| | |
|--------------------------|---|
| Add New | Adds a new SubObject to the Object. |
| Copy | Copies the selected SubObject (highlighted row in the SubObject Parameter tab) to the clipboard. |
| Paste | Pastes the contents of the clipboard to the selected Object. |
| Delete | Deletes the selected SubObject (highlighted row in the SubObject Parameter tab). |
| Reset Grouping... | Sorts the SubObjects in the SubObject Parameters Tab alphabetically by name (default). Refer to SubObject Parameters Tab on page 36 for more information. |

Import Export Manager

Chapter Objectives

This chapter provides information on the following topics:

- [Accessing the Import Export Manager](#)
- [Import Export Manager Menu Bar](#)
- [Import Export Manager Import Tab](#)
- [Import Export Manager Export Tab](#)
- [Import Export Manager Compare Tab](#)
- [Import Export Template Manager](#)

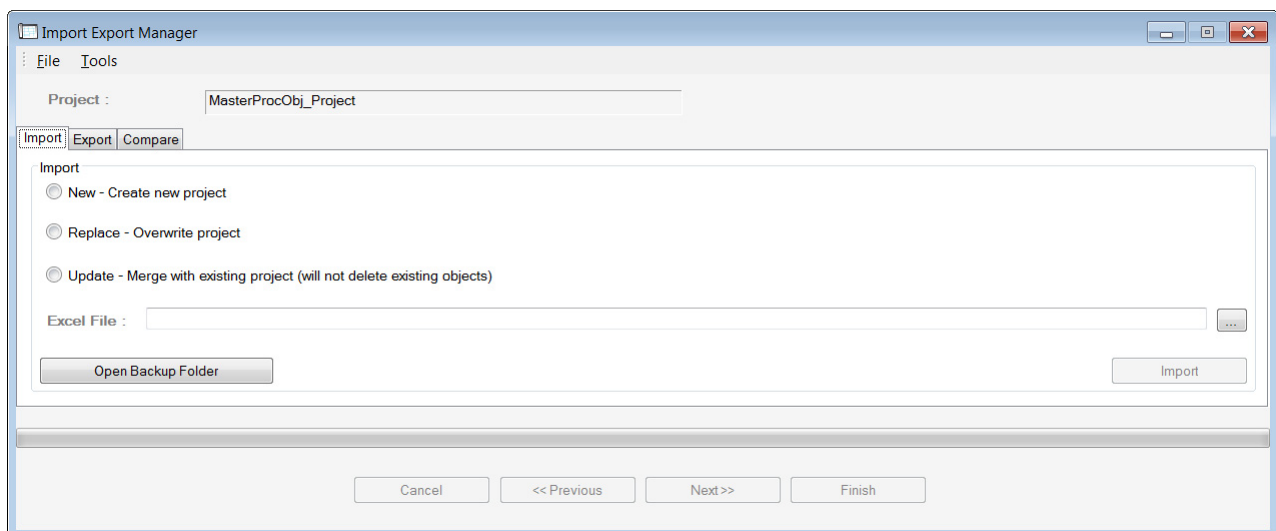
The Import Export Manager imports and exports ACM Project content to and from Schedules as Excel files (xlsx). Schedules have scope (for example, Project, Controller, Task, Program, Object) and content (for example, Device List, Device Interlocks).

Accessing the Import Export Manager

The Import Export Manager is accessed by executing one of several commands:

- Main GUI Tools Menu – Import Export Manager command
- Context Menu Export command
- Context Menu Import command

Refer to [Main GUI Tools Menu on page 43](#) and [Main GUI Context Menu Commands on page 45](#) for more information.

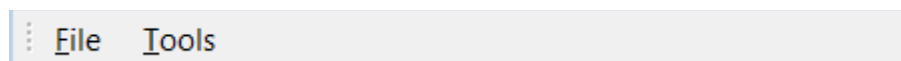


The following table describes the controls on the **Import Export Manager** dialog.

| | |
|-------------------------|---|
| Menu Bar | Refer to Import Export Manager Menu Bar on page 74 for more information. |
| Project: | Displays the Project that will be changed when importing a Schedule or exported to a Schedule. Refer to Import Export Manager File Menu on page 75 for information on selecting a Project. |
| Import Tab | Refer to Import Export Manager Import Tab on page 76 for more information. |
| Export Tab | Refer to Import Export Manager Export Tab on page 80 for more information. |
| Compare Tab | Refer to Import Export Manager Compare Tab on page 83 for more information. |
| Cancel | Closes the Import Export Manager. |
| <<Previous | Not available |
| Next>> | Not available |
| Finish | Closes the Import Export Manager. The command button is available when the import or export is completed. |

Import Export Manager Menu Bar

The Import Export Manager menu bar is shown below.

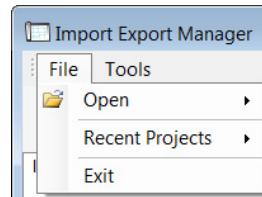


The following table describes the **Import Export Manager Menu Bar** selections.

| | |
|--------------|--|
| File | Selects the ACM Project in the connected ACM Database for importing or exporting. Refer to Import Export Manager File Menu on page 75 for more information. |
| Tools | Provides a command to open the Import Export Template Manager. A command to log debug information in the ACM Log File and a command to view the ACM Log File is also provided. Refer to Import Export Manager Tools Menu on page 75 for more information. |

Import Export Manager File Menu

The Import Export Manager **File** menu commands are as shown below.

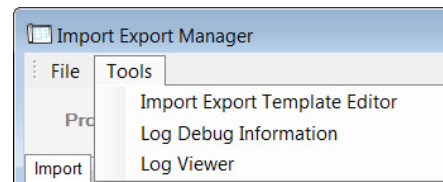


The following table describes the commands on the **Import Export Manager File Menu**.

| | |
|------------------------|---|
| Open | Selects an existing ACM Project in the connected ACM Database for importing or exporting. The Project open in the Main GUI is selected by default when the Import Export Manager is opened. Choose an ACM Project from the list. The selected Project is displayed in the Project text box. |
| Recent Projects | Selects a recently opened ACM Project for importing or exporting. The Project displayed in the Main GUI is selected by default when the Import Export Manager is opened. Choose an ACM Project from the list. The selected Project is displayed in the Project text box. |
| Exit | Closes the Import Export Manager. |

Import Export Manager Tools Menu

The Import Export Manager **Tools** menu commands are as shown below.



The following table describes the commands on the **Import Export Manager Tools Menu**.

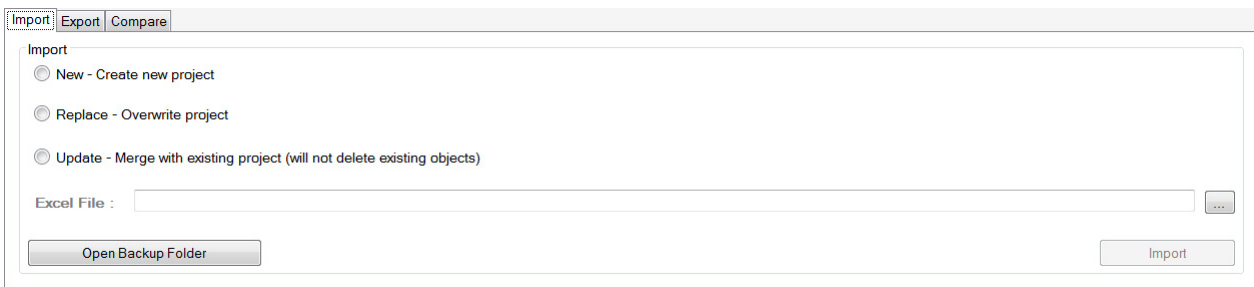
| | |
|--------------------------------------|---|
| Import Export Template Editor | Opens the Import Export Template Manager . Refer to Import Export Template Manager on page 85 for more information. |
| Log Debug Information | When checked, debug information is included in the ACM Log File. Information is written to the ACM Log File when design outputs are generated (for example, ControlLogix®, FactoryTalk® View, FactoryTalk Historian, Word) or when Schedules are imported or exported. |
| Log Viewer | Displays the contents of the most recent ACM Log File. A new ACM Log File is created for each ACM session. |

Import Export Manager Import Tab

The Import Export Manager **Import** tab is used to import Objects (instances) and Parameter values from a Schedule (xlsx).

- TIP** When importing Objects (instances), a compatible Library (class) must be registered in the ACM Database. The Catalog Number of the registered Library must match the Catalog Number in the Schedule and a Library with a revision greater than or equal to the revision in the Schedule must be registered.
- If a Library with the same revision is registered, the Library with the same revision is used.
- If a Library with the same revision is not registered and a Library with a greater revision is registered, the newest Library is used.

The Import Export Manager **Import** tab is shown below.

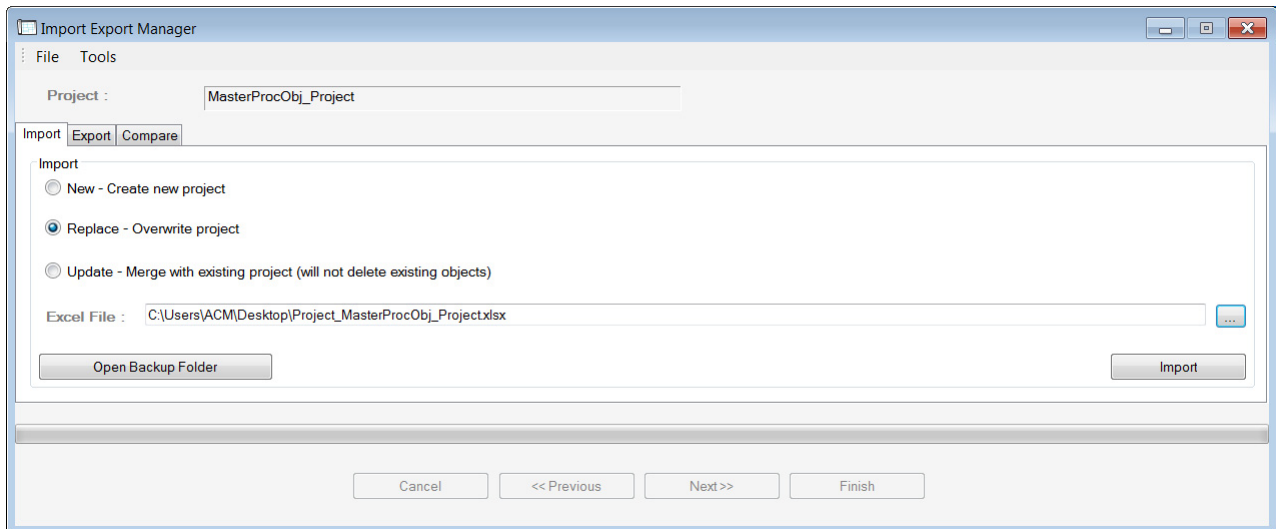


The following table describes the controls on the **Import Export Manager Import Tab**.

| | |
|--|--|
| New – Create new project | Select this radio button to create a new Project when importing a Schedule. The Project name in the Schedule cannot exist in the connected ACM Database. (The radio buttons are mutually exclusive.) |
| Replace – Overwrite project | Select this radio button to replace the Project shown in the Project text box when importing. The Project name in the Schedule must be the same as the Project shown in the Project text box. The selected Project is exported to the ACM Backup Folder and deleted from the ACM Database before importing the Schedule. (The radio buttons are mutually exclusive.) |
| Update – Merge with existing project (will not delete existing objects) | Select this radio button to update the Project shown in the Project text box when importing. The selected Project is exported to the ACM Backup Folder before importing the Schedule. Schedule content that is new will be added to the selected Project. Schedule content that has changed will be updated in the selected Project. Schedule content that was deleted or was not exported is not deleted from the selected Project. (The radio buttons are mutually exclusive.) |
| Excel File: | Click the ellipsis to open a Schedule (xlsx) for importing. |
| Open Backup Folder | Opens the ACM Backup Folder. |
| Import | Imports the selected Schedule. The command button is available when a valid import configuration has been selected. Refer to Importing a Schedule on page 77 for more information. |

Importing a Schedule

Open the Import Export Manager by executing the **Import Export Manager** command in the **Main GUI Tools Menu** and select the **Import** tab.



Use the **Open** command in the Import Export Manager **File** menu to select the Project for import. The Project which is open in the Main GUI is selected by default.

TIP Verify that the correct Project is shown in the Project text box and the correct database name is shown in the Main GUI Title Bar.

Refer to [Main GUI Title Bar on page 28](#) for more information.

Select **Replace**.

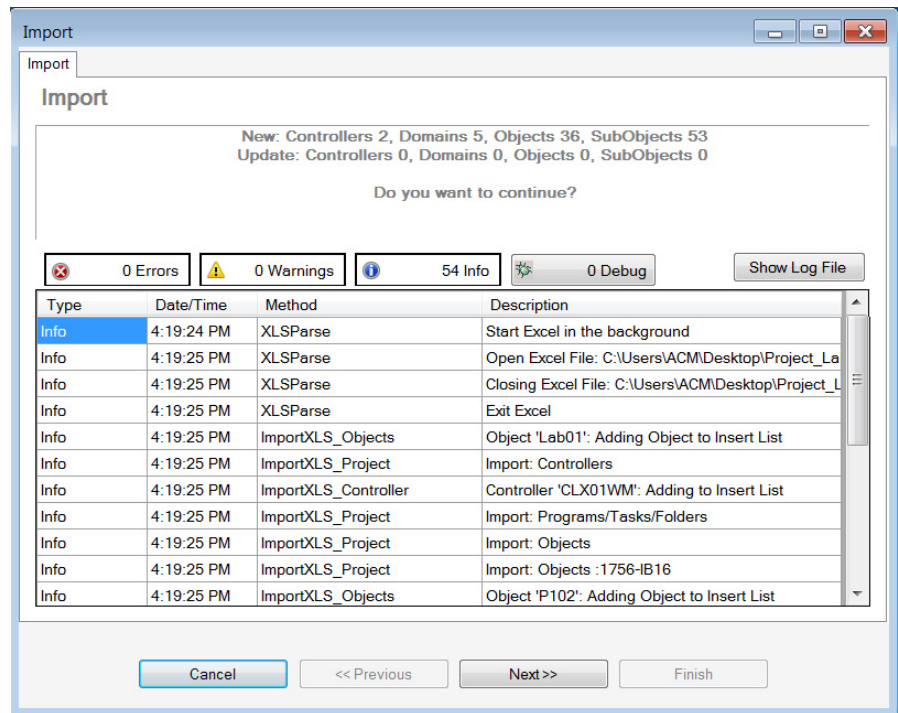
Click the ellipsis or type a Schedule file name (xlsx) in the **Excel File** text box.

TIP Verify that the correct database name is displayed in the **Main GUI Title Bar**. Refer to [Main GUI Title Bar on page 28](#) for more information.

If a project is being replaced or updated, verify that the correct Project is shown in the **Project** text box. Use the **File Open** command to change the Project shown in the **Project** text box.

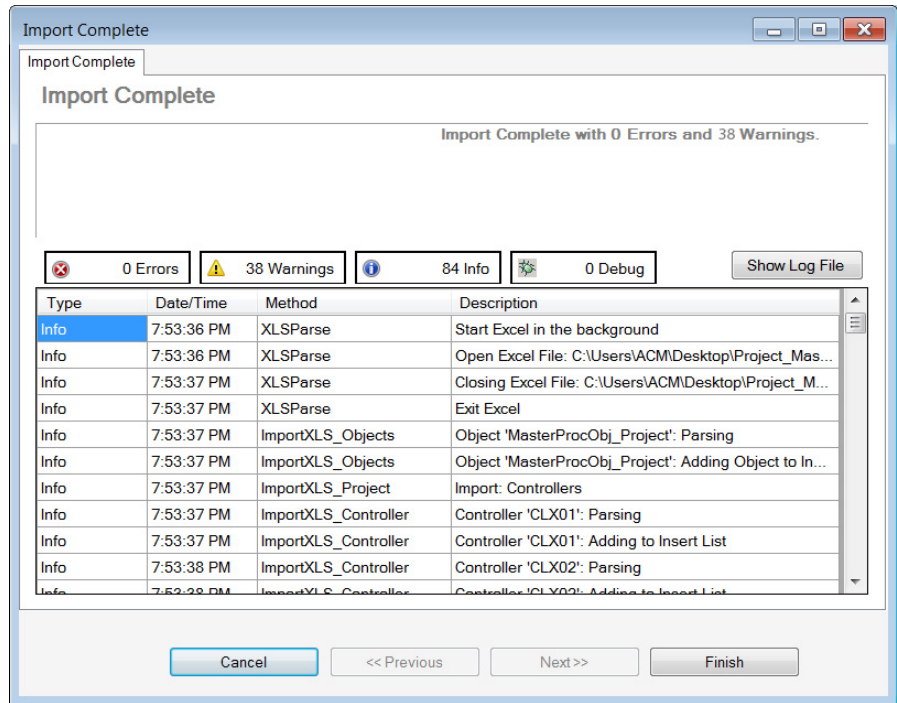
Click **Import**.

The ACM Log File entries are displayed.

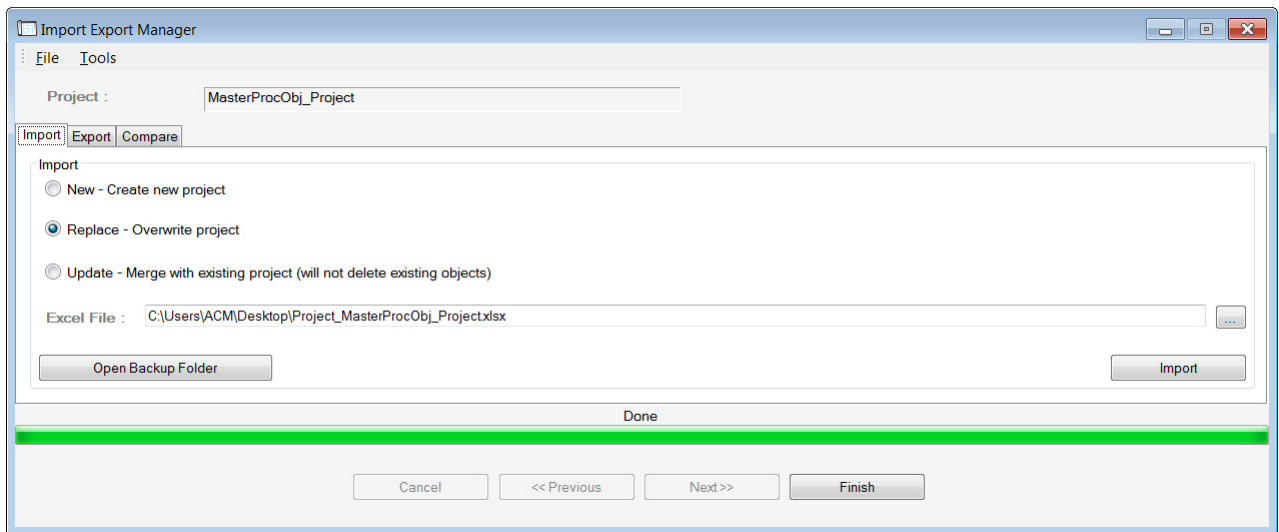


TIP Errors, Warnings, Info, and Debug information are displayed by default. Filter the list of exceptions by clicking **Errors**, **Warnings**, **Info**, and/or **Debug**. Refer to the **Log Debug Information** command in the [Import Export Manager Tools Menu](#) for more information on logging Debug information. Clicking the **Show Log File** command will display the contents of the most recent ACM Log File.

Click **Next** to continue with the import and change the data in the ACM Database.



Click **Finish** to return to the Import Export Manager.

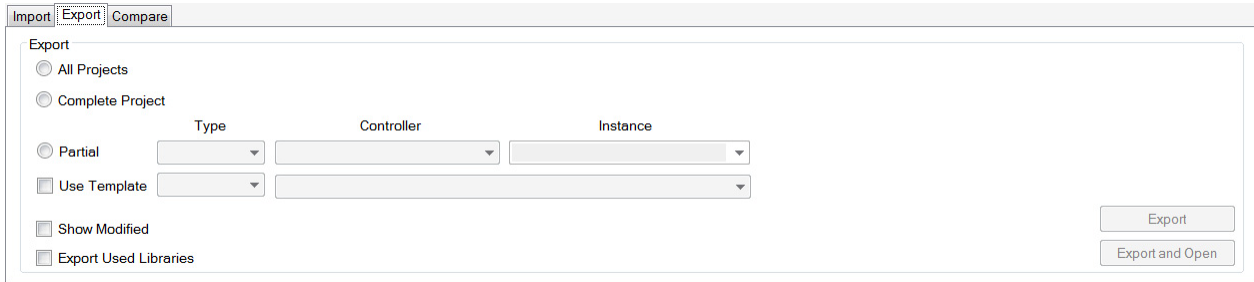


Click **Finish** to close the Import Export Manager.

Import Export Manager Export Tab

The Import Export Manager **Export** tab is used to export Objects (instances) and Parameter values to a Schedule (xlsx).

The Import Export Manager **Export** tab is shown below.

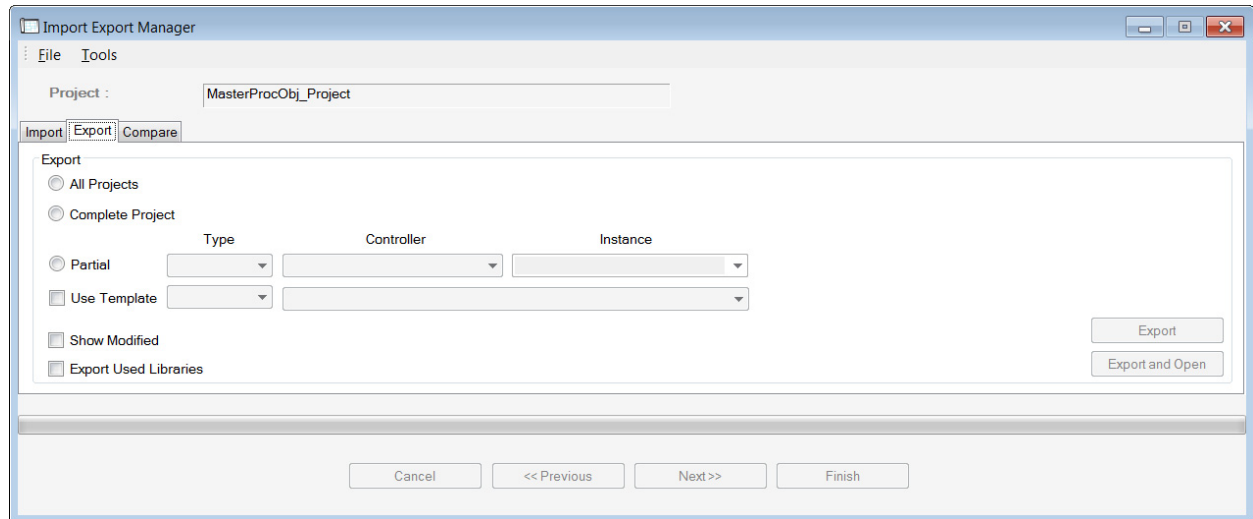


The following table describes the controls on the **Import Export Manager Export Tab**.

| | |
|------------------------------|---|
| All Projects | Select this radio button to export a Schedule for each Project in the connected ACM Database. A Template cannot be applied. (The radio buttons are mutually exclusive.) |
| Complete Project | Select this radio button to export a Schedule for the Project shown in the Project text box. A Template can be applied to the export. (The radio buttons are mutually exclusive.) |
| Partial | Select this radio button to export a Schedule with less than Project scope. Use the three combo boxes to select the Project Hardware, a Controller, a Task, a Program, or a single Object (instance). (The radio buttons are mutually exclusive.) |
| Use Template | Check the box to limit the content (for example, Device List, Device Interlocks) of the Schedule by using a Schedule Template. Uncheck the box to export all available data for the scope selected (Complete Project or Partial). Use the two combo boxes to select a Local, Project, or Global Schedule Template. Refer to Import Export Template Manager on page 85 for information on creating custom Schedule Templates. |
| Show Modified | Color codes “changed” (not equal to default) and “unchanged” (equal to default) Parameter values in the exported Schedule. |
| Export Used Libraries | Includes all the associated Library files for the Project/Controller in the export. |
| Export | Exports the Schedule. The command button is available when a valid export configuration has been selected. Refer to Exporting a Schedule on page 81 for more information. |
| Export and Open | Exports the Schedule and opens it when the export is complete. The command button is available when a valid export configuration has been selected. Refer to Exporting a Schedule on page 81 for more information. |

Exporting a Schedule

Open the Import Export Manager by executing the **Import Export Manager** command in the **Main GUI Tools Menu** and select the **Export** tab.



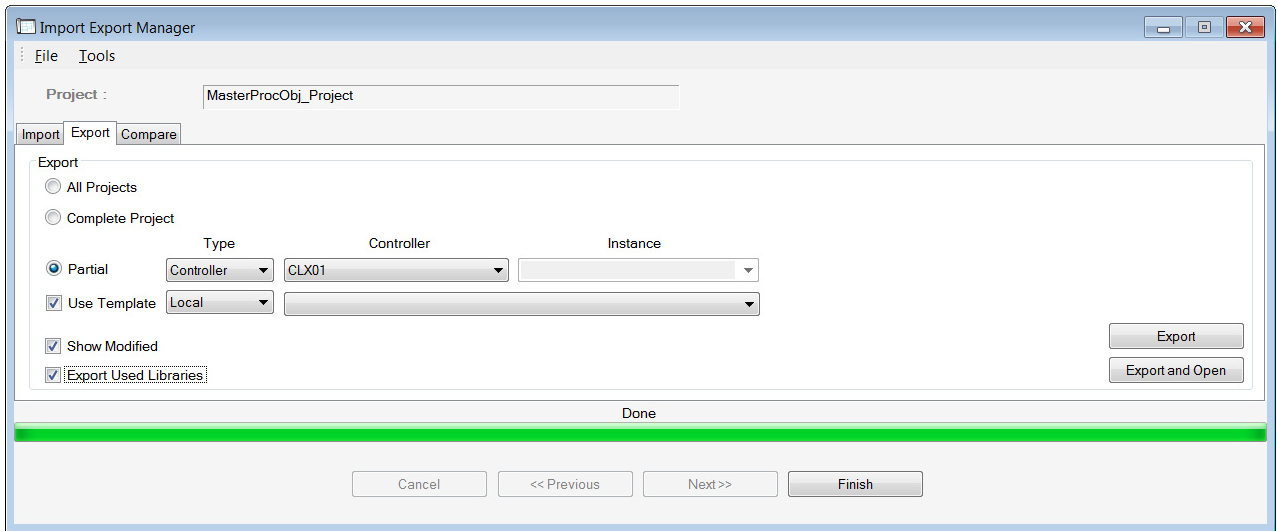
Use the **Open** command in the Import Export Manager **File** menu to select the Project for export. The Project open in the Main GUI is selected by default.

TIP Verify that the correct Project is shown in the **Project** text box and the correct database name is shown in the **Main GUI Title Bar**.
Refer to [Main GUI Title Bar on page 28](#) for more information.

Configure the scope of the Schedule by clicking **Partial** and select a Controller.

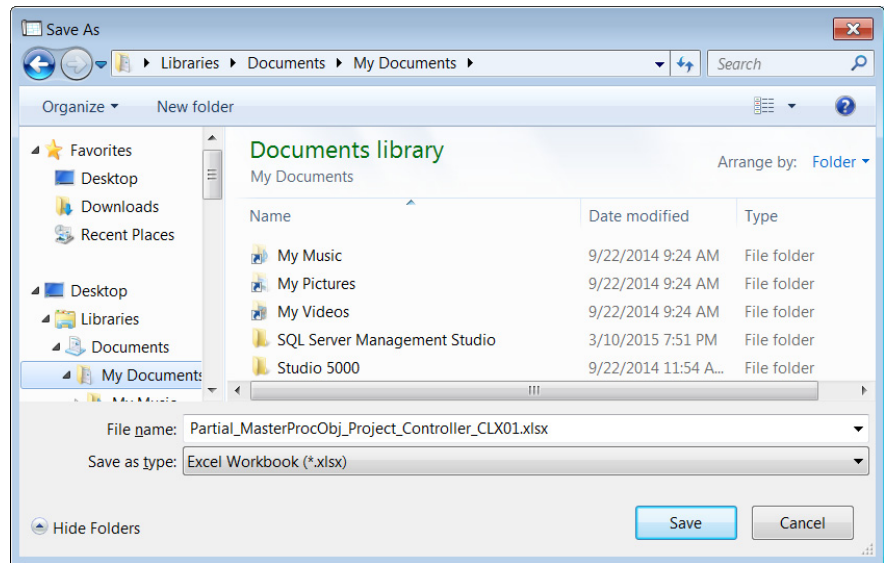
Limit the content (for example, Device List, Device Interlocks) of the Schedule by checking the **Use Template** check box and selecting the Local Device List Schedule Template.

Check the Show Modified check box to color code “changed” (not equal to default) and “unchanged” (equal to default) Parameter values.



Click **Export**.

Enter a path and file name in the **Save As** dialog.

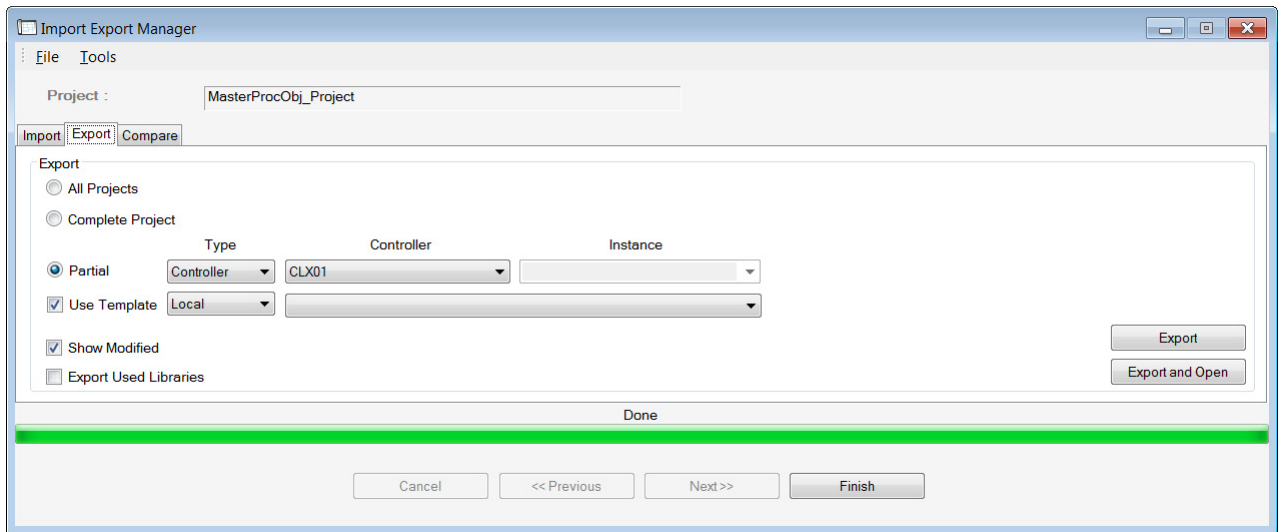


Click **Save** to save the Schedule (xlsx).

If there is an Error or Warning, the ACM Log File entries are displayed when the export is complete.

TIP Errors, Warnings, Info, and Debug information are displayed by default. Filter the list of exceptions by clicking **Errors**, **Warnings**, **Info**, and/or **Debug**. Refer to the **Log Debug Information** command in the [Import Export Manager Tools Menu](#) for more information on logging Debug Information. Clicking the **Show Log File** command will display the contents of the most recent ACM Log File.

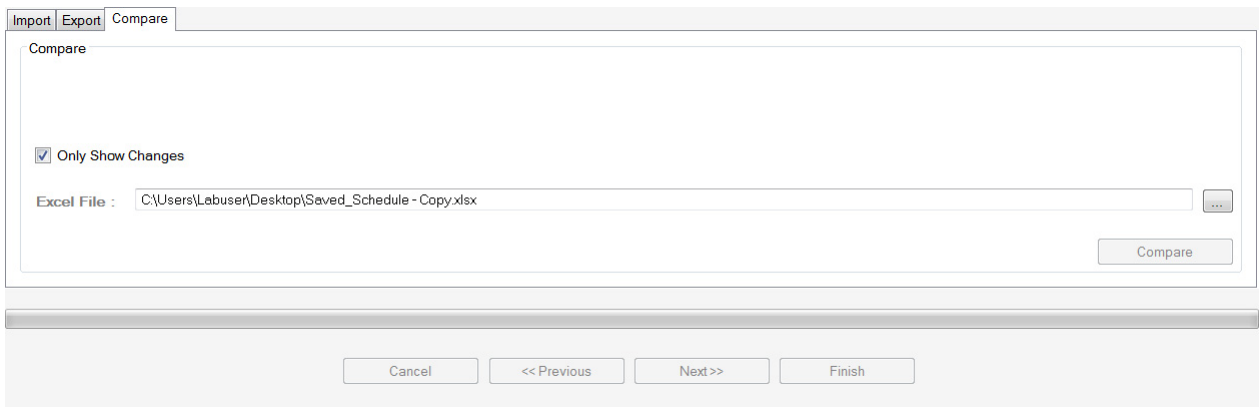
Click **Finish** to return to the Import Export Manager.



Click **Finish** to close the Import Export Manager.

Import Export Manager Compare Tab

The Import Export Manager **Compare** tab is used to compare the current Project to a previously saved Schedule (xlsx). It is used to create a report (xlsx) that highlights differences between the Project and the Schedule.



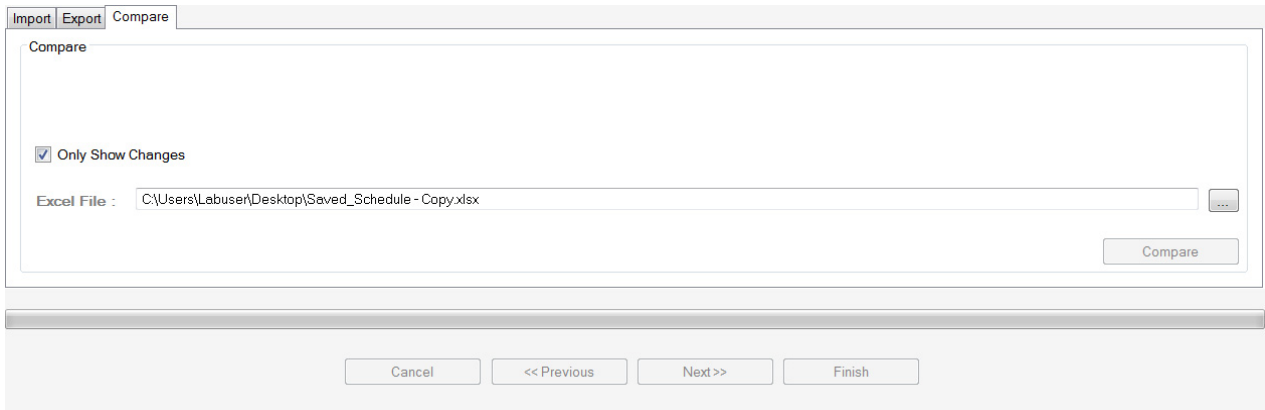
The following table describes the controls on the **Import Export Manager Compare Tab**.

| | |
|--------------------------|---|
| Only Show Changes | Select this check box to create a report that only lists the Project content that has changed. |
| Excel File: | Click the ellipsis to open a Schedule (xlsx) to compare with the current Project. |
| Compare | Compares the current Project to the selected Schedule. The command button is available when a valid Schedule has been selected. Refer to Comparing a Project to a Saved Schedule on page 84 for more information. |
| Cancel | Cancels the comparison. The command button is available once the comparison is in progress. |

| | |
|-----------------|---|
| Previous | Not used |
| Next | Not used |
| Finish | Closes the tab. The command button is available once the comparison file has been created. |

Comparing a Project to a Saved Schedule

Open the Import Export Manager by executing the **Import Export Manager** command in the **Main GUI Tools Menu** and select the **Compare** tab.

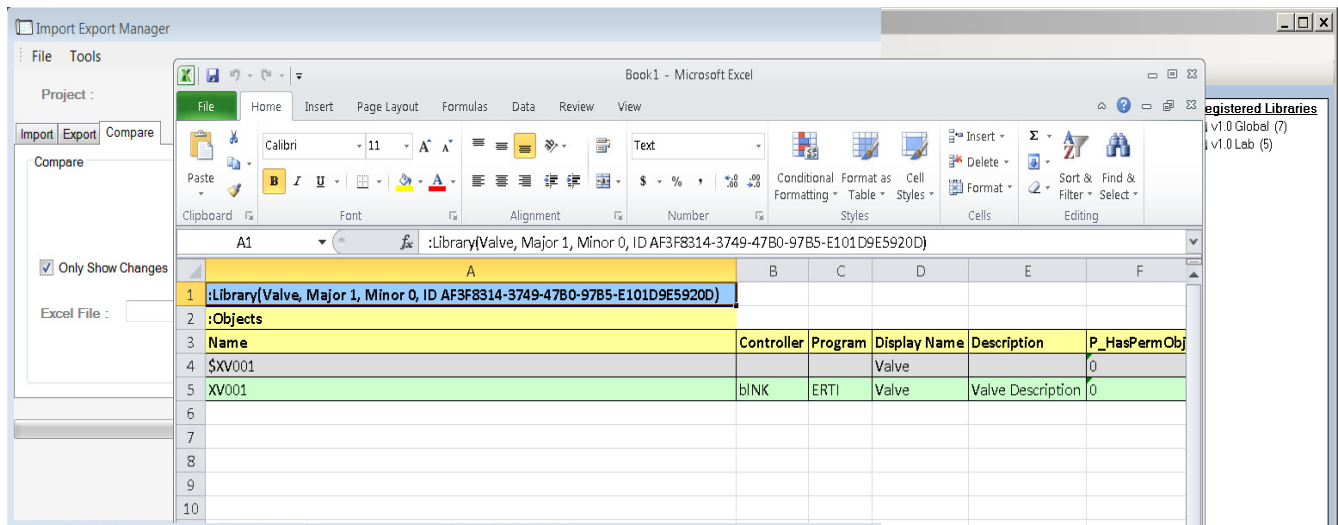


Use the **Excel File** field to select the Schedule to use for comparison.

Limit the content of the created report to only Project content that is different from content in the Schedule by checking the **Only Show Changes** check box.

Click **Compare**.

Click the **Cancel** button to cancel the comparison before it is complete.



Use the **File->Save** command in Excel to save the report.

Click **Finish** to close the Import Export Manager.

Import Export Template Manager

The **Import Export Template Manager** can be used to create custom Schedule Templates or copy/move Schedule Templates from one location to another.

Three Schedule Template locations are available:

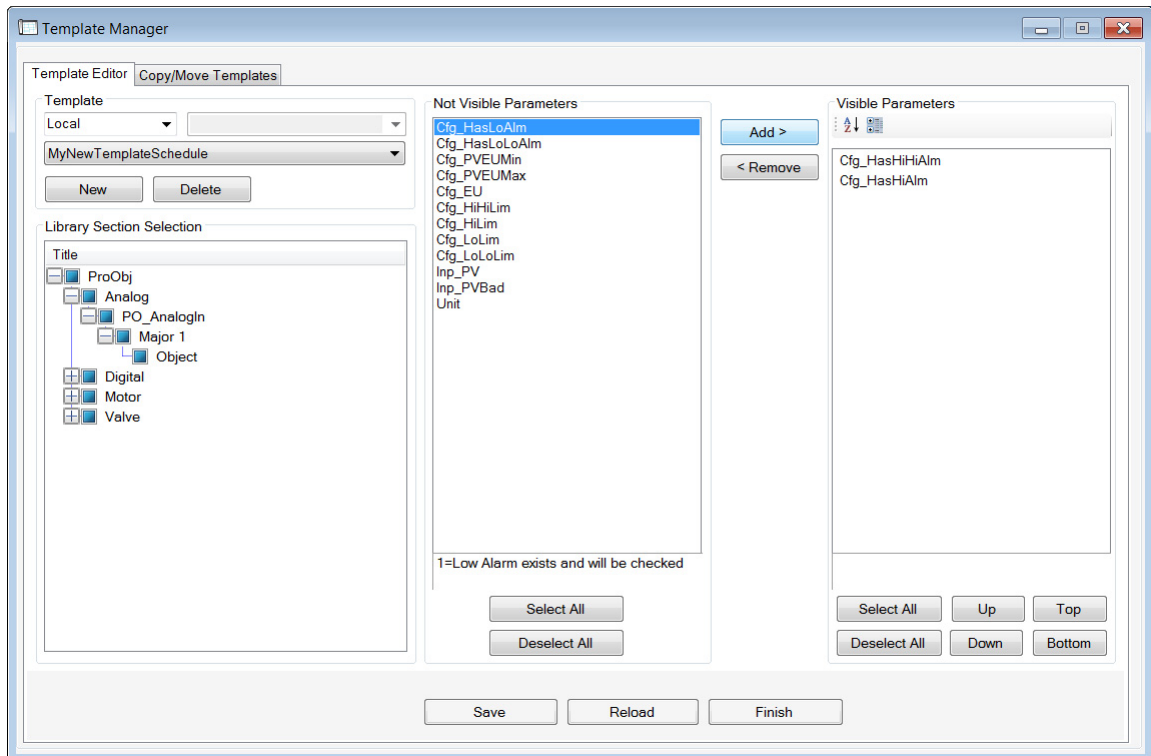
- Local – Located in the Windows User Folder. Available only to the ACM User.
- Project – Located in the ACM Database. Available to all ACM users with this Project open.
- Global – Located in the ACM Database. Available to all ACM users connected to this ACM Database.

The **Import Export Template Manager** is accessed by executing the **Import Export Template Editor** command in the Import Export Manager **Tools** menu.

Refer to [Import Export Manager Tools Menu on page 75](#) in this chapter for more information.

Import Export Template Manager Template Editor Tab

The **Template Editor** tab is used to create, delete, or edit Schedule Templates.



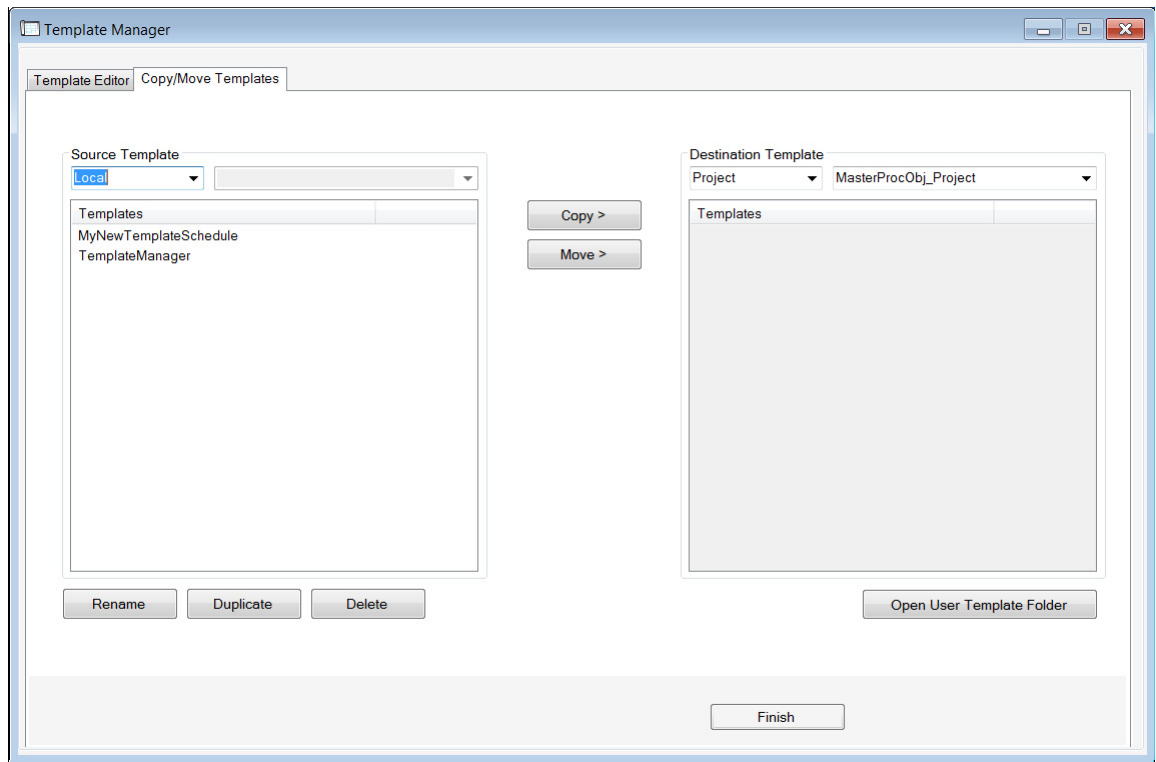
The following table describes the controls on the **Import Export Template Manager Template Editor Tab**.

| | |
|---|--|
| <p>Template Frame</p> | <p>Selects a Schedule Template. Use the combo boxes to select a Schedule Template location, a Project name (if located in Project), and a Schedule name. Use the Delete command to delete the selected Schedule Template. Use the New command to create a new Schedule Template. Refer to Creating a New Schedule Template Using the Import Export Template Manager on page 89 for more information. (If the Schedule Template format is old, the Template Manager will prompt to upgrade the Template format to the latest version when the Schedule Template is selected.)</p> |
| <p>Library Section Selection Frame</p> | <p>Selects a Library Object or SubObject definition from the Registered Libraries. The Object or SubObject Parameters are displayed in the Not Visible Parameters or Visible Parameters list boxes.</p> |
| <p>Not Visible Parameters Frame</p> | <p>Displays the Object or SubObject Parameters that will not be included in Schedules exported using this Schedule Template. Select Parameters in the list box to move to the Visible Parameters Frame. Ctrl-click, Shift-Click, Click-and-Drag, Select All, and Deselect All commands can be used to select multiple Parameters.</p> |
| <p>Visible Parameters Frame</p> | <p>Displays the Object or SubObject Parameters that will be included in Schedules exported using this Schedule Template. Select Parameters in the list box to move to the Not Visible Parameters Frame. Ctrl-click, Shift-Click, Click-and-Drag, Select All, and Deselect All commands can be used to select multiple Parameters. Use the Up, Down, Top, and Bottom commands to control the order in which the Parameters will be displayed in the exported Schedule. Use the sort buttons to display the Parameters in groups or alphabetically.</p> |

| | |
|---------------|---|
| Add | Moves the Parameter selected in the Not Visible Parameter Frame to the Visible Parameter Frame . |
| Remove | Moves the Parameter selected in the Visible Parameter Frame to the Not Visible Parameter Frame . |
| Save | Saves the Schedule Template to the Schedule Template settings file (C:\Documents and Settings\ <username>\Local Settings\Application Data\Rockwell Automation\Application Code Manager\Templates\<template>).< td=""></template>).<></username> |
| Reload | Cancel any Template changes made since the last Save command was executed by reloading the Schedule Template from the Schedule Template settings file (C:\Documents and Settings\ <username>\Local Settings\Application Data\Rockwell Automation\Application Code Manager\Templates\<template>).< td=""></template>).<></username> |
| Finish | Closes the Import Export Template Manager. |

Import Export Template Manager Copy/Move Templates Tab

The **Copy/Move Templates** tab is used to copy or move a template.



The following table describes the controls on the **Import Export Template Manager Copy/Move Templates Tab**.

| | |
|-----------------------------------|--|
| Source Template Frame | Selects a source for copying or moving a Schedule Template. Use the combo boxes to select a Schedule Template location and a Project name (if located in Project). Select a Schedule Template name in the list box. |
| Destination Template Frame | Selects a destination for copying or moving a Schedule Template. Use the combo boxes to select a Schedule Template location and a Project name (if located in Project). The Schedule Templates which are in the selected destination location are displayed in the list box. |
| Copy> | Copies the Schedule Template selected in the Source Template frame to the location selected in the Destination Template frame. |
| Move> | Moves the Schedule Template selected in the Source Template frame to the location selected in the Destination Template frame. |
| Rename | Renames the Schedule Template selected in the Source Template frame. |
| Duplicate | Prompts for a new Schedule Template name and copies the Schedule Template selected in the Source Template frame. |
| Delete | Deletes the Schedule Template selected in the Source Template frame. |
| Open User Template Folder | Opens the folder where Local Schedule Templates (settings.xml) are stored (Windows User Folder). |
| Finish | Closes the Import Export Template Manager. |

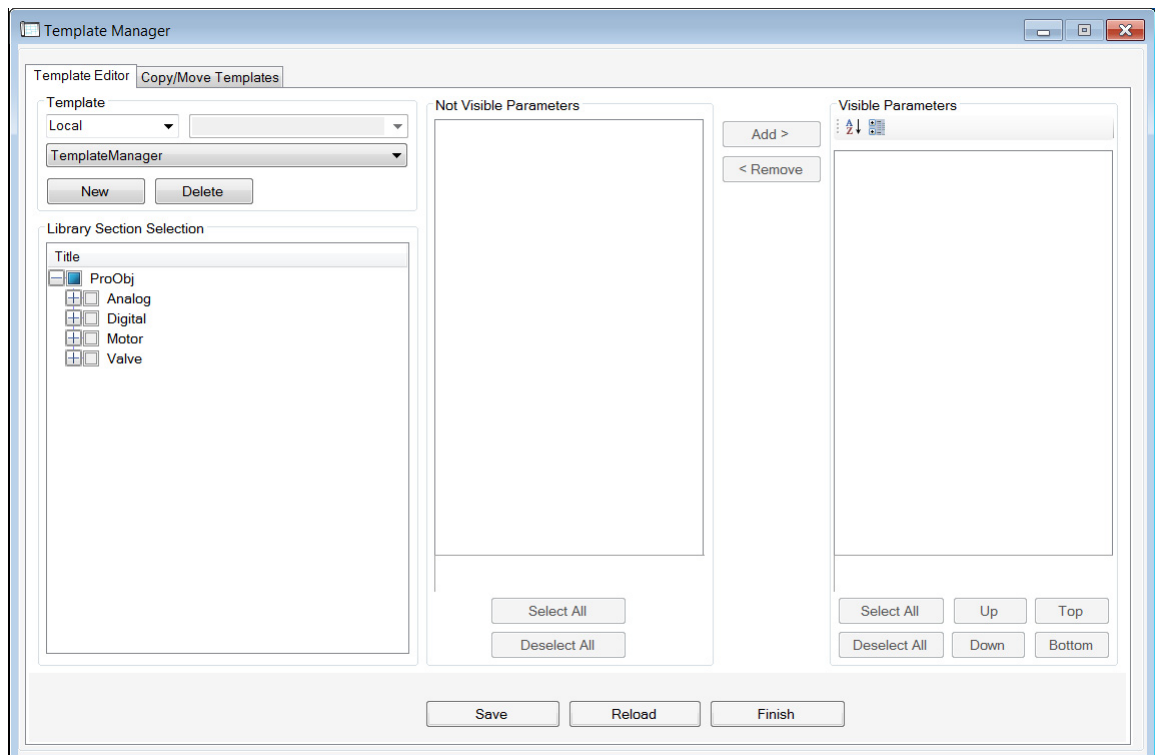
Creating a New Schedule Template Using the Import Export Template Manager

Open the Import Export Manager by executing the **Import Export Manager** command in the **Main GUI Tools Menu**.

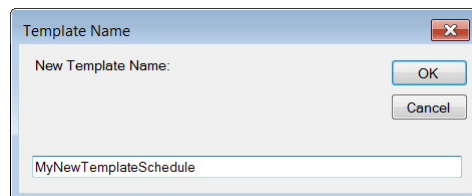
Open the Import Export Template Manager by executing the **Import Export Template Editor** command in the Import Export Manager **Tools** menu and select the **Template Editor** tab.

Select a Schedule Template location and a Project name (if located in Project) using the combo boxes in the Template frame.

Click **New**.

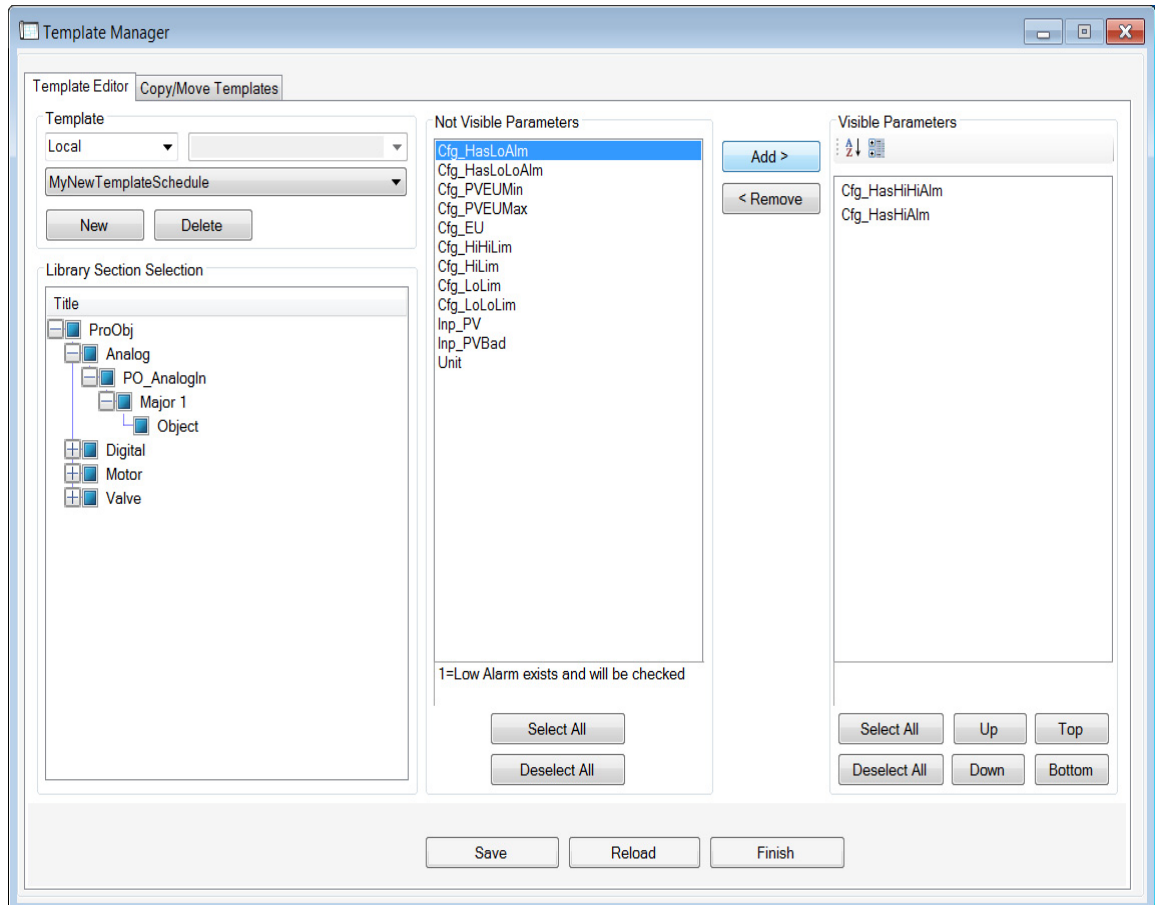


Enter a name for the new Schedule Template and click **OK**.



The new Schedule Template name appears in the Template frame.

Add the desired Object and SubObject Parameters to the new Schedule Template by selecting the Parameters in the Library Section Selection frame and clicking **Add**.



Click **Save** to save the changes.

Click **Reload** to cancel all edits made since the last time the **Save** command was executed.

Click **Finish** to close the Import Export Template Manager.

Database Manager

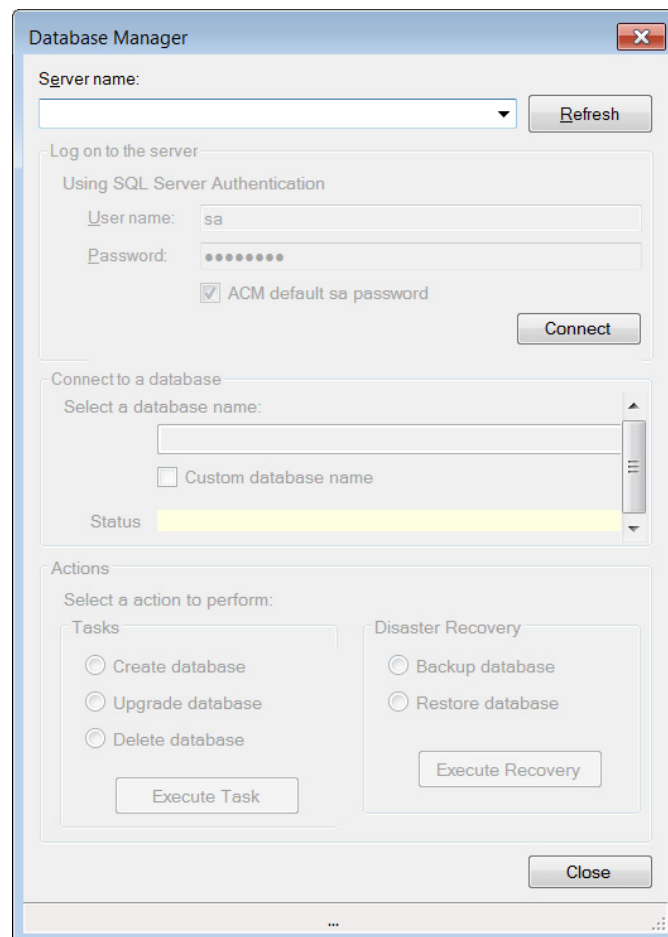
Chapter Objectives

This chapter provides information on the following topics:

- [Accessing the Database Manager](#)
- [Creating an ACM Database](#)
- [Deleting a Database](#)

Accessing the Database Manager

The Database Manager is accessed by executing the **Database Manager** command in the **Main GUI Tools Menu**. Refer to [Main GUI Tools Menu on page 43](#) for more information.



The screenshot shows the 'Database Manager' window with the following sections:

- Server name:** A dropdown menu and a 'Refresh' button.
- Log on to the server:**
 - Using SQL Server Authentication
 - User name: sa
 - Password: masked with dots
 - ACM default sa password
 - Connect button
- Connect to a database:**
 - Select a database name: dropdown menu
 - Custom database name
 - Status: highlighted yellow
- Actions:**
 - Select a action to perform:
 - Tasks:
 - Create database
 - Upgrade database
 - Delete database
 - Execute Task button
 - Disaster Recovery:
 - Backup database
 - Restore database
 - Execute Recovery button
 - Close button

The following table describes the controls on the **Database Manager** dialog.

| | |
|------------------------------------|---|
| Server name: | Selects a computer name and SQL server instance from a pull-down list, or enter a computer name and SQL server instance in the following format: <Computer Name> \ <SQL Server Instance> |
| Refresh | Refreshes the Server name selections. |
| Log on to the server | |
| User name: | SQL server user name entered during ACM Database creation. Refer to Creating an ACM Database on page 93 for more information. The default user name is "sa". |
| Password: | SQL server password entered when SQL Server Express was installed. Refer to Installing the Application Code Manager Application on page 16 for more information. |
| ACM default sa password | Selects the default ACM password. Check this box if the default SQL server password was entered when SQL Server Express was installed. Refer to Installing the Application Code Manager Application on page 16 for more information. |
| Connect | Connects to the database named in the Select a database name combo box using the SQL server entered in the Server name combo box. |
| Connect to a database | |
| Select a database name: | Selects a database name from a pull-down list. If the Custom database name checkbox is not selected, the default ACM database name is displayed (ACM). |
| Custom database name | De-selects the default ACM Database name (ACM). Check this box if the default ACM Database name was not entered during ACM Database creation. Refer to Creating an ACM Database on page 93 for more information. |
| Status | Displays ACM Database connection status. |
| Actions – Tasks | |
| Create database | Creates a database using the SQL server entered in the Server name combo box and the database name entered in the Select a database name combo box when the Execute Task command is clicked. Refer to Creating an ACM Database on page 93 for more information. |
| Upgrade database | Upgrades the ACM Database named in the Select a database name combo box using the SQL server entered in the Server name combo box when the Execute Task command is clicked. |
| Delete database | Deletes the database named in the Select a database name combo box using the SQL server entered in the Server name combo box when the Execute Task command is clicked. Refer to Deleting a Database on page 94 for more information. |
| Actions – Disaster Recovery | |
| Backup database | Makes a backup copy of the database file named in the Select a database name combo box when the Execute Recovery command is clicked. |
| Restore database | Replaces the database file named in the Select a database name combo box with a database file when the Execute Recovery command is clicked. |

Creating an ACM Database

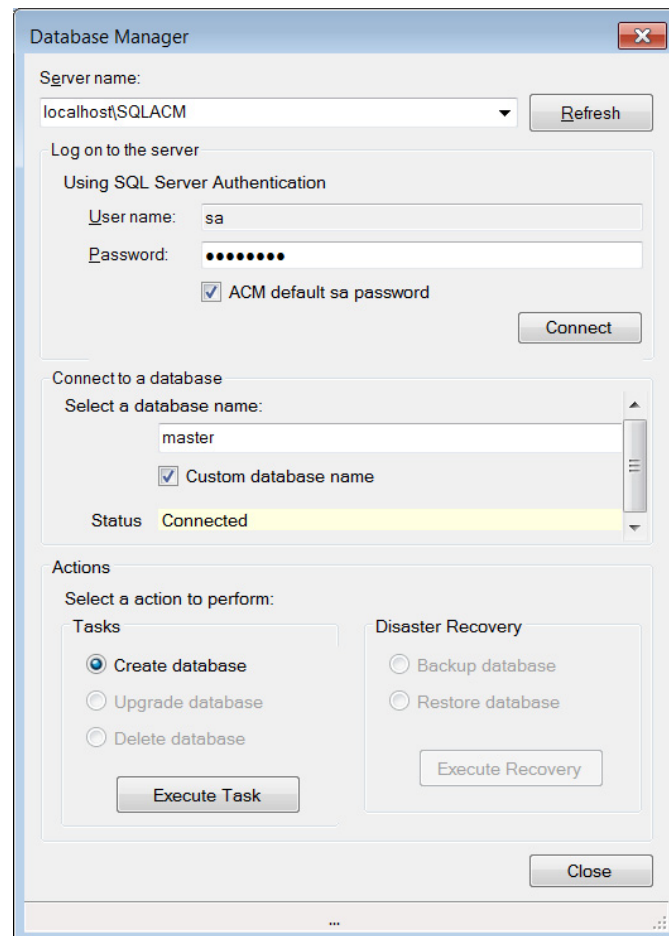
Display the **Database Manager** dialog by executing the **Database Manager** command in the **Main GUI Tools Menu**.

Enter a computer name and a SQL server instance in the **Server name** combo box. Enter the SQL server authentication and click **Connect**.

TIP Contact the database administrator for the computer name, the SQL server instance, and the server authentication if you did not install this SQL server instance.

Do not check the Custom database name checkbox. Use the default ACM Database name (ACM).

Click **Create database** and click **Execute Task**.



The **Database Manager** will display the results. Click **OK**.

Refer to [Connecting to an ACM Database on page 39](#) for information on connecting to the ACM Database.

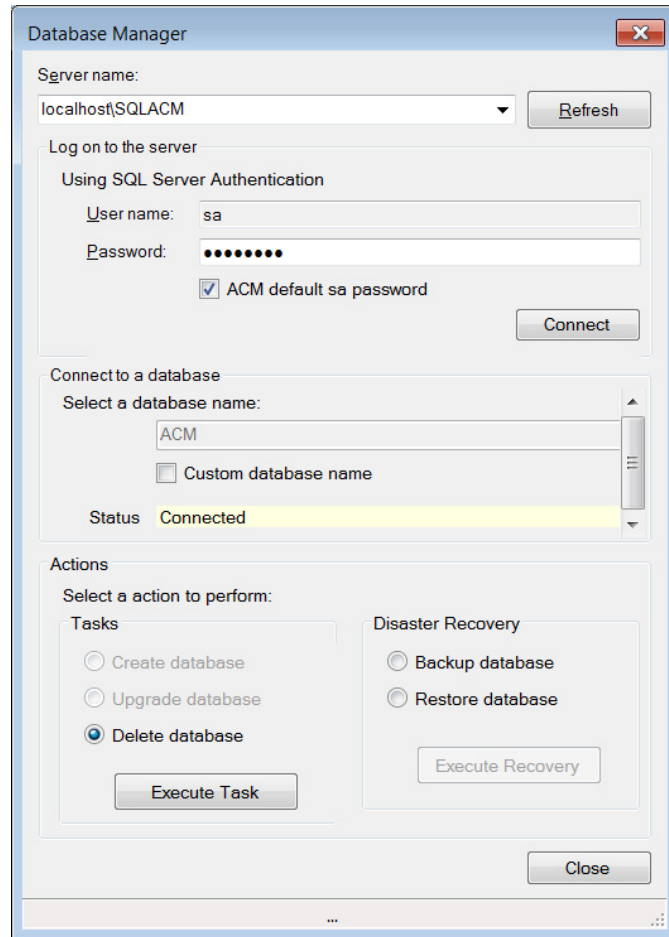
Deleting a Database

Display the **Database Manager** dialog by executing the **Database Manager** command in the **Main GUI Tools Menu**.

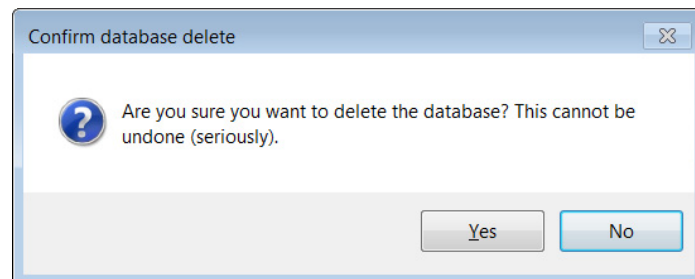
Enter a computer name and a SQL server instance in the **Server name** combo box. Enter the SQL server authentication, click **Connect**, and enter a database name.

TIP Contact the database administrator for the computer name, the SQL server instance, and the SQL server authentication if you did not install this SQL server instance.

Click **Delete database** and click **Execute Task**.



The **Database Manager** will prompt for confirmation and display the results. Click **Yes**.



Click **OK**.

Reports

Chapter Objectives

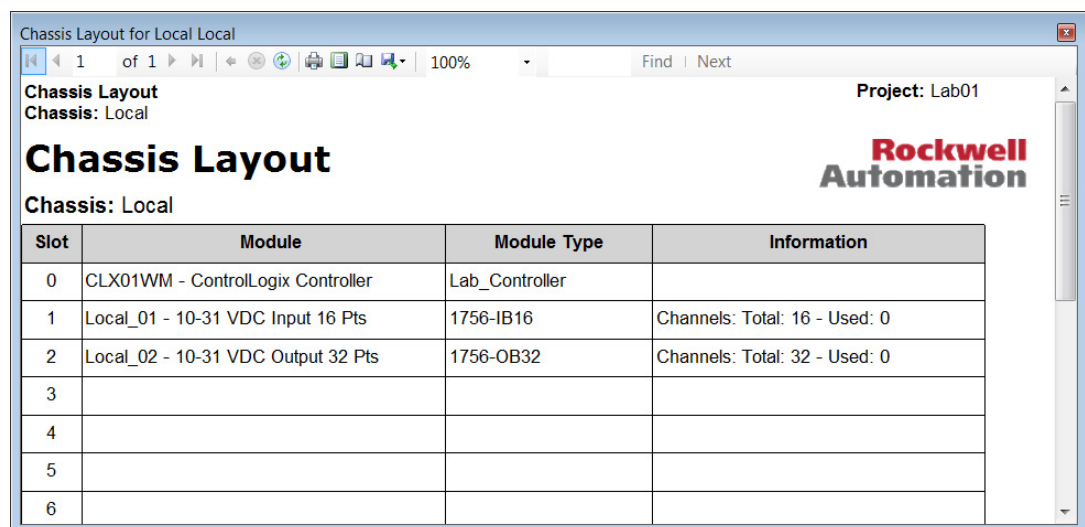
This chapter provides information on the following topics:

- [Generating a Report](#)
- [Viewing Registered Library Usage](#)
- [Viewing Software Structure](#)
- [Viewing Project History](#)

Generating a Report


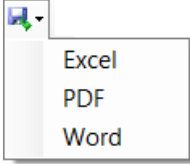
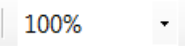
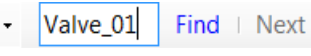
Reports can be generated by executing any of the **View** context menu commands.

For example, executing the **View Chassis Layout** command in the context menu for a Controller displays the following **Report**:



The **Report** button bar includes the following commands.

| | |
|--|---|
| | Page navigation |
| | Refresh the usage report. |
| | Print the usage report. |
| | Display the usage report in Print Layout . |

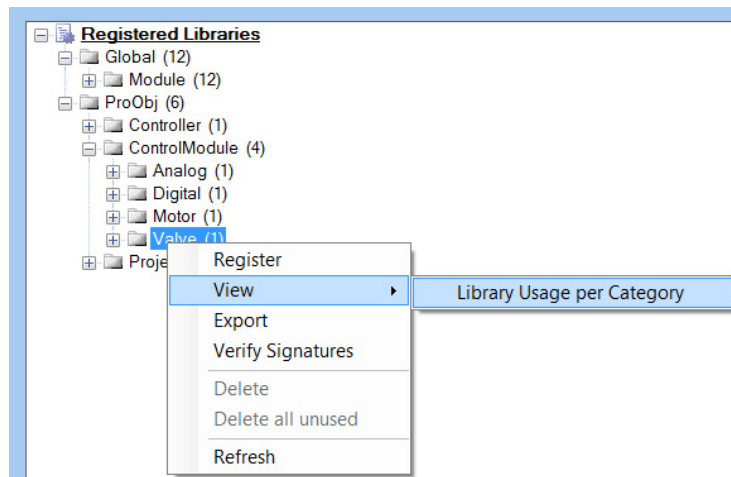
| | |
|---|---|
|  | Configure the printed Page Setup . |
|  | Export to Excel, PDF, or Word. |
|  | Zoom |
|  | Search |

Viewing Registered Library Usage

Determine the scope of the report (Registered Libraries, Solution, Library Type, Library Category, or Library Catalog Number).

Display the **Registered Libraries** context menu from the branch of the Registered Libraries tree view corresponding to the desired scope and click the **Library Usage** command.

For example, to display the usage for the Libraries in the Valve Library Category, display the **Registered Libraries** context menu by right-clicking on the Valve Library Category in the Registered Libraries tree view and click the **Library Usage per Category** command.



The Library usage for the Valve Library Category is displayed.

Library Usage per Category for

Database Library Usage per LibraryType
 Core Type: ProObj
 Library Type: ControlModule
 Category: Valve

Database: localhost\SQLACM.ACM

Database Library Usage per Library Category

Rockwell Automation

Database: localhost\SQLACM.ACM
 Core Type: ProObj, Library Type: ControlModule
 Category: Valve

| Catalog Number | Major Rev | Minor Rev | Usage Count |
|----------------|-----------|-----------|-------------|
| PO_Valve | 1 | 15 | 4 |

3/10/2015 10:32:56 PM 1 of 1

Viewing Software Structure

Determine the sort order for the report.

View Software Structure by Controller sorts the Control Modules in the following order:

1. Controller
2. Object
3. Task
4. Program

View Software Structure sorts the Control Modules in the following order:

1. Program
2. Task
3. Object
4. Controller

For example, display the **Project** context menu by right-clicking on the Project name in the Project tree view and click **View Software Structure by Controller**.

The software structure is displayed:

Software Structure by Controller for Lab01

Project Software Layout by Controller Project: Lab01

Project Software Layout by Controller

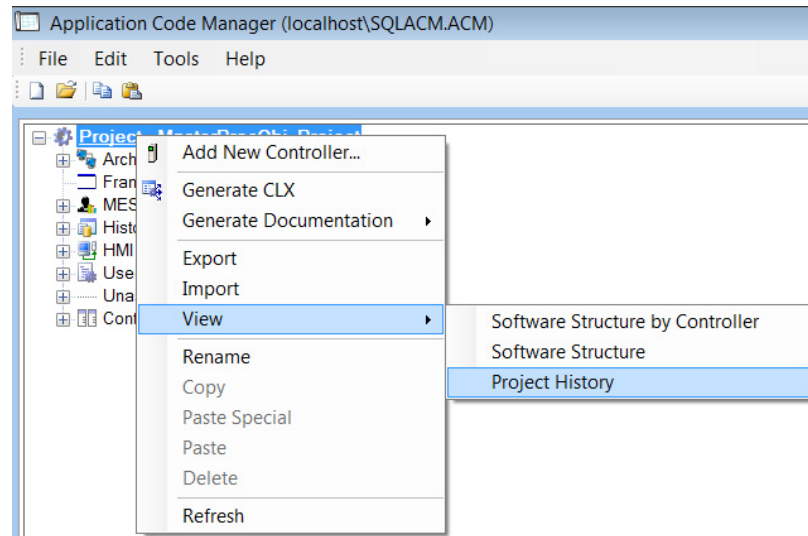
Rockwell Automation

Project: Lab01

| Controller | Task | Program | Object |
|------------|--------------------|--------------------|--------|
| CLX01 | | | |
| | _Controller_Status | | |
| | | Diagnostics | |
| | Task_A_50ms | | |
| | | Task_A_MainProgram | |
| | Task_B_100ms | | |

Viewing Project History

Display the **Project** context menu and click **View Project History**.



The Project history is displayed.

Project History for

Project: MasterProcObj_Project

Project History

Project: MasterProcObj_Project

| Major Rev | Minor Rev | By User | Changed On | Comment | Status |
|-----------|-----------|----------|-----------------------|------------------------|--------|
| 0 | 0 | IEM: ACM | 2/26/2015 12:15:33 AM | IEM: Creating Project | 0 |
| 1 | 0 | IEM: ACM | 3/20/2015 7:54:22 PM | IEM: Importing Project | 2 |
| 2 | 0 | IEM: ACM | 3/20/2015 7:56:17 PM | IEM: Importing Project | 2 |

3/23/2015 8:13:17 PM 1 of 1

Notes:

Design Collaboration

Chapter Objectives

This chapter provides information on the following topics:

- [Creating a Central ACM Database](#)
- [Sharing Libraries, Templates, and Schedules](#)
- [Other Considerations](#)

When working in Projects where multiple engineers will need to modify the information stored in the ACM Database, there are two possible approaches:

1. Select a single project engineer as the ACM Database “owner”. The ACM Database “owner” will be the only project engineer using the ACM and accessing the ACM Database. The ACM Database “owner” will provide Schedules and design output to the rest of the project team and will be responsible for maintaining all project data in the ACM Database. This option simplifies the IT requirements by eliminating the need for a central ACM Database. However, having a single ACM project engineer maintaining all project data in the ACM Database can limit productivity.
2. Use a central ACM Database accessible to all project engineers. All project engineers use the ACM and access the same ACM Database. This requires a computer running MS SQL Server 2012, which is available to all ACM users. Although there is a possibility of ACM users overwriting each other’s work, and some additional knowledge of MS SQL Server management is required, a central ACM Database provides the best work flow. Refer to the next section for more information.

Creating a Central ACM Database

Select a computer that can be shared and accessed by all users in the project. This can be a standard computer that doesn’t belong to a particular user or a project computer. The computer must always be turned on and available. Microsoft SQL Server 2012 is the only software required on the shared computer.

Install SQL Server 2012 via the ACM installation media. Select only SQL Server 2012 when presented with the selection of install options. Refer to [Installing the Application Code Manager Application on page 16](#).

Configure the SQL server as follows:

- 1. Add Users:** Normally the ACM uses Windows Authentication to connect to the ACM Database. When the ACM Database is located in a remote computer, local users will need to be created using the SQL Server Management Studio. You can create one user for all the Project engineers that will connect to the database or an individual user for each Project engineer. At least one of the users must have “dbcreator” or “sysadmin” rights in the ACM Database. All other users only need “db_datareader” and “db_datawriter” rights in the ACM Database. You can only assign users to the ACM Database after the ACM Database has been created. Refer to [Creating a Central ACM Database on page 101](#) for more information.
- 2. Record Database Connection Information:** Record the SQL server computer name and/or computer IP address, the SQL server instance name, the SQL server authentication (username and password), and the ACM Database name. This information will be required by ACM users attempting to connect to the central ACM Database. Refer to [Connecting to an ACM Database on page 39](#) for more information.

Sharing Libraries, Templates, and Schedules

All Libraries in the Registered Libraries tree view are available to all ACM users that are connected to the ACM Database.

Windows User Folder Templates (Schedule Templates) can be shared by copying or moving the Schedule Template to the central ACM Database (Project, Global). Refer to [Import Export Template Manager Copy/Move Templates Tab on page 88](#) for more information.

ACM Program Folder Templates can be shared by placing the Template files in a shared network folder.

Project data that can be reused in multiple ACM Projects can be exported to a Schedule (for example, Default ScanClasses) and shared by placing the Schedule (xlsx) in a shared network folder.

Other Considerations

To avoid the possibility of ACM users overwriting each other’s work in a central ACM Database, ACM users should work in different Projects or branches of the same Project tree view. Project work can be divided by function (for example, Controller Hardware, Controller Software, HMI, Historian) or by area (for example, Receiving, Mixer, Shipyard).

Use the Partial export option to avoid exporting the same data to more than one Schedule. If the same data is imported from more than one Schedule, the last Schedule imported will determine the data.

Export a Project Schedule periodically for backup.

Refer to [Chapter 6, Import Export Manager](#) for more information.

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Rockwell Automation Support

Rockwell Automation provides technical information on the Web to assist you in using its products.

At <http://www.rockwellautomation.com/support> you can find technical and application notes, sample code, and links to software service packs. You can also visit our Support Center at <https://rockwellautomation.custhelp.com/> for software updates, support chats and forums, technical information, FAQs, and to sign up for product notification updates.

In addition, we offer multiple support programs for installation, configuration, and troubleshooting. For more information, contact your local distributor or Rockwell Automation representative, or visit <http://www.rockwellautomation.com/services/online-phone>.

Installation Assistance

If you experience a problem within the first 24 hours of installation, review the information that is contained in this manual. You can contact Customer Support for initial help in getting your product up and running.

| | |
|---------------------------------|--|
| United States or Canada | 1.440.646.3434 |
| Outside United States or Canada | Use the Worldwide Locator at http://www.rockwellautomation.com/rockwellautomation/support/overview.page , or contact your local Rockwell Automation representative. |

New Product Satisfaction Return

Rockwell Automation tests all of its products to help ensure that they are fully operational when shipped from the manufacturing facility. However, if your product is not functioning and needs to be returned, follow these procedures.

| | |
|-----------------------|---|
| United States | Contact your distributor. You must provide a Customer Support case number (call the phone number above to obtain one) to your distributor to complete the return process. |
| Outside United States | Please contact your local Rockwell Automation representative for the return procedure. |

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