# meridium

## Meridium APM Basics

V3.6.0.0.0

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# Table of Contents

# Using the Meridium APM Help System

## How is the Help System Organized?

Module and feature specific documentation is organized in the Meridium APM Help system according to the five Meridium APM Work Processes. The table of contents contains one book for each Work Process and additional books for the modules and features that are associated with that Work Process. With the exception of the APM Foundation Work Process, each Work Process and module-level book in the table of contents adheres to the following folder structure:

- **Basics:** Provides introductory information on module or work process. Examples of this type of information include system requirements, data structure information, high-level workflow information, and information on accessing the module or Work Process.

- **Installation, Upgrade, and Configuration:** Provides information that can be used by an administrative user to deploy a Work Process or module for the first time or upgrade a Work Process or module from an earlier release. This section also contains information on configuring all of the modules associated with a given Work Process.

- **User Instructions:** Provides information that can be used by a non-administrative user to perform the functions of a Work Process or module.

- **Reference Information:** Provides reference information for the Work Process or module. Examples of this type of information include Meridium APM Catalog information, family field descriptions, URL information, and a glossary of terms related to the Work Process or module.

The folder structure in the preceding list is illustrated in the following image that shows the table of contents of the Meridium APM Help system for the Mechanical Integrity Work Process.
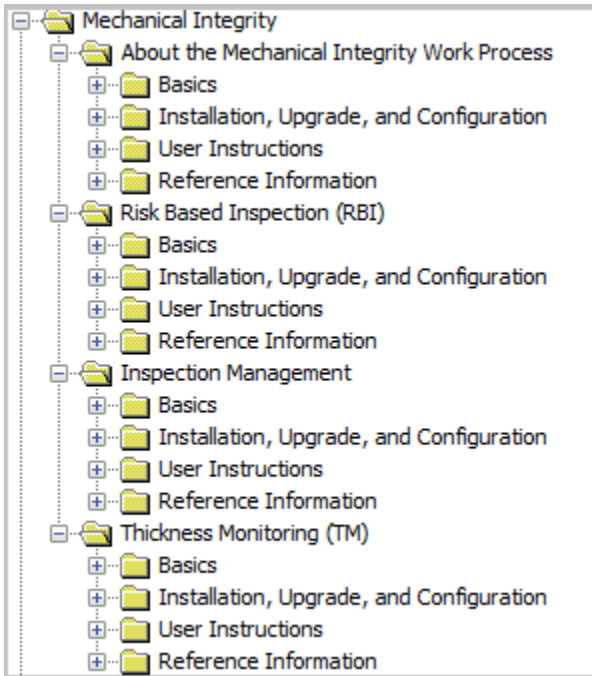
The structure of the Meridium APM Help system for the APM Foundation Work Process is similar to this structure, however, this section of the Meridium APM Help system contains documentation for additional features and configuration tools that are common to the Meridium APM Framework application rather than a single Meridium APM Work Process.

# What Is Meridium APM?

Production facilities often face problems related to recurring equipment failures, including:

- Unplanned downtime.

- The inability to maintain planned production rates.

- High costs of fixing problems that result from equipment failures.

- Threats to employee and environmental safety.

Data related to equipment failures and the impact that they have on a facility can be recorded using a data collection tool. Collecting failure data alone, however, cannot prevent the same problems from occurring in the future. What production facilities need is a tool that will *analyze* the failure data to help decrease the number of equipment failures, which will in turn increase profit margins.

The Meridium APM system fulfills this need.

Meridium APM provides tools that let you analyze and process data that is collected in and transferred from an Enterprise Asset Management (EAM) system. After the data exists in Meridium APM, it can be analyzed to determine the state of your equipment and the reliability, trends, potential risks, and probability of failures associated with that equipment. Based on the gathered data and associated analyses, you can map out the impact of projected changes and then make recommendations and suggest strategies for future equipment maintenance.

# Overview of the Meridium APM Work Processes

A *work process* is a collection of sequential, structured activities that are designed to achieve a particular goal. The Meridium APM product consists of five work processes, which are referred to throughout this documentation as the *Meridium APM Work Processes*. Each Meridium APM Work Process is designed to achieve a specific goal related to improving performance or managing risk.

The following image illustrates the five Meridium APM Work Processes.
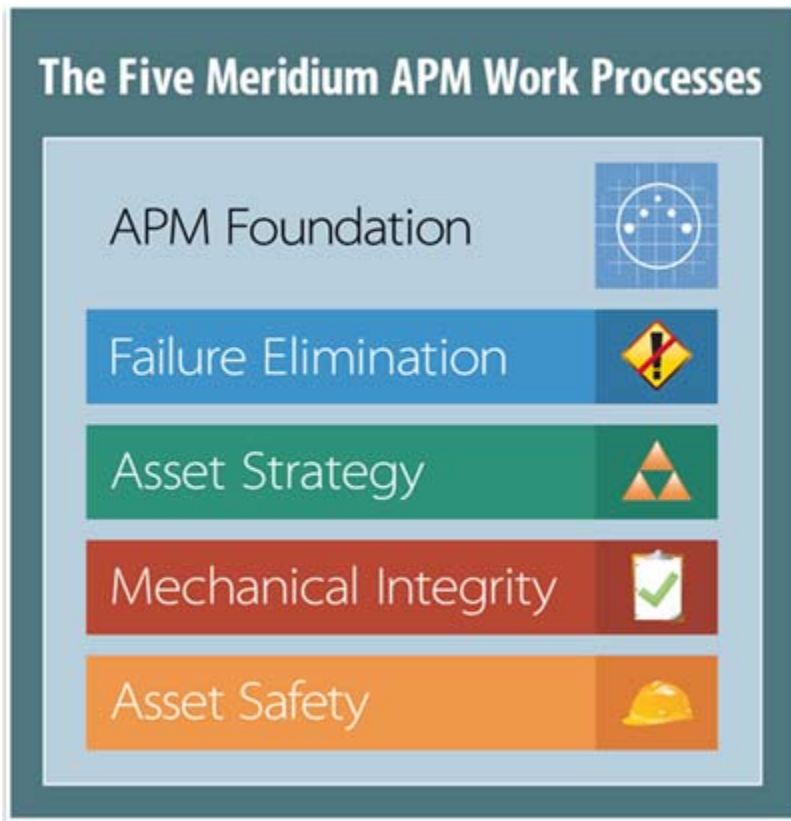


The following table lists the goal of each Meridium APM Work Process, as well as a summarized tag line for each one.

| Work Process | Goal | Tag Line |
|---|---|---|
| **APM Foundation** | Provide the context for evaluating performance. | *Assess Risk, Improve Performance* |
| **Failure Elimination** | Fix today's problems, become less reactive, and eliminate repetitive problems. | *Find it, Fix it* |
| **Asset Strategy** | Become more proactive with the most effective maintenance plans based on risk. | *Improve the plan* |
| **Mechanical Integrity** | Manage the risk of loss of containment events.[1] | *Keep it contained* |
| **Asset Safety** | Ensure that your instrumented safety and protective functions are properly designed and managed.[1] | *Keep it safe* |

1. This work process is focused primarily on process industries.

# Meridium APM Best Practice vs. a Custom Solution

When you license the Meridium APM product, you will have two options for how to implement it. You can choose to implement it:

- **According to the Meridium APM Best Practice.** This option allows you to use the Meridium APM product as it delivered, with minimal customization. As a general rule, the Meridium APM Best Practice should support about 80% of most customers' needs. Roughly 20% customization may still be required. *This option is recommended.*

  -or-

- **As a custom solution.** This option allows you to customize the baseline product to implement custom workflows that support your specific company needs. As a general rule, customers who choose this option will use only about 20% of the baseline product; roughly 80% of their implementation will be custom.

  **Note:** Some customers will choose to implement certain modules using the Meridium APM Best Practice and other modules using a custom solution.

A *best practice* is a suggestion for how to do something. The *Meridium APM Best Practice*, therefore, is simply a recommendation for how to use and configure the Meridium APM product. If you use and configure the Meridium APM product according to the Meridium APM Best Practice, you will still have some flexibility for how you can customize certain features. Generally, however, you will not stray far from the guidelines that are outlined in the Meridium APM Best Practice.

You can think of the Meridium APM Best Practice versus a custom solution as a model home versus a custom home. This concept is further explained in the following illustration.

> **IMPORTANT:** Throughout the Meridium APM documentation, we assume that you have implemented the Meridium APM Best Practice. This means that we assume that you are using baseline functionality, families, and rules. We understand, however, that you will still make *some* custom choices, as you would when dealing with a model home. Where customization is allowed, therefore, and the workflow for customizing the feature does not require extensive custom rule changes, the documentation sometimes provides examples of how you might customize that feature.

# A Model Home: The Meridium APM Best Practice



Model homes are typically less expensive than custom homes, require less time to finalize a contract, offer few unique features, and present the buyer with little risk of potential changes or unforeseen challenges.

The Meridium APM Best Practice mirrors a model home, where the buyer accepts the baseline functionality, entity family and relationship family hierarchy, and rules. While you might need to make some decisions about how to make the product best fit your needs, you will not need to build an entirely unique product. You will be able to use most of the baseline functionality while making minimal changes.

As an example, the baseline Meridium APM database contains the following families:

- Equipment

- Functional Location

When you implement the Meridium APM Best Practice, rather than creating your own custom families, you will use these baseline families as they are delivered to store *all* records representing the pieces of equipment and functional locations that you want to track and analyze.

Implementing the Meridium APM Best Practice allows you to save money on purchasing and configuring the product, minimizes the time between implementing the product and rolling it out into production, and reduces the risk of custom features failing to meet your exact needs. The Meridium APM Best Practice is typically used by customers who know they want to use the Meridium APM product but need experience with it to understand the extent to which its baseline functionality fits their needs.

Throughout this documentation, we assume that you have implemented the Meridium APM product as a *model home*.

# A Custom Home: A Custom Solution



Custom homes typically cost more than model homes because they offer more lavish features, including custom woodwork, high-end finishes, and distinctive architecture. Because of the unique features included in a custom home, it takes more time to plan, build, and move into a custom home than a model home. In addition, because custom homes can include features that have not been implemented in many other homes, the buyer incurs the risk that the features might be more expensive or take longer to create than originally planned. There is also the potential risk that unpredicted changes will need to be made to accommodate the custom features, where the changes could not have been foreseen during the initial design phase.

Custom solutions mirror custom homes. If desired, you can implement a custom solution, where you work with a team to design and build a product that differs significantly from the baseline product.

For example, rather than using the baseline Equipment and Functional Location families, you can create your own customer-defined families to store records representing pieces of equipment and functional locations, and you can name these families however you like. For example, you could create a family hierarchy that looks like the one shown in the following image.
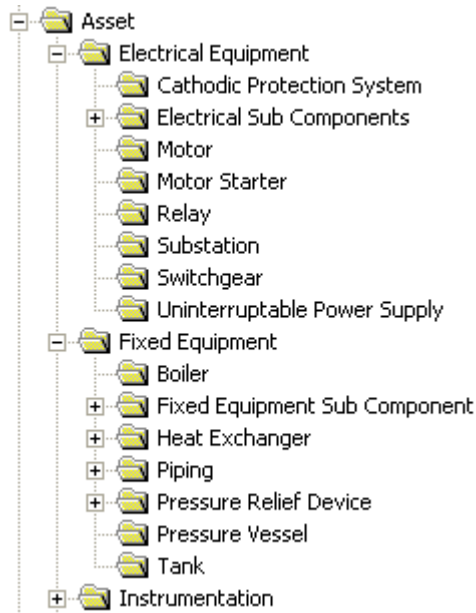


Custom solutions are typically used by advanced companies who know exactly what they want to implement and how it differs from the baseline Meridium APM implementation.

# Applications

## Introduction to the Basic Meridium APM Software Applications

The Meridium APM solution includes various software applications that can be installed on workstations within your system. Within the basic Meridium APM architecture, each physical computer is defined largely by the software components that are installed on it. Therefore, to understand our description of the Meridium APM architecture, it helps to know which software applications are available.

- **Meridium APM Application Server Software:** The main Meridium APM software that includes all the Meridium APM files, code, and business objects. The Application Server machine serves as the central Meridium APM file warehouse, from which files are distributed automatically to Meridium APM Framework workstations as needed.

- **Meridium APM Framework Application:** Serves as the primary user interface for connecting to the Meridium APM Application Server and interacting with data using the Meridium APM modules.

- **Meridium APM Administrative Applications:**

  - **Configuration Manager:** Lets you perform administrative tasks, such as setting up families, fields, relationships, datasheets, Security Groups, and users.

  - **Data Source Manager:** Lets you register database connections on a given Meridium APM Application Server.

  - **Schedule Manager:** Lets you schedule Meridium APM events, such as the execution of strategies and sending of notifications.

  - **URL Manager:** Lets you register URLs, manage URLs, and construct links for the **Associated Pages** menu.

- **Database Upgrade Manager:** Lets you perform upgrades of the Meridium APM database.

- **Meridium APM Adapter for SSRS:** Provides integration between the Meridium APM Framework and SQL Server Business Intelligence Development Studio so that you can design reports on the Meridium APM Framework workstation.

- **VSTA for Strategy:** Allows you to use Visual Studio Tools for Applications in the Meridium APM Framework application to write Strategy rules. Note that this installation option does not install VSTA.

**Note:** The administrative applications can be installed on a Meridium APM Framework workstation and are installed automatically on the Application Server with a few exceptions. For more details see the Installation, Upgrade, and System Administration section of the Meridium APM Help system.

# Accessing Meridium APM Applications

## Accessing a Meridium APM Application

The following instructions provide details on launching and logging in to a Meridium APM application. Note that Meridium APM provides the auto-login feature, whereby you will be logged in to Meridium APM automatically when you launch the application (i.e., you will not be required to provide your Meridium APM user ID or password). Because the auto-login feature may increase the time it takes to log in on some systems, you can override this feature by holding down the Shift key when you launch the application.

The following instructions provide the *full* procedure for logging in to a Meridium APM application. Note that in the case of an auto-login, the **Meridium APM Login** dialog box will not appear when you launch the application, as described in the instructions. Instead, the application will open, and you will be logged in automatically.

These instructions assume that you are using Windows 7. If you are using another operating system, then the step for selecting an application to launch may be slightly different.

**Note:** Only Super Users and members of the MI Configuration Role, MI Power User Role, and MI Security Role Security Groups can log in to the Configuration Manager.

**To log in to the Meridium APM Framework application or a Meridium APM administrative application:**

1. On the Windows taskbar, click **Start**, point to **Programs**, click **Meridium APM Applications**, and then click one of the following options, depending upon which application you want to launch:

   - **APM Framework**

   - **Configuration Manager**

   - **Data Source Manager**

   - **Schedule Manager**

   - **URL Manager**

   The Meridium APM splash screen appears. After a few moments, the **Meridium APM Login** dialog box appears.
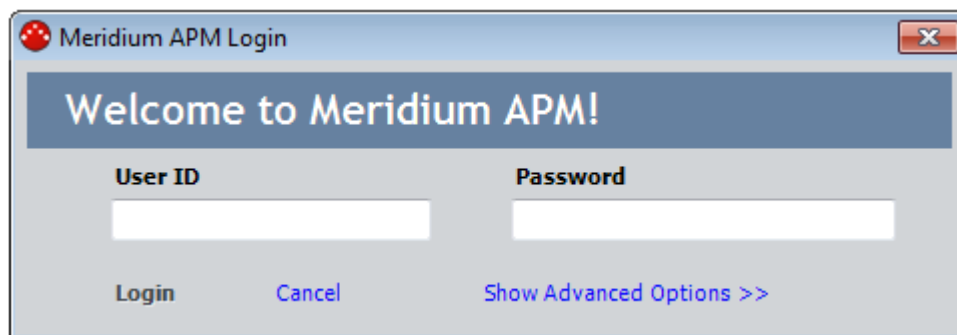


2. In the **User ID** text box, type your Meridium APM user ID.

3. In the **Password** text box, type your password.

4. Click the **Show Advanced Options** link.

   The dialog box expands to display additional options.

A data source should be selected in the **Data Source** list. This is either the default data source defined in Data Source Manager, or it is the data source that you selected when you last logged in to a Meridium APM application on this computer.

5. If necessary, in the **Data Source** list, select a different data source. Keep in mind that you need to select the data source that contains the Security User account with the User ID and Password that you specified in steps 2 and 3.

6. Click the **Login** link.

The application appears. Note that if Content Validation has been enabled, a warning message may appear before the application opens.

## Accessing a Meridium APM Application When Content Validation is Enabled

When you launch a Meridium APM application and log in to a database in which Content Validation has been enabled, the Meridium APM system will scan the database for invalid content. If invalid content in detected, the following warning message will be displayed.
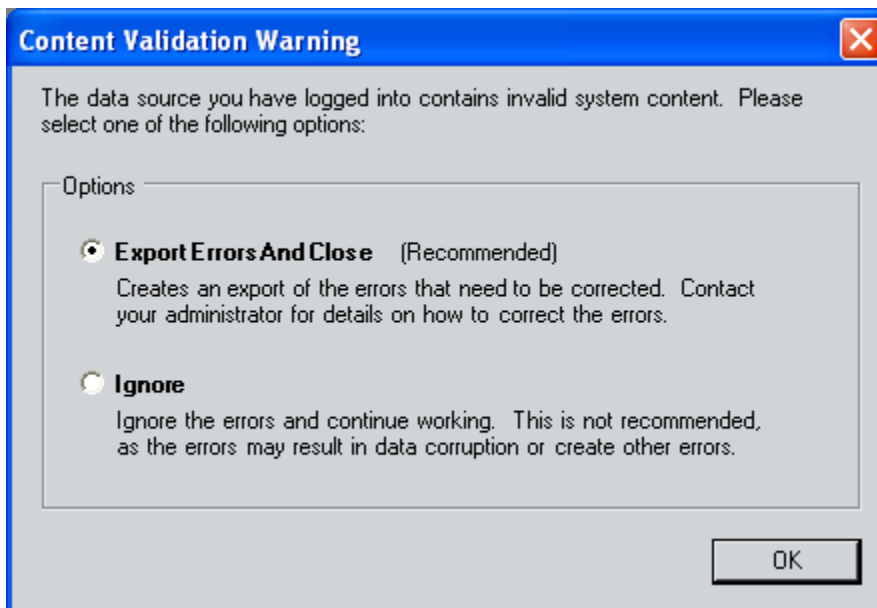


When this warning message is displayed, you have two options for how to proceed:

- You can choose the **Export Error and Close** option. **This option is recommended.** When you select this option and click **OK**, the **Select export location** dialog box will appear, where you can specify a file name and location of an export file that will contain a list of invalid content. After the export file has been created, a confirmation message will appear, and you will not be logged in to the application.

  After the export file has been created, you should contact your Meridium APM administrator for instructions on how to correct the invalid content.

- You can choose the **Ignore** option to bypass the warning and log in to the application anyway. Using a system that contains invalid content is not recommended.

# About the Automatic Login Feature

Meridium APM offers an automatic login feature that allows users to launch a Meridium APM application and be logged in automatically without having to supply a Meridium APM user ID and password. The Meridium APM default automatic login feature authenticates users using the information that they provide when logging in to their local Windows operating systems. Meridium APM also offers optional LDAP integration, which also supports automatic login but authenticates users against their Microsoft Active Directory credentials. If your Meridium APM system has been set up to support either of these features, you will be logged in to Meridium APM automatically when you launch a Meridium APM application.

On some systems with slower networks, logging in to Meridium APM manually may be faster than using automatic login. Therefore, an option is provided that lets you override automatic login and display the **Meridium APM Login** dialog box, where you can specify a user ID and password. You can use this option any time you want to log in to Meridium APM manually on a system where automatic login has been enabled.

**To override automatic login and force a manual login:**

- Hold down the **Shift** key when you launch the application.

The instructions in this documentation provide the *full* procedure for launching a Meridium APM application and logging in. Note, however, that when you launch an application, you may or may not be logged in automatically, depending on how your system has been configured. If you are

not logged in automatically, you can follow the instructions for logging in. If you are logged in automatically, the application will appear immediately after you complete the first step in the login procedure.

# Choosing the Application Server

To log in to Meridium APM, you must define an Application Server. The Application Server is defined when the Meridium APM Framework application or an administrative application (e.g., Configuration Manager) is first installed. In general, you should change the Application Server only if you are instructed to do so by your System Administrator

To select a different Application Server, click the **Change APM Application Server** link on the **Meridium APM Login** dialog box. This link is disabled by default. *To enable the link, you must hold down the Shift key when you launch the Meridium APM Framework.* These instructions assume that you have already accessed the **Meridium APM Login** dialog box.

**Note:** To log in to Meridium APM, you must also define a communication type, which is set to Remoting at installation. You should *always* use a Remoting connection when logging in to the Meridium APM Framework application, even if you are running the Meridium APM Framework application on the Application Server itself. You *never* need to change the communication type. If you are logging in to the Configuration Manager from a remote Meridium APM Framework workstation or on the Application Server to perform any task other than to debug rules, you should accept the default connection method. If you are logging in to the Configuration Manager *on the Application Server* to debug rules, you will need to use a local connection.

**To change the Meridium APM Application Server:**

1. On the **Meridium APM Login** dialog box, click the **Show Advanced Options** link.

   The dialog box expands to display additional options.
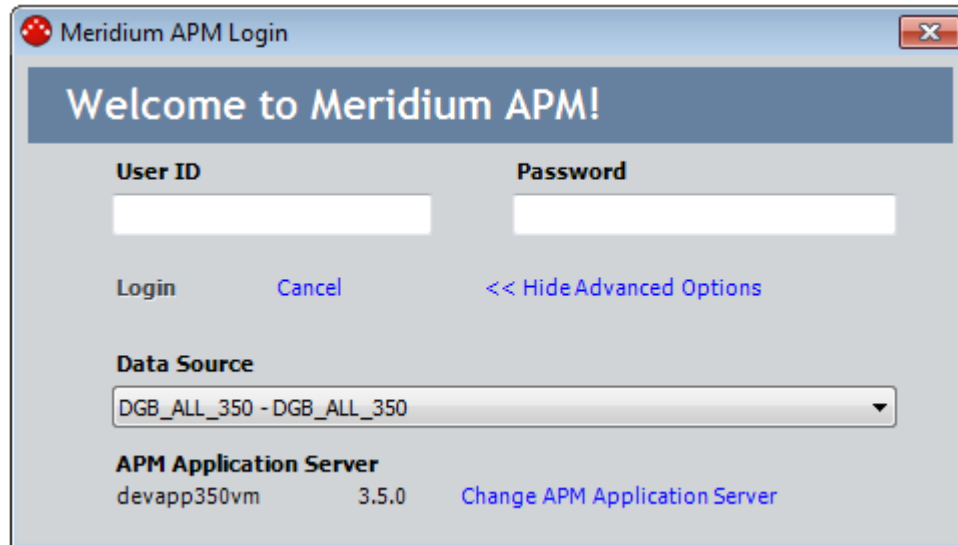
2. Click the **Change APM Application Server** link.

   The **APM Application Server** dialog box appears.
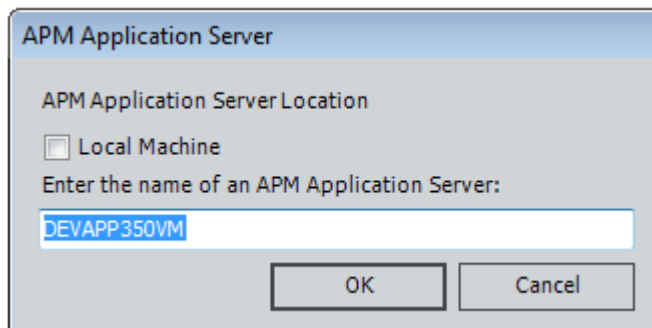


3. In the **Enter the name of an APM Application Server** text box, type the name of the Application Server to which you want to connect. Type *only* the name of the server machine, as shown in the preceding image. Do not type the server name using the UNC format.

   **Note:** As long as the **Local Machine** check box is not selected, the Meridium APM Framework will connect to the Meridium APM Application Server via a Remoting connection.

4. Click **OK**.

   The **APM Application Server** dialog box closes, revealing the **Meridium APM Login** dialog box. At this point, you can log in or close the **Meridium APM Login** dialog box.

# Selecting a Data Source

Before you can log in to Meridium APM, you must select a data source. System Administrators can designate a default data source so that you do not have to select one before you can log in. But you can use these instructions if you want to choose a data source other than the default. Note that these instructions assume that you have already accessed the **Meridium APM Login** dialog box and have entered your user ID and password.

**To choose a data source for login:**

1. On the **Meridium APM Login** dialog box, click the **Show Advanced Options** link.

   The dialog box expands to display additional options.
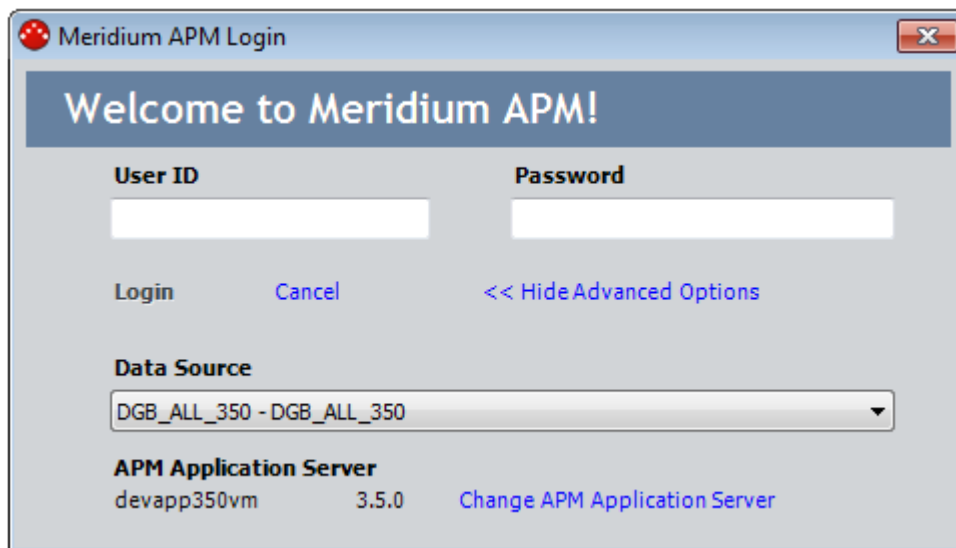


2. In the **Data Source** list, click the down arrow and choose the desired data source. The available data sources are specific to the selected Application Server.

3. Click the **Login** link.

   You are connected to the selected data source, and the Meridium APM application appears.

# Launching Meridium APM from a URL

You can use any Meridium APM URL to launch the Meridium APM Framework application and go directly to that page or item. For example, the URL **meridium://Inspection** will take you directly to the **Inspection Start Page**. When you create a desktop shortcut to a page in Meridium APM, Meridium APM creates a URL and stores it in the shortcut Properties. By double-clicking the desktop shortcut, you can open Meridium APM directly to that page. Similarly, you can type any Meridium APM URL in the address field of Internet Explorer to launch Meridium APM and take you to the appropriate page.

When you launch Meridium APM from a URL, either via a desktop shortcut or Internet Explorer, you can optionally specify a user name, password, and data source. Omitting these values will cause Meridium APM to display the **Meridium APM Login** dialog box, where you can manually specify your user name and password and select a data source. If you specify these values, however, the **Meridium APM Login** dialog box will not be displayed, and you will be logged in using the authentication information defined in the URL.

To specify a user name, password, and data source in a URL, use the following syntax:

**meridium://<user ID>:<password>@<DATA SOURCE>/path**

...where:

- <**user ID**> is the user ID of the Meridium APM Security User that you want to use for logging in.

- <**password**> is the password associated with the specified user ID. A password is required for this URL to work properly. *This feature cannot be used with users who have a blank password.*

- <**DATA SOURCE**> is the name of the desired Meridium APM data source. For the URL to work properly, the data source name must be specified in the URL exactly as it appears in the Data Source Manager and should not contain any spaces or special characters.

For example, consider the following URL:

meridium://RCMAdmin:RCMAdmin@MERIDIUM_DB/RCM/EXPLORER?EntityKey=1234567&FamilyKey=2345678

This URL will log you in to the MERIDIUM_DB database as the user RCMAdmin and opens the analysis with the Entity Key 1234567 on the **RCM Explorer** page. Note that the path portion of the URL can be as detailed as necessary to take you to the desired location.

Note that you can also omit the user ID and password in the URL and only specify the data source. For example, if a user clicked the following link, the URL would open the **Meridium APM Login** dialog box with the specified data source selected in the **Data Source** list:

meridium://@MERIDIUM_DB/RCM/EXPLORER?EntityKey=1234567&FamilyKey=2345678

**Note:** Attempting to open certain pages in Meridium APM via Internet Explorer will cause a page not found error to appear because Internet Explorer automatically appends an additional forward slash to some URLs.

# Configuration Manager

## Introduction to the Configuration Manager

The Configuration Manager is the application that you will use for configuring how data will be stored in the Meridium APM database and displayed in Meridium APM applications.

**Note:** To perform all the tasks in the Configuration Manager, you will need to log in to the Configuration Manager as a Super User. If you are granted a less permissive administrative role (i.e., the MI Configuration Role, MI Power User Role, or MI Security Role), you will be allowed to perform only certain tasks in the Configuration Manager. Note that throughout the Configuration Manager documentation, we assume that you are logged in to the Configuration Manager as a Super User.

Using the Configuration Manager, you can perform a wide range of tasks, all of which are related in some way to determining how data will be stored in your database and presented to end users. Depending on your role as an administrative user and where you are in your implementation process, you may need to perform all or only some of the tasks that can be completed in the

Configuration Manager. Additionally, some Configuration Manager tasks need to be performed once or very rarely, usually when you first set up your system, while others need to be performed periodically over the life of your system, either to support upgrades or to fine-tune your existing system.

Whatever your role is and wherever you are in the process of setting up your system, a general understanding of the Configuration Manager's features and how they relate to one another will help you decide how and when to leverage the Configuration Manager functionality to set up and maintain your system. The following list provides an overview of the tasks that you can perform in the Configuration Manager.

Note that the organization of this list is not meant to imply a recommended workflow. While the completion of some tasks requires the completion of others, the order in which you complete the full range of Configuration Manager tasks is largely up to you. In determining what tasks you need to complete, you will need to take into account the current state of your system (e.g., are you starting with a baseline Meridium APM database? or does your database already contain some of your own metadata?) and the desired result.

In the Configuration Manager, you can:

- Import and export Meridium APM metadata. The Import/Export Metadata tool has many applications but can be especially useful for manipulating large amounts of metadata. It can also be useful if you need to make changes to metadata in multiple Meridium APM data sources. The Import/Export Metadata tool allows you to export the metadata from one data source, make the necessary changes, and then import the modified metadata into one or more other data sources.

- Create and manage entity families, including:

    - Adding new families to the entity family hierarchy.

    - Managing family fields.

    - Working with field rules and family rules.

    - Managing the physical database tables for each family.

    - Managing the datasheets for each family.

    - Managing the privileges associated with each family.

- Manage relationship families and definitions, which define the connections between the entity families in your database.

- Manage system security, including defining Security Users and Security Groups and assigning privileges to them. The Security User accounts that you set up determine who can log into your system and what each user can and cannot access after logging in.

- Manage System Codes and tables.

- Work with the Meridium APM Rules Library, which serves as a repository of rule code that can be referenced from within family rules to provide you with an orderly and efficient mechanism for managing family rule logic.

- Define the units of measure that will be used in your system and configure the conversions between them.

# Overview of the Meridium APM Configuration Manager Main Window

The **Meridium APM Configuration Manager** main window serves as the starting point for all tasks that you will perform in the Configuration Manager and gives you access to all the Configuration Manager features.
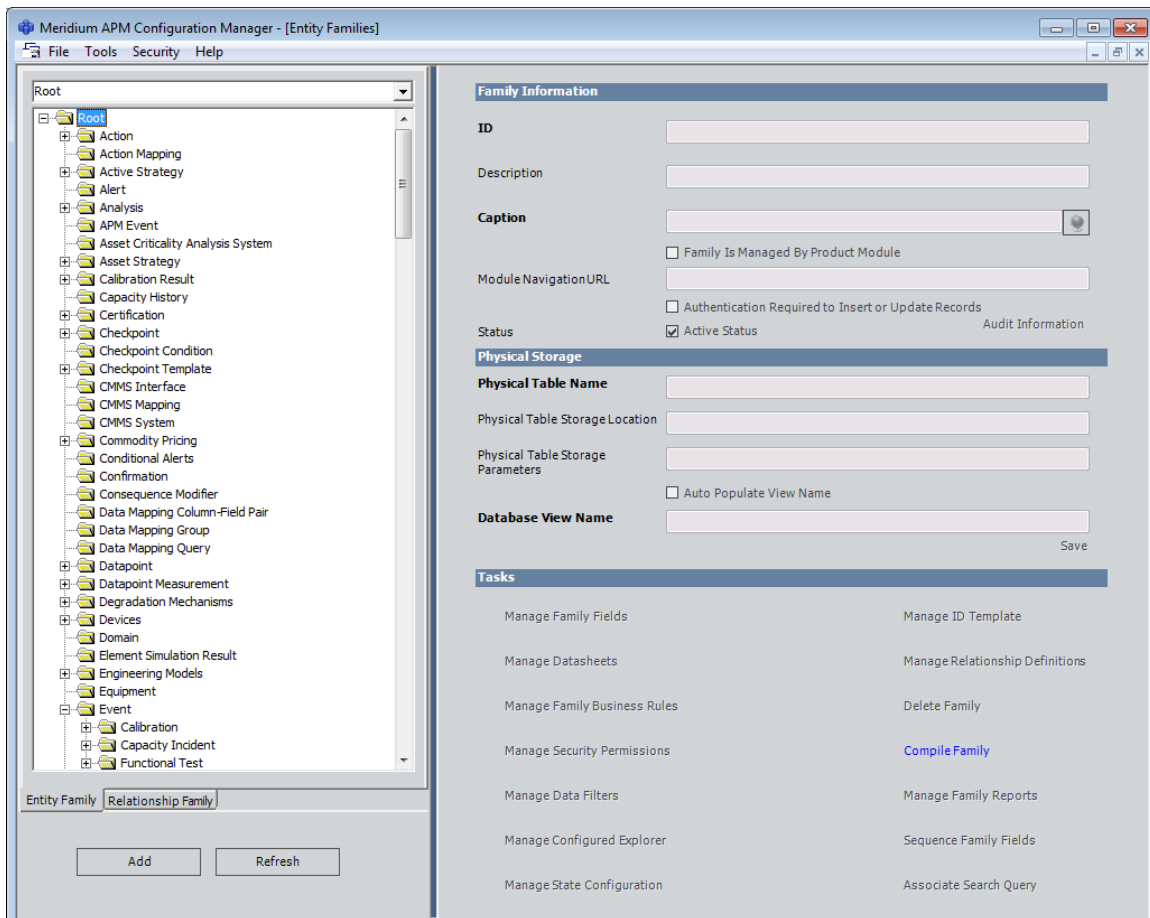
The window is divided into two main areas:

- The pane on the left displays a hierarchy of all the families that exist in the database.

- The area on the right displays information and functions associated with the family that you select on the left. The area on the right is divided into three sections: **Family Information**, **Physical Storage**, and **Tasks**.

A menu bar appears at the top of the window and gives you access to global Configuration Manager functions. Four menus are available from the menu bar: **File**, **Tools**, **Security**, and **Help**.

At the bottom of the window, the status bar displays the following information:

- **Application Server:** The name of the Meridium APM Application Server to which you are currently connected.

- **Data Source:** The name of the data source to which you are currently logged in. The database name is defined in the Data Source Manager via the **Database Name** value.

# Using the Configuration Manager Menus

## File Menu
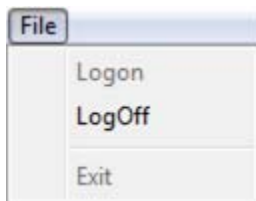


The **File** menu offers the following options:

- **Logon:** Displays the **Meridium APM Login** dialog box, where you can log on to the Configuration Manager. Note that this command is enabled only when you are logged off.

- **Logoff:** Logs you off of the Configuration Manager after asking for confirmation. Note that this option is enabled only when you are logged on.

- **Exit:** Closes the Configuration Manager application.

# Tools Menu
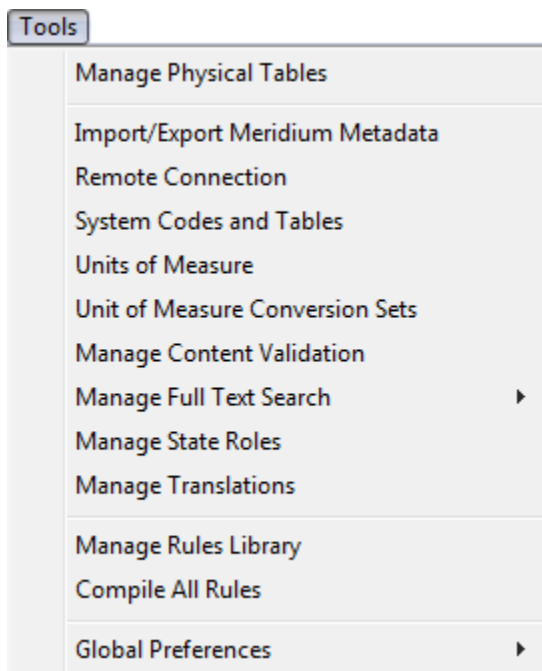


The **Tools** menu offers the following options:

- **Manage Physical Tables**: Displays the **Script Builder**, where you can build a script to manage physical tables.

- **Import/Export Meridium APM Metadata**: Displays the **Import/Export Metadata** window, where you can define settings for importing or exporting metadata.

- **Remote Connection**: Displays the **Remote Connection** dialog box, which you will need to use if you are using Citrix and Terminal Services. In this case, you will need to use this dialog box to specify the name of the Meridium APM Application Server where the Remote Connection Utility has been configured.

- **System Codes and Tables**: Displays the **System Codes and Tables** dialog box, where you can manage System Codes and tables.

- **Units of Measure**: Displays the **Units of Measure** window, where you can configure unit of measure conversions.

- **Unit of Measure Conversion Sets:** Displays the **UOM Conversion Sets** window, where you can configure UOM conversion sets.

- **Manage Content Validation:** Displays the **Content Validation Wizard**, where you can enable or disable content validation.

- **Manage Full Text Search:** Displays a submenu with the following options:

    - **Configure Search Fields:** Displays the **Configure Search Fields** window, where you can add fields to the Keyword Search index.

    - **Build Search Index:** Displays the **Search Index Builder**, which you can use to build the Keyword Search index.

- **Manage State Roles:** Displays the **Roles** window, where you can create, modify, and delete State Configuration Roles.

- **Manage Translations:** Displays the **Manage Translations** window, where you can manage translations for Meridium APM.

- **Manage Rules Library:** Displays the **Rules Library** window, where you can work with rule projects in the Rules Library.

- **Compile All Rules:** Displays the **Project Compilation** dialog box, where you can compile all entity families, relationship families, and Rules Library projects.

- **Global Preferences:** Displays a submenu with the following options:

    - **LDAP Integration:** Displays the **LDAP Integration** dialog box, where you can enable or disable LDAP integration.

    - **Query Timeout Limit:** Displays the **Query Timeout Limit** dialog box, where you can specify the query time-out limit for Security Users who are restricted by query time-outs.

    - **Required Field Back Color:** Displays the **Color** dialog box, where you can define the background color of required fields.

    - **Disabled Field Back Color:** Displays the **Color** dialog box, where you can define the background color of disabled fields.

- **Multi-Value Field Back Color:** Displays the **Color** dialog box, where you can define the background color of multi-value fields.

- **Formula Field Back Color:** Displays the **Color** dialog box, where you can define the background color of formula fields.

- **Usage Metrics Tracking:** Displays the **Usage Metrics Tracking** dialog box, where you can enable or disable the logging of usage metrics.

- **SQL Server Report Server:** Displays the **SQL Server Report Server** dialog box, where you can identify the SQL Server Report Server.

- **Activate Licenses:** Displays the **Activate Licenses** dialog box, where you can activate licensed modules and products.

- **Default Web Server:** Displays the **Default Web Server** dialog box, where you can identify the Meridium APM Web Server.

- **Global Number and Date Format:** Displays the **Global Format Settings** dialog box, where you can define the format that will be used throughout the product for number and date fields.

- **Group Home Page Sharing:** Displays the **Share Home Page Sections** dialog box, where you can determine whether or not Group Home page sections will be shared automatically with User and Sub-group Home Pages.

- **Hide Keyword Search:** Gives you the option of hiding the Keyword Search feature so that it will not be available to users.

- **Asset Answers URL:** Displays the **Asset Answers URL** dialog box, where you can define the URL for Asset Answers. The default value is *https://answers.assetanswers.com*. If you have configured single sign-on for Asset Answers, you need to replace this default URL with the one provided by Meridium, Inc. Failure Elimination users will be able to access Asset Answers from the **Go To** menu in the Meridium APM Framework.

## Security Menu
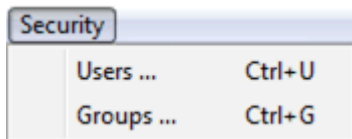


The **Security** menu offers the following options:

- **Users:** Displays the **Application Users** window, where you can set up user accounts for the Meridium APM system.

- **Groups:** Displays the **Application Groups** window, where you can configure group accounts for the Meridium APM system.

## Help Menu
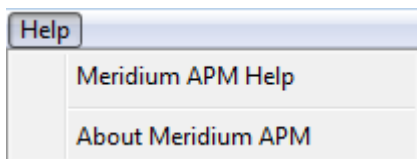


The **Help** menu offers the following options:

- **Meridium APM Help:** Displays the Meridium APM Help system.

- **About Meridium APM:** Displays the **About Meridium APM** window, which shows version information about the Meridium APM product that is currently installed as well as information about your current login settings. The **About Meridium APM** window also displays the version information for the database to which you are currently connected.

# Working with the Entity Family/Relationship Family Pane

## About the Entity Family/Relationship Family Pane

The **Entity Family/Relationship Family** pane, which appears on the left side of the **Meridium APM Configuration Manager** main window, displays a hierarchy

of all the record and relationship families that currently exist in the Meridium APM database. You can click the plus sign (+) to expand a family node or the minus sign (-) to collapse a family node.

## Aspects of the Entity Family/ Relationship Family Pane

At the top of the **Entity Family/Relationship Family** pane, a drop-down list appears. You can select a family from the list to find and expand it in the tree. Families appear in the drop-down list in alphabetical order.

The display area is organized into two tabs:

- **Entity Family:** Displays a hierarchical view of all the entity families in the database. The Root family is at the highest level and serves as the parent of all families. Below the Root level, families may be organized into various sublevels.

- **Relationship Family:** Displays a list of all the relationship families that exist in the database. Relationship families store relationship definitions, which define the connections between entity families.

At the bottom of the pane, two buttons appear:

- **Add:** Depending on which tab is currently selected, displays the **Add Entity Family** or **Add Relationship Family** dialog box, which lets you create a new an entity or relationship family.

- **Refresh:** Reloads the hierarchal view so that it displays the most current information.

## Finding a Family in the Hierarchy

When you first access the Configuration Manager, the **Root** family is selected by default at the top of the **Entity Family/Relationship Family** pane. Below the **Root** level, all of the families in the hierarchy appear in alphabetical order. Note that you cannot change the order of the families.

**To find a family using the drop-down box:**

1. In the **Entity Family/Relationship Family** pane, click the **Entity Family** tab.

2. In the list above the family hierarchy, scroll through the alphabetical list of families, and click the desired family.

-or-

Type all or part of the name of the desired family until you locate the desired family, and then click the family in the list.

The selected family becomes highlighted in the family hierarchy, and the family folder is automatically expanded to display the subfamilies that belong to the selected family. Additionally, the family's properties are displayed in the sections on the right side of the Configuration Manager main window.

**To find a family by navigating the hierarchy manually:**

1. In the **Entity Family/Relationship Family** pane, click the **Entity Family** tab.

2. Click the plus signs (+) to the left of each family name to expand the hierarchy.

3. Continue expanding the hierarchy until you locate the desired family.

4. Select the family to expand the family folder and display the family properties in the sections on the right side of the **Meridium APM Configuration Manager** main window.

# Refreshing the Hierarchy

Whenever you make changes to the Entity Family or Relationship Family hierarchy, you will want to refresh the display to show your changes.

**To refresh the Entity Family or Relationship Family hierarchy:**

- At the bottom of the **Entity Family/Relationship Family** pane, click the **Refresh** button.

The display reloads to show the most current information.

# About the Family Information Section

When you select a family in the **Entity Family/Relationship Family** pane, the data for that family appears in the **Family Information** section on the right side of the **Meridium APM Configuration Manager** main window.

The **Family Information** section displays the following items:

- **ID text box:** Contains the unique ID assigned to the selected family. This is how the family is identified in the hierarchy and elsewhere in the database and is required for each family.

- **Description text box:** Displays a description of the family.

- **Caption text box:** Contains the name of the family as it is labeled to users throughout the system.

- **Family Is Managed By Product Module check box:** Specifies whether or not records in the family can be modified only using the associated module and not the Record Manager. If the check box is selected, records in the family can be modified only using the associated module. If the check box is cleared, records in the family can be modified using the module or the Record Manager. This check box is enabled only if you select a family on the **Entity Family** tab. It is *disabled* if you select a family on the **Relationship Family** tab.

- **Module Navigation URL text box:** Displays a URL that will be used to redirect users from the Record Manager to the associated module when viewing a record belonging to this family in the Record Manager. This text box is enabled only if the **Family Is Managed By Product Module** check box is selected.

- **Authentication Required to Insert or Update Records check box:** Specifies whether or not authentication is required to create or modify records in the family. If this check box is selected, the password associated with the Security User who is currently logged in is required each time you create or modify a record in that family, and revision history is enabled automatically for that family. If this check box is cleared, records in that family can be created or modified without requiring a password. This check box is enabled only when a family is selected in the **Entity Family** pane and is cleared by default.

- **Active Status check box:** Specifies the status of the family. If the check box is selected, the family is active. If it is not selected, the family is inactive.

- **Audit Information link:** Displays the **Audit Information** dialog box, which contains the date on which the family was last modified and the name of the user who modified it.

# About the Physical Storage Section

When a family is selected in the **Entity Family/Relationship Family** pane, the physical table information is displayed in the **Physical Storage** section on the right side of the **Meridium APM Configuration Manager** main window.

The **Physical Storage** section displays the following fields:

- **Physical Table Name:** Displays the name of the physical database table that exists for the family.

- **Physical Table Storage Location:** Displays the specific tablespace location for the family. If the table is generated by the Meridium APM system based on parameters you enter, it is an internal table. If the table exists in another application that Meridium APM points to, the table is external.

- **Physical Table Storage Parameters:** Displays the specific storage parameters for the current database table.

- **Database View Name:** Specifies the name of the database view that will be used by this family. Select the **Auto Populate View Name** check box to automatically update the family view name when you make changes to the family ID.

If you make any changes to the values in this section, the **Save** link becomes enabled. You can click the **Save** link to save your changes.

# About the Tasks Section

When you select a family in the **Entity Family/Relationship Family** pane, the following links become enabled in the **Tasks** section on the right side of the Configuration Manager main window:

**Note:** The available tasks depend on whether you have selected an entity family or relationship family in the **Entity Family/Relationship Family** pane.

- **Manage Family Fields:** Displays the **Manage Family Fields** window, where you can define the fields for the selected family.

- **Manage Datasheets:** Displays the **Datasheet Builder** window, where you can configure datasheets for the selected family.

- **Manage Family Business Rules:** Launches the **Meridium APM Rules Editor**, which is the tool that you can use to define rules for the selected family.

- **Manage Security Permissions:** Displays the **Family Privileges** window, where you can specify which users and groups can manage records belonging to the selected family.

- **Manage Data Filters:** Displays the **Family Filters** window, where you can configure the system to filter the data that appears in the Meridium APM Framework application. You can select a root-level entity family and then apply a Meta-SQL filter for each operation (Select, Insert, Update, or Delete) that members of a selected Security Group will be allowed to perform in the Meridium APM Framework application. By using data filters, you can implement site-level security. Additionally, you can allow different Security Groups located at different sites within a single organization to perform only assigned operations on records belonging to specific sites.

- **Manage Configured Explorer:** Displays the **Configured Explorer** window, where you can associate the selected family with a configured explorer or remove the current configured explorer association.

- **Manage State Configuration:** Displays the **State Configuration** window, where you can define State Configuration for the selected family.

**Note:** If State Configuration is not already defined for the selected family, clicking the **Manage State Configuration** link will display a message asking if you are sure that you want to define State Configuration for the selected family. If you click the **Yes** button, another message appears, indicating the status of the creation of the State Configuration fields. Clicking **OK** will display the **State Configuration** window, where you can define State Configuration for the selected family.

- **Manage ID Template:** Displays the **Manage ID Template** window, where you can manage the ID Template associated with the selected entity family.

- **Manage Relationship Definitions:** Displays the **Relationship Definitions** window, where you can define the rules for a selected relationship family. This link is enabled only when you select a family on the **Relationship Family** tab.

- **Delete Family:** After asking for confirmation, deletes the selected entity or relationship family from the database.

- **Compile Family:** Compiles the metadata for the selected family or relationship. You will need to recompile the metadata whenever you make a change to the structure of your information in the Configuration Manager. A change in the metadata includes modifications such as a rule modification, an addition or deletion of a field, or the addition or deletion of a family.

- **Manage Family Reports:** Displays the **Family Reports** window, where you can manage the reports that are associated with the selected family.

- **Sequence Family Fields:** Displays the **Family Fields Sequence Order** window, where you can view and modify the field sequence order for the selected family.

- **Associate Search Query:** Displays the **Search Query** dialog box, where you can search for the Simple Search query that you want to associate with the selected family.

# Schedule Manager

## About the Meridium APM Schedule Manager

**Note:** To use the Schedule Manager application, you must be logged in as a Windows user with an *Administrator* account to the machine where Schedule Manager is installed.

You can use the Meridium APM Schedule Manager to manage scheduled items. A *scheduled item* is an object that contains the scheduling information for executing a Meridium APM operation or procedure automatically. Scheduled items are stored in the Meridium APM database. The Meridium APM Schedule Manager displays a list of all the scheduled items that exist in the Meridium APM database.

In most cases, a Meridium APM Framework user will use the workflow defined within a specific module to schedule a Meridium APM object for execution. For example, in the Meridium APM Framework application, users can define schedules for reevaluating RCM and FMEA Recommendation records. When you define a schedule in the Meridium APM Framework in this way, a scheduled item will be created automatically. All the scheduled items that are created through the Meridium APM Framework application appear in the list of scheduled items in the Meridium APM Schedule Manager.

In other cases, however, scheduled items must be created in the Meridium APM Schedule Manager *manually*. For example, in Root Cause Analysis, users can create RCA Tracking Item records that contain criteria for when a piece of equipment requires reevaluation. In this case, a scheduled item must be created manually via the Schedule Manager to compare the criteria specified in the RCA Tracking Item records with the information in the database. When you create a scheduled item in the Meridium APM Schedule Manager, it appears in the list of scheduled items.

## How Scheduled Items Are Executed

After scheduled items have been created, they are executed automatically by the Meridium APM system via the *Meridium APM Scheduling Service*, which is installed on the Meridium APM Application Server machine. The Meridium APM Scheduling Service checks periodically for items that need to be executed according to their scheduling criteria. By default, the Meridium APM Scheduling Service checks for qualifying scheduled items every 15 minutes, but you can change the default frequency if desired.

For example, assuming the default frequency of 15 minutes, suppose that according to the criteria in a scheduled item, a Metrics cube qualifies for processing on 8/1/2012 at 12:05 P.M. If the Meridium APM Scheduling Service checks for scheduled items on 8/1/2012 at *12:00* P.M., the cube will not be processed. If it checks again at *12:15* P.M., the cube *will* be processed because should have been executed at 12:05 P.M. (i.e., during the period of time since the Meridium APM Scheduling Service last checked for qualifying scheduled items).

When the Meridium APM Scheduling Service finds scheduled items that need to be executed, a new process is launched to execute those tasks. A new process will be started for *each* scheduled item that needs to be executed. It will run independently of other processes until execution is complete, after which it will end. Therefore, at any given time, if you view the list of processes in the Windows Task Manager on the Meridium APM Application Server, you may see multiple processes related to the Meridium APM Schedule Manager:

- **Meridium.Core.Scheduling.Service.exe**: This process is associated with the Meridium APM Scheduling Service and runs continuously as long as the Meridium APM Scheduling Service is running. This process is responsible for checking periodically for scheduled items that are ready to be executed.

- **ScheduleManagerProcess.exe**: This process is responsible for actually executing scheduled items. You will see one instance of this process for *each* operation that is currently being executed.

Note the following details about scheduled item execution:

- For scheduled items to be executed, the Meridium APM Scheduling Service must be running on the Meridium APM Application Server.

- Scheduled items are stored in the Meridium APM database. If your system contains *multiple* Meridium APM Application Server machines that connect to the *same* Meridium APM database, you will need to designate *one* of those Meridium APM Application Server instances for executing scheduled items in that database. You can configure this for each data source the Meridium APM Data Source Manager.

- Scheduled items should not be scheduled to run any more frequently than the Meridium APM Scheduling Service is configured to check for qualifying items. For example, if you create a scheduled item to execute an operation every five minutes but the Meridium Scheduling Service is configured to check for qualifying items every 15 minutes, that scheduled item will be executed every 15 minutes rather than every five minutes. If more than one Meridium APM Application Server is executing scheduled items in the same database, duplicate operations may occur (e.g., duplicate email alerts may be sent to the same user). You can designate the Meridium APM Application Server that should be used for executing scheduled items in a given database via the Meridium APM Data Source Manager.

- Only a *single* instance of a scheduled item can be running at any given time. When the Meridium APM Scheduling Service identifies a scheduled item that qualifies for execution, before executing the job, Meridium APM checks to make sure that the scheduled item is not already running. If it is, the scheduled item will not be executed again until the operation that is currently in progress is completed. For instance, suppose you create a scheduled item and specify that it should be executed every five minutes. If the operation defined within the scheduled item actually takes *nine* minutes to complete, the item will not be executed again five minutes after it has started. Instead, Meridium APM will wait for the operation to complete before executing the scheduled item again. Note that the Last Execution Date is updated when a scheduled item is executed *successfully*, not when Meridium APM *attempts* to execute it.

For details on starting the Meridium APM Scheduling Service, see the Meridium APM Installation, Upgrade, and System Administration Help.

# Configuring the Meridium APM Scheduling Service

## Determining How Often the Schedule Manager Checks for Scheduled Items

After scheduled items exist in the Schedule Manager, they are executed automatically by Meridium APM via the *Meridium APM Scheduling Service*, which is installed on the Meridium APM Application Server machine. The Meridium APM Scheduling Service checks periodically for items that need to be executed according to their scheduling criteria. For example, suppose that according to the criteria in a scheduled item, a cube qualifies for processing on 8/1/09 at 12:05 P.M. If the Meridium APM Scheduling Service checks for scheduled items on 8/1/09 at *12:00* P.M., the cube will not be processed. If it checks again at *12:15* P.M., the cube *will* be processed because should have been executed at 12:05 P.M. (i.e., during the period of time since the Meridium APM Scheduling Service last checked for qualifying scheduled items).

By default, the Meridium APM Scheduling Service checks *every 15 minutes* for qualifying scheduled items. If desired, you can specify a different frequency by modifying the value for the SleepPeriod setting value in the file **Meridium.Core.Scheduling.Service.exe.config**, which is installed to the folder **<root>\Application Server\Services** on the Meridium APM Application Server machine.

The following text shows an example of the SleepPeriod setting set to the default value of *15 minutes*:

```
<appSettings>

        <add key="SleepPeriod" value="15" />

</appSettings>
```

To specify a different frequency, you would replace 15 with a number representing the interval in minutes at which you want Meridium APM to check for qualifying scheduled items. For example, the following text specifies a frequency of *five* minutes:

```
<appSettings>

        <add key="SleepPeriod" value="5" />

</appSettings>
```

**Note:** After you modify the file Meridium.Core.Scheduling.Service.exe.config, you will need to restart the Meridium APM Scheduling Service.

## Specifying How to Log Information about Execution of the Scheduling Service

**Note:** These instructions assume that you are familiar with using nLog.

**To specify how to log information about execution of the Meridium APM Scheduling Service:**

1. On the Meridium APM Application Server, navigate to the folder **<root>\ApplicationServer\Services**, where **<root>** is the root drive and folder in which the Meridium APM Application Server was installed (e.g., C:\Program Files\Meridium).

2. Open the file **Meridium.Core.Scheduling.Service.exe** in a text editor.

3. If you want to specify a different output location of the log file other than the default location or change anything else about the log file, do so in the following line:

```
<target name="file" type="File"
fileName="Meridium.Core.Scheduling.Service.log"
layout="${date}|${stacktrace}|${event-
context:ApplicationServer}|${event-
context:DataSource}|${message}|${exception:format=ToString}" />
```

4. If you want to specify that the log should contain a different level of detail other than *Info*, in the following line, replace **Info** with the desired value (e.g., **Trace**):

```
<logger name="Meridium.Core.*" minlevel="Info" writeTo="file" />
```

5. Save the file.

# Aspects of the Meridium APM Schedule Manager - Scheduled Items Window

The **Meridium APM Schedule Manager - Scheduled Items** window displays in a grid a list of all items that have been scheduled.
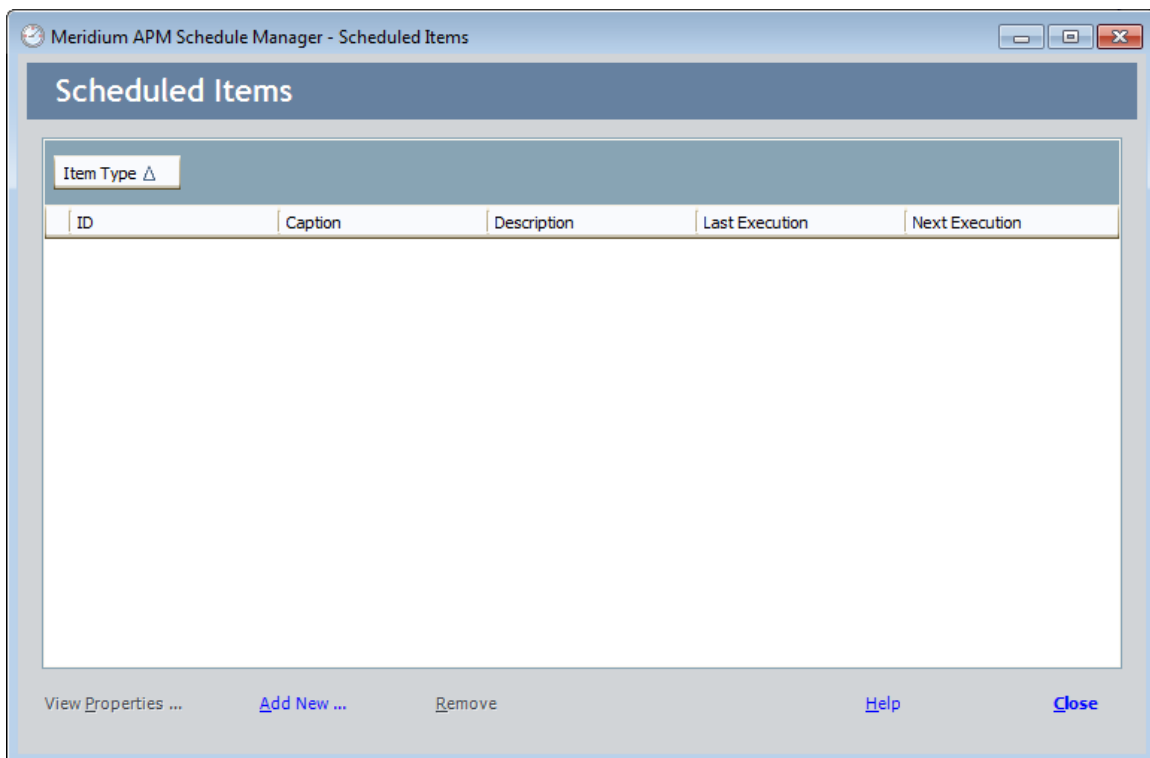


The grid contains the following information for each scheduled item:

- **Item Type:** The default item type defined by Meridium APM when the scheduled item was created. The grid is grouped by this field.

- **ID:** The ID of the scheduled item.

- **Caption:** The default caption that was defined by Meridium APM when the item was created.

- **Description:** The default description defined by Meridium APM when the scheduled item was created.

- **Last Execution:** The date and time the scheduled item was last executed.

- **Next Execution:** The date and time that Meridium APM will attempt to execute the item again.

At the bottom of the window, the following links are displayed:

- **View Properties:** Displays the details of the currently selected scheduled item so that you can review and modify the schedule parameters, if desired.

- **Add New:** Displays the **Choose an Assembly** dialog box, where you can select the file associated with the type of scheduled item that you want to create.

- **Remove:** Deletes the currently selected scheduled item from the database.

- **Help:** Displays the **Meridium APM Help** window, showing a Help topic that is specific to the Meridium APM Schedule Manager.

- **Close:** Closes the Meridium APM Schedule Manager application.

# Creating a New Scheduled Item

The following instructions provide details on creating a scheduled item manually. In some cases, you might need to create scheduled items manually to complete a module-specific workflow in the Meridium APM Framework application.

**To create a new schedule:**

1. In the Schedule Manager, at the bottom of the **Meridium APM Scheduler - Scheduled Items** window, click the **Add New** link.

   The **Choose a Meridium Assembly** dialog box appears.

2. Open the .DLL file that corresponds to the type of schedule item that you want to create.

   **Note:** There must be existing code in the form of a .DLL file that was generated when the object was created.

   The **Schedule <Item>** dialog box appears, where **<Item>** is the name of the item that is being scheduled. By default, the **Task** tab appears.

Note: The appearance and content of this dialog box may vary slightly from what is shown in the image, depending upon which assembly you selected.

The **Last Executed** box lists the date on which the scheduled item was last executed. If the scheduled item has never been executed, **Never** is listed in this box.

3.  In the **Next Execution** text box, click the down arrow, and select the date from the Calendar on which the scheduled item should be executed. The Next Execution date is set by default to the current date.

4.  If the scheduled item should be executed more than once, select the **Recurring Item** check box.

    The fields below the check box become enabled.

5.  To select the frequency with which the scheduled item will be executed, click the option button next to the desired pattern, and complete the fields as desired. The following table describes the schedules by which you can configure an item to be executed.

| Frequency | Example | Default |
|---|---|---|
| Every **x** number of minutes. | Every thirty minutes. | Every minute. |
| Every **x** number of days. | Every two days. | Every day. |
| Every **x** day of every **x** number of weeks, where you define the day of the week. | Every Sunday of every two weeks. | Every Sunday of every week. |
| Every **x** month on day **x** of that month. | Every three months on day 10 of the month. | Every month on day 1 of the month. |
| Every **x** year on **x** date, where you define the date. | Every two years on March 15 of that year. | Every year on the current day of that year. For example, if the current date is January 9, the default value will be every year on January 9. |

6.  Click the **User** tab.

7.  Type your Meridium APM User ID and password, and then click **OK**.

    The system saves the scheduled item along with its execution schedule. The **Meridium APM Schedule Manager - Scheduled Items** window appears again, and the new scheduled item is listed in the grid.

# Modifying a Scheduled Item

**To edit an existing schedule or view the properties of an existing schedule:**

1.  In the Schedule Manager, on the **Meridium APM Schedule Manager - Scheduled Items** window:

-   Click the ID of the scheduled item that you want to modify.

        -or-

-   Select the row containing the desired scheduled item, and click the **View Properties** link.

    The **Schedule <Item>** dialog box appears, where **<Item>** is the name of the item that you want to modify. By default, the **Task** tab appears.
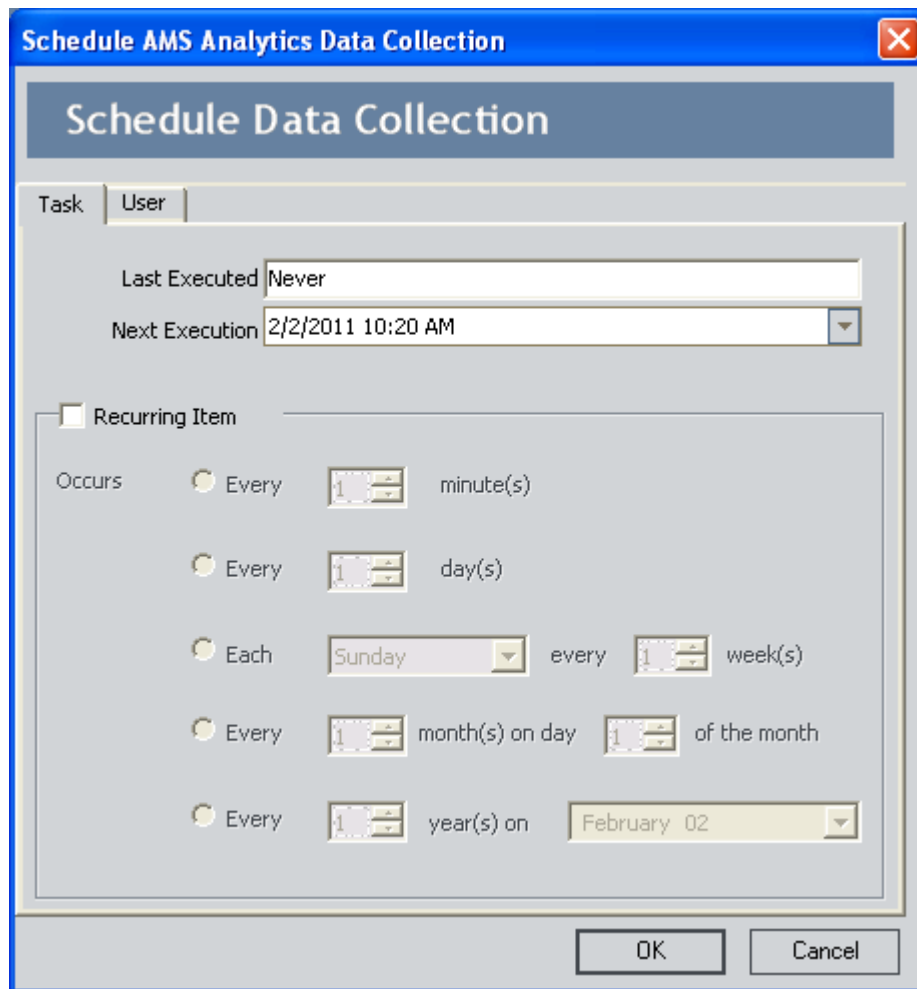
**Note:** The appearance and content of this dialog box may vary slightly from what is shown in the image, depending upon which scheduled item you selected.

2. On the **Task** tab, update the schedule as desired.

3. Click the **User** tab.

4. Type your Meridium APM User ID and password, and then click **OK**.

   The scheduled item is updated.

## Deleting a Scheduled Item

**To delete a scheduled item:**

1. In the Schedule Manager, on the **Meridium APM Schedule Manager - Scheduled Items** window, select the row containing the scheduled item that you want to delete.

2. Click the **Remove** link.

   A confirmation message appears, asking if you really want to delete the scheduled item.

3. Click the **Yes** button.

   The scheduled item is deleted from the database and removed from the list on the **Scheduled Items** screen.

# URL Manager

## Overview of the Meridium APM URL Manager Window

**Note:** To use the URL Manager application, you must be logged in as a Windows user with an *Administrator* account to the machine where URL Manager is installed.

The **Meridium APM URL Manager** window provides access to all the features that are available in the URL Manager.
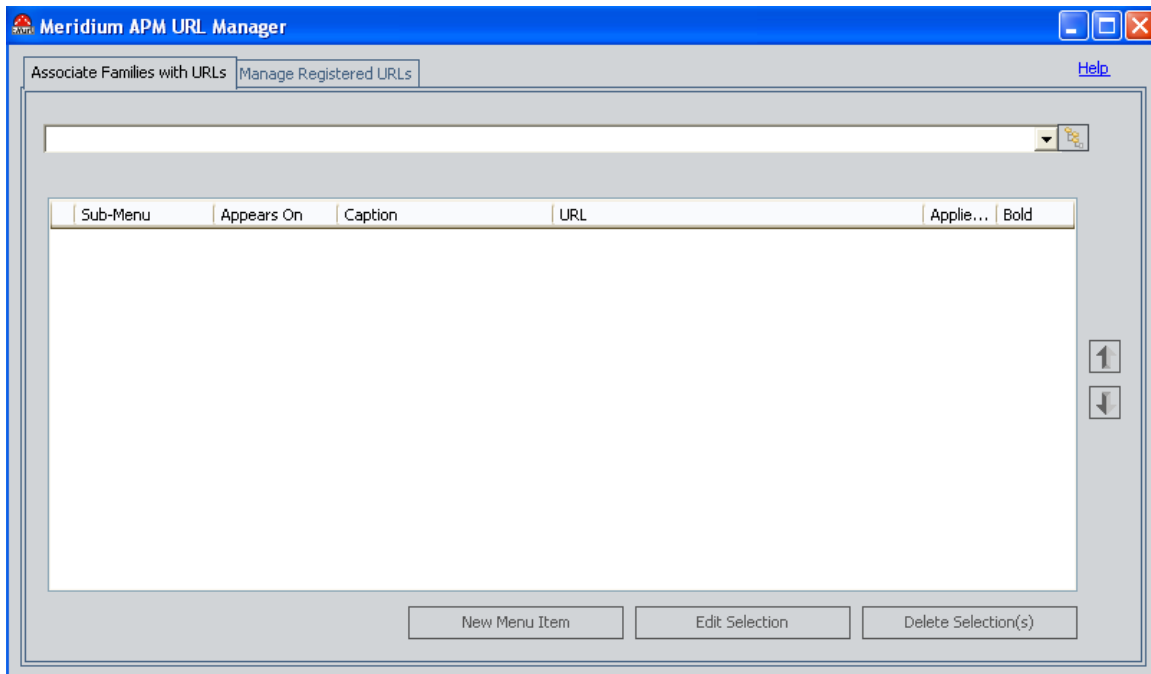
The **Meridium APM URL Manager** window is divided into two tabs:

- **Associate Families with URLs:** Lets you create links on the **Associated Pages** menu for Meridium APM families.

- **Manage Registered URLs:** Lets you view a list of URLs that are currently registered, register new URLs that are not yet registered, and unregister URLs that are currently registered.

At the bottom of the main window, a label appears, indicating the name of the user who is currently logged in and the data source to which the URL Manager is connected.

**Hint:** It is possible to open multiple instances of the Meridium APM URL Manager. The data source name at the bottom of the page can help you distinguish between separate instances if you are logged in to more than one database.

# Overview of the Manage Registered URLs Tab

The **Manage Registered URLs** tab is where you can view and manage all the URLs that are registered in your system.
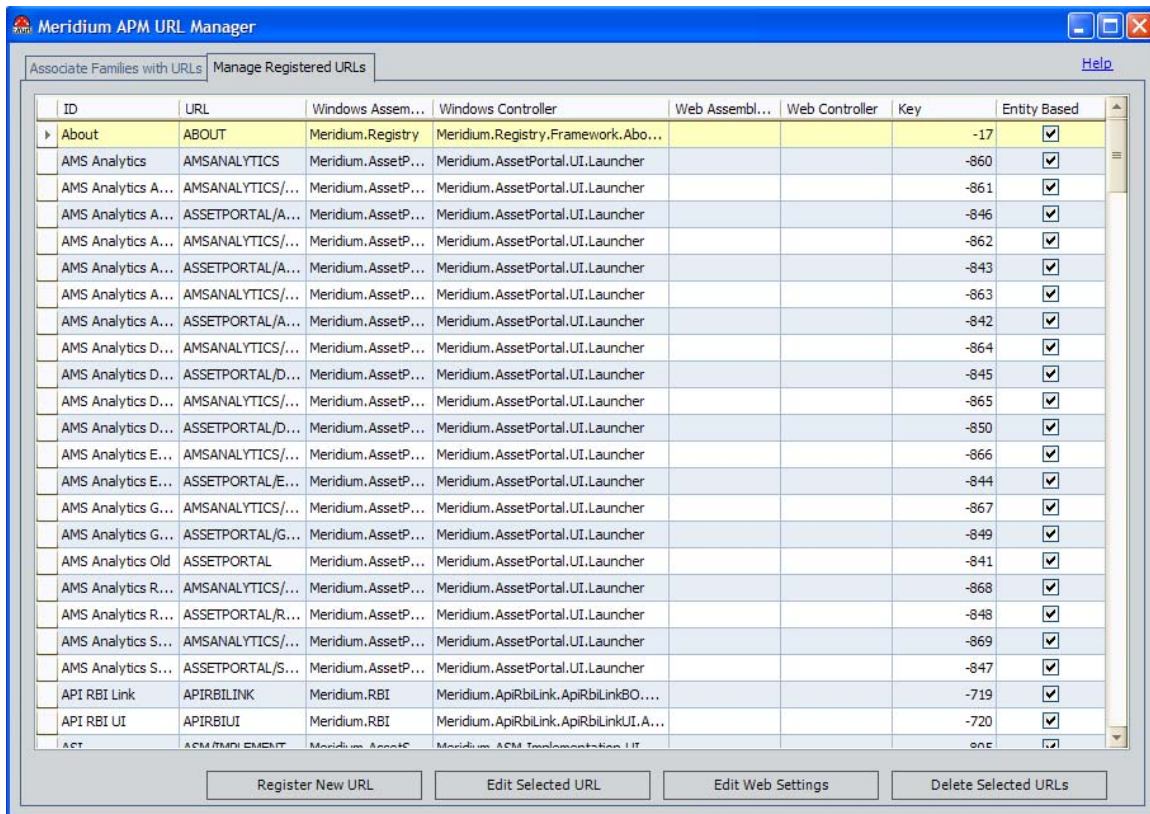
A registered URL is a URL path that is associated with a specific feature or location in the Meridium APM Framework application or the Meridium APM Web Framework. After a URL has been registered, that URL can be used to create a link that takes users directly to the location specified by the URL. Meridium APM is shipped with many URLs that have already been registered. Therefore, in most cases, you will not need to register Meridium APM assemblies manually before you can create links to the associated functionality.

The list on the **Manage Registered URLs** tab displays all the URLs that are currently registered in the Meridium APM system. For each URL, the list displays the properties that are defined for the URL. Below the list of URLs, the following buttons appear:

- **Register New URL:** Displays the **URL Registration** dialog box, where you can register a new URL.

- **Edit Selected URL:** Displays the **URL Registration** dialog box, where you can modify the properties of the selected URL.

- **Edit Web Settings:** Displays the **Web Settings** dialog box, where you can view and modify the web settings that are defined for the selected URL.

> **Note:** Registered URLs included in the baseline Meridium APM product that have no web settings defined by default represent areas of Meridium APM that are currently not available in the Meridium APM Web Framework.

- **Delete Selected URLs:** After asking for confirmation, deletes the selected registered URLs.

# Overview of the Associate Families with URLs Tab

The **Associate Families with URLs** tab is where you can view and manage all the Associated Pages that have been configured for your database.
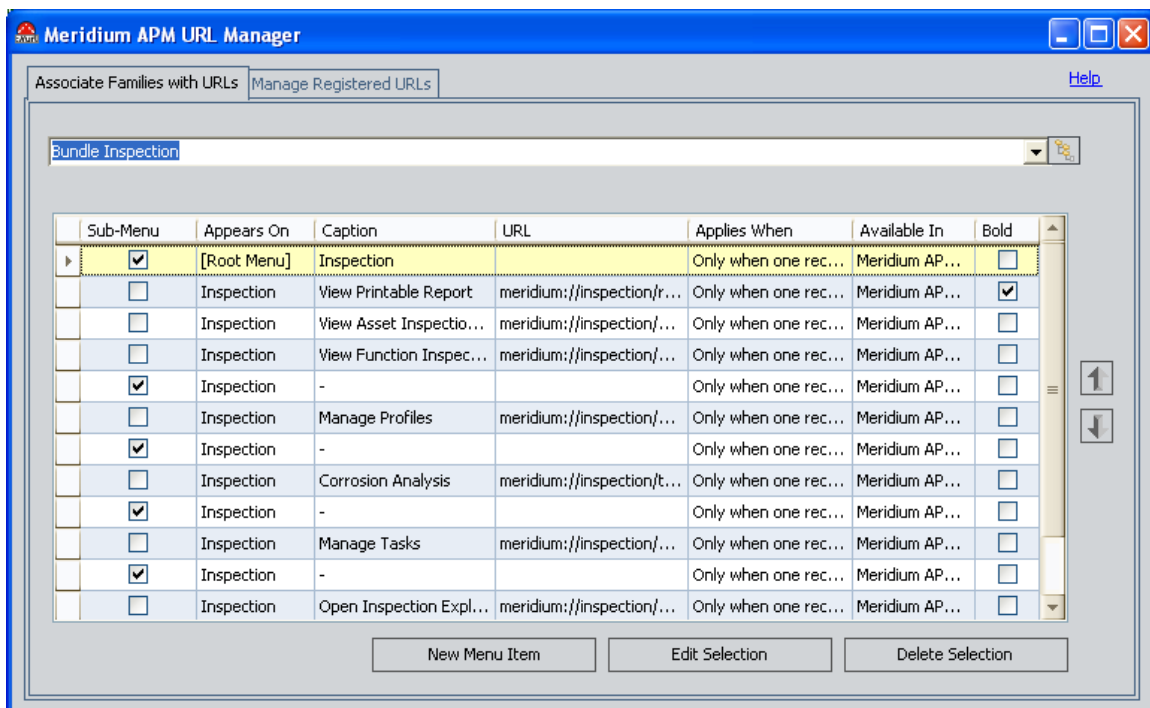


When you select a family from the list at the top of the tab, the main display area shows all the Associated Pages that have been configured for that family. The items will appear in the Meridium APM Framework and the Meridium APM Web Framework applications in the same order that they appear in the list. You can use the arrow buttons to the right of the list to reorganize the list. Below the main display area, the following buttons appear:

- **New Menu Item:** Displays the **Menu Item Information** dialog box, where you can create a new Associated Page for the selected family. This

button is enabled only when a family is selected in the list at the top of the window.

- **Edit Selection:** Displays the **Menu Item Information** dialog box, where you can modify the selected Associated Page for the selected family. This button is enabled only when you select an existing item in the list in the main display area.

- **Deleted Selection(s):** After asking for confirmation, deletes the selected item. This button is enabled only when you select an existing item in the list in the main display area.

# Exiting the Meridium APM URL Manager

To close the **Meridium APM URL Manager** and log out:

- In the upper-right corner of the **Meridium APM URL Manager** window, click the **X** button.

  The **Meridium APM URL Manager** window closes, and you are logged out of Meridium APM.

# Registered URLs

## Properties of a Registered URL

When you register a URL, you can define certain properties for that URL. The properties that are associated with a registered URL are displayed in columns in the grid on the **Manage Registered URLs** tab of the **Meridium APM URL Manager** window. For each URL, you can define the following properties:

- **ID:** The unique, alphanumeric value that identifies the URL.

- **URL:** The resource identifier that will be used for constructing links to the specified feature in Meridium APM.

- **Windows Assembly Name:** The name of the Meridium APM file that corresponds to the feature that will appear when a user clicks a Meridium APM Framework link constructed from the URL.

- **Windows Controller:** A value that further identifies the assembly associated with the Meridium APM Framework feature. The appropriate Windows Controller is assigned automatically when the assembly is selected for a registered URL.

- **Web Assembly Name:** The name of the Meridium APM file that corresponds to the feature that will appear when a user clicks a link in the Meridium APM Web Framework that has been constructed from the URL. URLs for features that are not available via the Meridium APM Web Framework do not have a **Web Assembly Name** defined.

- **Web Controller:** A value that further identifies the assembly associated with the Meridium APM Web Framework URL. A Web Controller will be defined only if a **Web Assembly Name** has also been defined.

- **Key:** The unique, system-assigned value that is used to identify the registered URL internally.

- **Entity Based:** A flag that specifies whether or not the URL is based on entities.
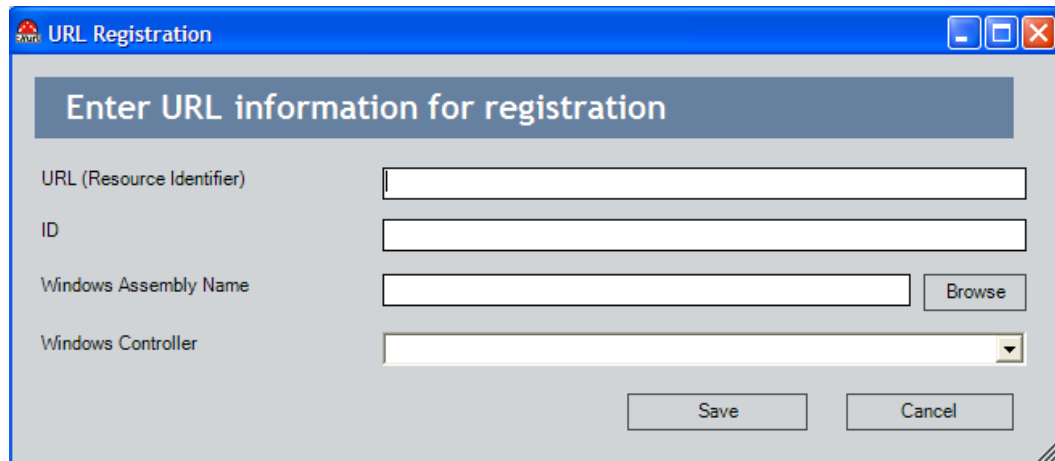
# Registering a New URL

Before you can use a URL to create a link to a feature in Meridium APM, the URL must be registered via the URL Manager. Registering a URL associates that URL with a particular Meridium APM assembly. In this way, when you construct a link using that URL, the link will navigate to the feature associated with the assembly.

**To register a new URL:**

1. In the URL Manager, on the **Meridium APM URL Manager** window, click the **Manage Registered URLs** tab.

2. Click the **Register New URL** button.

   The **URL Registration** dialog box appears.

3. In the **URL (Resource Identifier)** text box, type the URL that you want to use for linking to the specified location in Meridium APM, omitting the scheme portion of the URL.

   For example, the URL for linking to the **Search** page in the Meridium APM framework is **meridium://registry/finder**. In the **URL (Resource Identifier)** text box, however, you would omit **meridium://** and type just `registry/finder`.

4. In the **ID** text box, type a descriptive name for the URL. Note that the ID must be unique with respect to other URLs that are already defined.

5. To the right of the **Windows Assembly Name** text box, click the **Browse** button.

   The **Select a Launcher Assembly** dialog box appears.
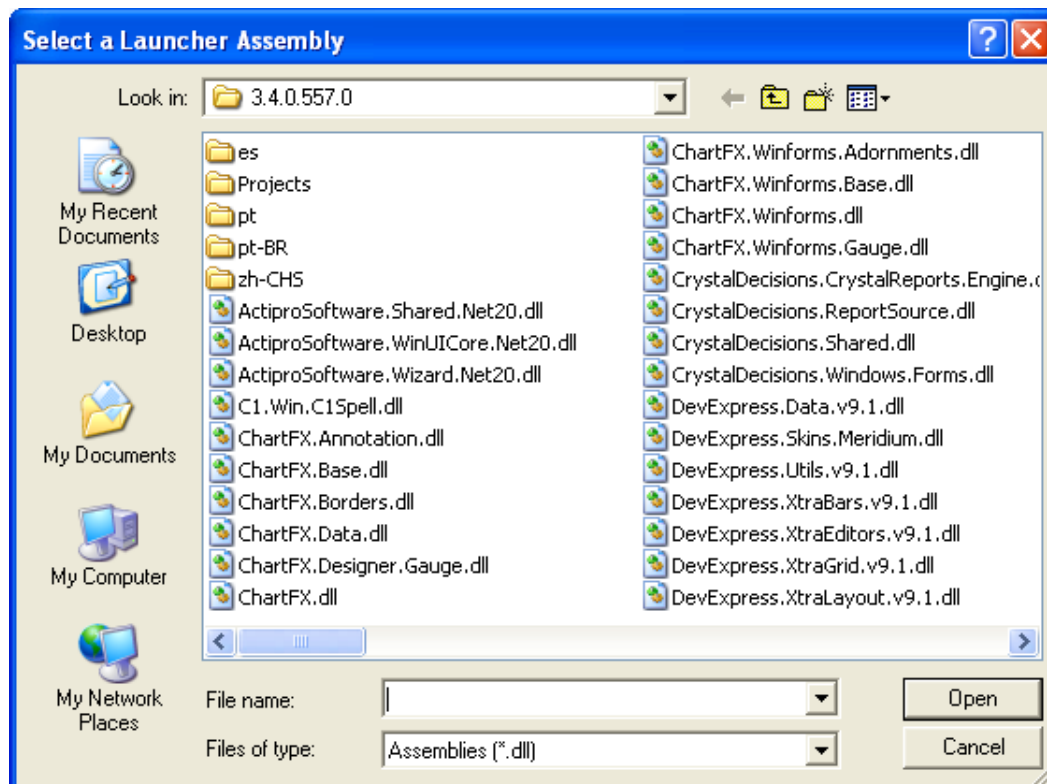
6. Navigate to and select the assembly that you want to associate with this URL. This assembly corresponds to the feature that will appear when a user clicks a link constructed from this URL. Note that the selected assembly must implement the **IMeridium APMUrlLaunchable** interface; otherwise the system will return an error when you select the assembly.

7. Click the **Open** button.

   The **Windows Assembly Name** and **Windows Controller** fields on the **URL Registration** dialog box are populated with the name of the selected assembly.

8. Click the **Save** button.
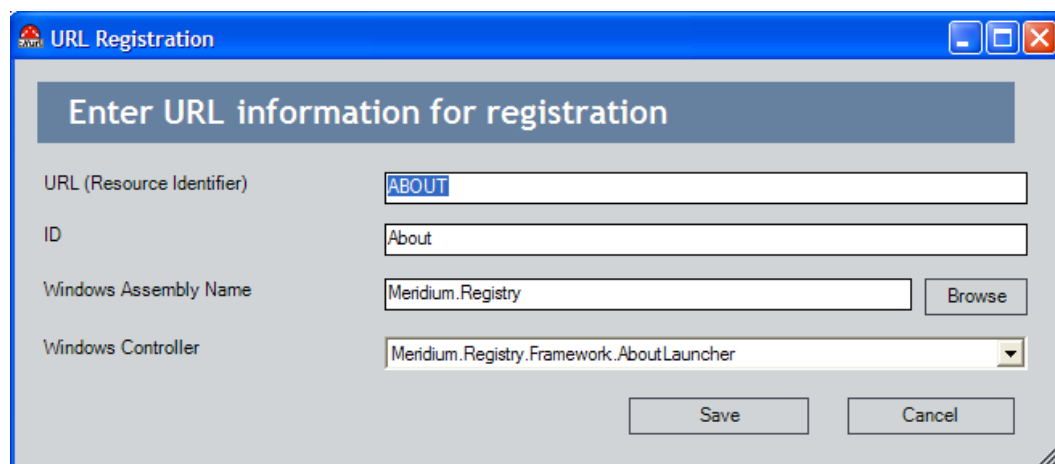
   The specified URL is registered and is added to the list on the **Manage Registered URLs** tab.

## Modifying Registered URLs

**To modify the properties of a URL that has already been registered:**

1. In the URL Manager, on the **Manage Registered URLs** tab, select the URL that you want to modify.

2. Click the **Edit Selected URL** button.

   The **URL Registration** dialog box appears, displaying the properties that are currently associated with the selected URL.



3. Modify the properties as desired.

4. Click the **Save** button.

   Your changes are saved, the **URL Registration** dialog box closes, and the list on the **Manage Registered URLs** tab is updated to reflect your changes.

## Configuring Web Settings
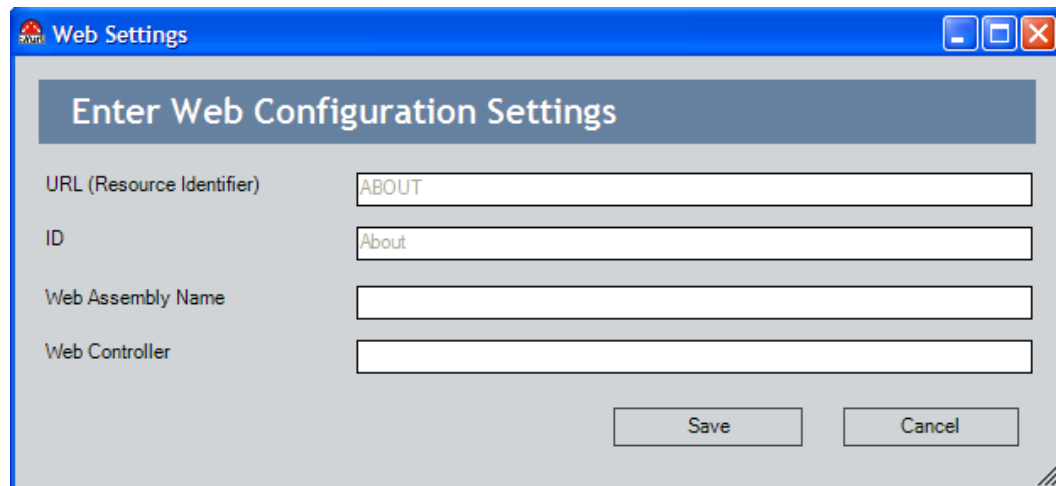
The web settings that are defined for a registered URL define the web assembly and controller that make the feature available in the Meridium APM Web Framework. If web settings are not defined for a baseline registered URL, it means that the associated feature is currently not supported by the Meridium APM Web Framework. If you modify the web settings for a URL that is included in the baseline Meridium APM product, the feature may not work properly in

the Meridium APM Web Framework. Therefore, we recommend that you not modify any web settings that are provided by default.

**To configure the web settings for a URL:**

1. In the URL Manager, on the **Manage Registered URLs** tab, select the URL that you want to modify.

2. Click the **Edit Web Settings** button.

   The **Web Settings** dialog box appears, displaying the properties that are currently associated with the selected URL.



   The **URL (Resource Identifier)** and **ID** fields are disabled and display values that are defined in the properties of the registered URL. You can modify these properties by modifying the registered URL itself.

3. Modify the **Web Assembly Name** and **Web Controller** values as desired. Note that you can remove both values to make the associated feature unavailable via the Meridium APM Web Framework.

4. Click the **Save** button.

   Your changes are saved, and the **Manage Registered URLs** tab is updated to reflect your changes.

## Deleting Registered URLs

If you no longer want to provide access to a feature through the currently registered URL, you can delete the URL. Note that deleting a registered URL deletes both the URL and the associated settings.

**To delete a registered URL:**

1. In the URL Manager, on the **Manage Registered URLs** tab, select the URL that you want to delete.

2. Click the **Delete Selected URLs** button.

   A confirmation message appears, asking if you really want to delete the selected URL.

3. Click the **Yes** button.

   The selected URL is deleted from the database.

# Meridium APM Framework

## Introduction to the Meridium APM Framework

The Meridium APM Framework application serves as the primary user interface for the Meridium APM System. It provides access to functionality in all licensed modules, along with the following basic features:

- Home Page

- Start Page

- Catalog

- Send To Feature

- Printing

- Spell Check

# Navigating the Meridium APM Framework Application

## The Basic Layout and Features of the Main Window

The **Meridium APM Framework** main window serves as the framework for all the features that are available in the Meridium APM Framework application. It is important to become familiar with the features that are available from the main window framework because they will be available to you at all times, no matter where you are in the application.

At the very top of the window, just below the title bar, the main menu bar appears, as outlined in red in the following image.
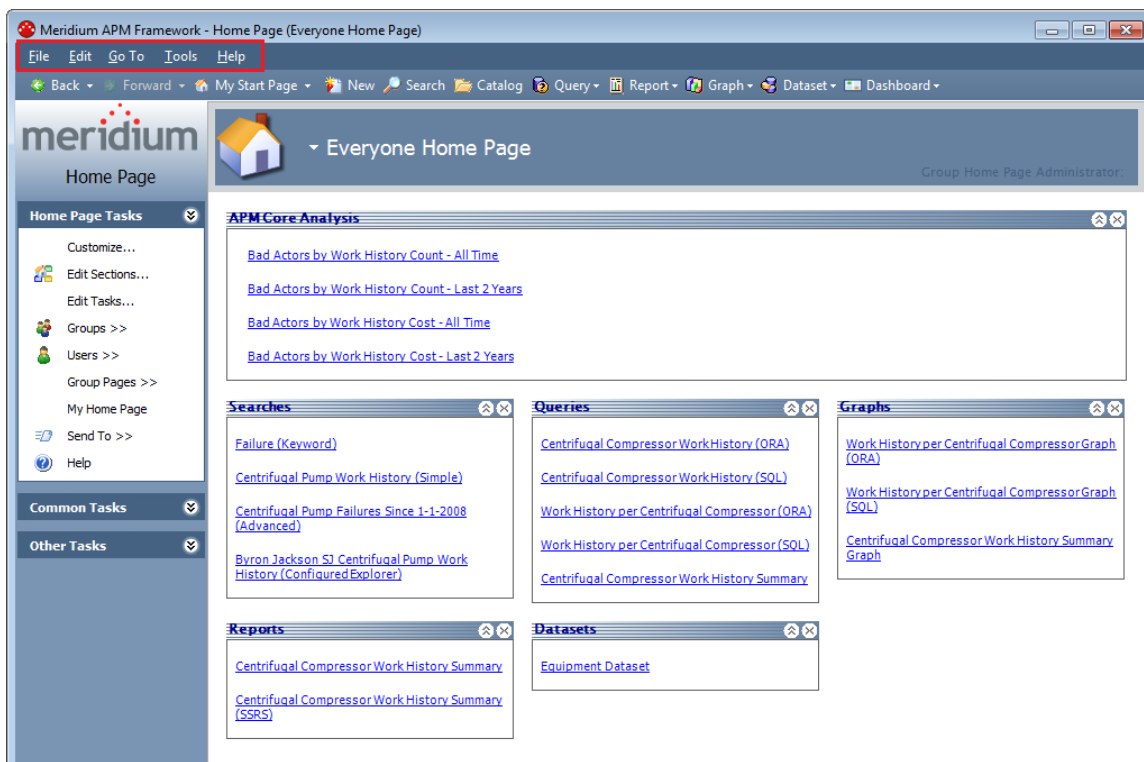


The menu bar contains drop-down menus that provide access to various features. The following menus are available: **File**, **Edit**, **Go To**, **Tools**, and **Help**.

Just below the menu bar, a toolbar appears. The toolbar contains buttons that provide access to operations you will need to perform throughout the application.

**Note:** The specific function of the options that are available on the main menus and toolbar may vary slightly, depending on where you are in the application.

The left side of the main window will almost always contain at least one task menu. While the location of the task menus will not change, the options that are available on the menus will vary, depending on which page you are viewing. To the right of the task menus is the workspace, which contains the main features of a given page.

The very bottom of the window contains a status bar with two fields:

- **User:** The name of the Meridium APM user who is currently logged in, displayed in the format **[last name], [first name]**.

- **Application Server:** The name of the Meridium APM Application Server to which the Meridium APM Framework application is currently connected.

- **Data Source:** The name of the data source to which you are currently connected. The field displays the **Data Source Name** that is defined for the data source via the Data Source Manager.

# Main Menu

**File Menu**
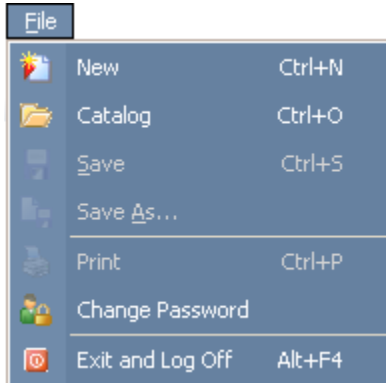


The **File** menu contains the following options:

- **New (Ctrl+N):** Displays the **Select Family** dialog box, where you can choose the family of the record that you want to create.

- **Catalog (Ctrl+O):** Opens the Meridium APM Catalog.

- **Save (Ctrl+S):** Saves the information that is currently displayed. If the item has already been saved at least once before, your changes will be saved using the current file name and location. If the item is new and has not yet been saved, the **Save [Item Type]** dialog box appears.

- **Save As**: Displays the **Save As** dialog box, which lets you save the current item with a new name or to a new location.

- **Print (Ctrl+P):** Displays the **Print** dialog box or the **Preview** window, where you can print the information that is currently displayed.

- **Change Password**: Displays the **Change your password** dialog box, which lets you choose a new Meridium APM password for the current user account.

- **Exit and Log Off (Alt+F4):** Closes the current page and logs you out of Meridium APM.

**Edit Menu**
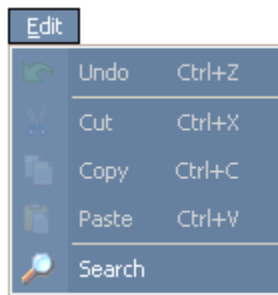


The **Edit** menu contains the following options:

- **Undo** (Ctrl+Z): Undoes the previous operation.

- **Cut** (Ctrl+X): Executes the standard Windows Cut function.

- **Copy** (Ctrl+C): Executes the standard Windows Copy function.

- **Paste** (Ctrl+V): Executes the standard Windows Paste function.

- **Search**: Opens the **Search** page, where you can begin a search of the database.

**Go To Menu**

The **Go To** menu serves as an access point for each Meridium APM Work Process and its modules, tools, and features. This menu will contain the names of the modules that you have licensed to use in your Meridium APM system. Each option on the menu will appear only if the associated module has been licensed and activated via the Meridium APM Configuration Manager application.
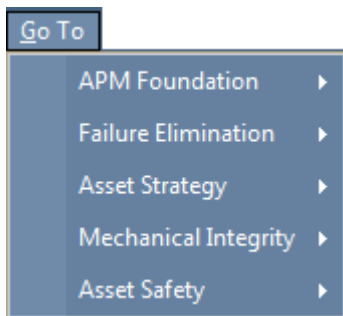


The **Go To** menu contains the following options:

- **APM Foundation**: Displays a submenu with the following options:

  - **Dashboard:** Displays the APM Foundation dashboard.

  - **Asset Criticality Analysis:** Displays the **Asset Criticality Analysis Start Page**, where you can access functions specific to Asset Criticality Analysis.

  - **Recommendation Management**: Displays the **Recommendation Management** page, where you can manage Recommendation records.

  - **Asset Health Manager**: Displays the **AHM Start Page**, where you can access functions specific to Asset Health Manager.

  - **Policy Manager:** Displays the **Dashboard - Policy Manager Start Page**, from which you can manage policies.

  - **AMS Analytics:** Displays the **AMS Analytics Start Page**, where you can access functions specific to AMS Analytics.

  - **Operator Rounds:** Displays the **Operator Rounds Start Page**, where you can access functions related to Operator Rounds.

- **Lubrication Management:** Displays the **Lubrication Management Start Page**, where you can access functions related to Lubrication Management.

- **Failure Elimination:** Displays a submenu with the following options:

  - **Dashboard:** Displays the Failure Elimination dashboard.

  - **Metrics and Scorecards:** Displays the **Metrics and Scorecards Start Page**, which displays a list of functions specific to Metrics and Scorecards.

  - **Production Loss Accounting:** Displays the **PLA Start Page**, which contains a list of functions specific to Production Loss Accounting (PLA).

  - **Root Cause Analysis:** Displays the **Root Cause Analysis Start Page**, which contains a list of functions specific to Root Cause Analysis (RCA).

  - **Reliability Analytics:** Displays the **Reliability Analytics Start Page**, which displays a list of functions specific to Reliability Analytics.

  - **Asset Answers:** Launches Asset Answers using the URL that is defined in the Configuration Manager. If single sign-on has been configured in Asset Answers, you will be logged in automatically. If, however, single sign-on has not been configured, you will see the Asset Answers login page, where you will need to enter your Asset Answers login credentials.

- **Asset Strategy:** Displays a submenu with the following options:

  - **Dashboard:** Displays the Asset Strategy dashboard.

  - **Reliability Centered Maintenance:** Displays the **RCM Start Page**, which displays a list of functions specific to Reliability Centered Maintenance (RCM).

  - **Failure Modes and Effects Analysis:** Displays the **FMEA Start Page**, which displays a list of functions specific to Failure Modes and Effects Analysis (FMEA).

- **Asset Strategy Management:** Displays the **ASM - Start Page**, where you can view and manage Asset Strategies, System Strategies, and Unit Strategies.

- **Asset Strategy Implementation:** Displays the **Asset Strategy Implementation Start Page**, which displays a list of functions specific to Asset Strategy Implementation.

- **Mechanical Integrity:** Displays a submenu with the following options:

  - **Dashboard:** Displays the Mechanical Integrity dashboard. This option is displayed only when the license for at least one Mechanical Integrity module is active.

  - **Risk Based Inspection:** Displays the **RBI Start Page**, which displays a list of functions specific to Risk Based Inspection (RBI).

  - **Inspection Management:** Displays the **Inspection Management Start Page**, where you can access functions related to Inspection Management.

  - **Thickness Monitoring:** Displays the **Thickness Monitoring Functions** page, which serves as the start page for Thickness Monitoring.

- **Asset Safety:** Displays a submenu with the following options:

  - **Dashboard:** Displays the Asset Safety dashboard.

  - **Hazards Analysis:** Displays the **Hazards Analysis Start Page**, where you can access functions specific to Hazards Analysis.

  - **SIS Management:** Displays the **SIS Management Start Page**, where you can access functions specific to SIS Management.

  - **Calibration Management:** Displays the **Calibration Management Functions** page, which serves as the start page for Calibration Management.

**Tools Menu**
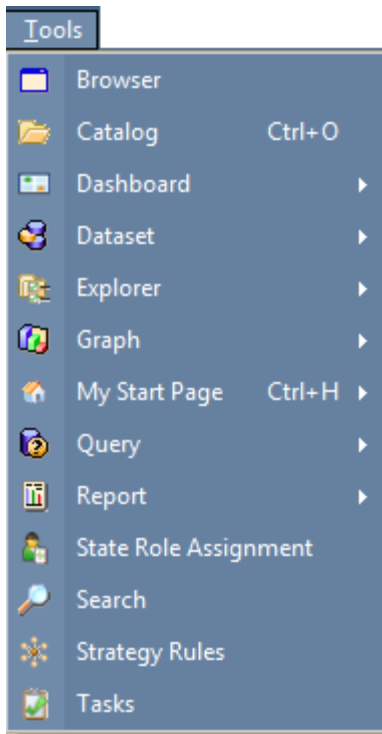


The **Tools** menu contains the following options:

- **Browser:** Opens the Meridium APM Browser.

- **Catalog (CRL+O):** Opens the Meridium APM Catalog.

- **Dashboard:** Displays a submenu with the following options:

    - **Build New:** Displays the **Save Dashboard** dialog box, where you can specify a location to which to save a new dashboard.

    - **Open Existing:** Displays the **Open an existing Dashboard** dialog box, where you can open an existing dashboard.

- **Dataset:** Displays a submenu with the following options:

    - **Build New:** Displays the **Dataset Builder**, which you can use to create a new dataset.

- **Open Existing:** Displays the **Open an existing Dataset** dialog box, where you can open a saved dataset.

- **Explorer:** Displays a submenu with the following options:

  - **Build New:** Displays the **Definable Explorer Wizard**, which you can use to create a configured explorer.

  - **Open Existing:** Displays the **Open an existing Explorer** dialog box, where you can open an existing configured explorer.

- **Graph:** Displays a submenu with the following options:

  - **Build New:** Displays the **Choose a Query or Dataset for Graph** dialog box, where you can choose a query or dataset from which to create a new graph.

  - **Open Existing:** Displays the **Open an existing Graph** dialog box, where you can open a saved graph.

- **My Start Page (Ctrl+H):** Displays your start page. You can also click the right arrow to display a submenu with the following options:

  - **Set this page as my start page:** Sets the current page to your start page.

  - **Go to Home Page:** Displays the Home Page that you were last viewing.

  - **Reset to Home Page:** Resets your start page to the Home Page.

- **Query:** Displays a submenu with the following options:

  - **Build New:** Displays the **New Query** dialog box, where you can choose to create a new query using either the Query Builder or the query design.

  - **Open Existing:** Displays the **Open an existing Query** dialog box, where you can open a saved query.

- **Report:** Displays a submenu with the following options:

- **Build New:** Displays the **Create New Report** dialog box, where you can choose to create a report based on a query, dataset, or external template.

- **Open Existing:** Displays the **Open an existing Report** dialog box, where you can open a saved report.

- **State Role Assignment:** Displays the **Assign Users to a Role** window, where you can assign and remove Security Users to and from State Configuration roles.

- **Search:** Opens the **Search** page.

- **Strategy Rules:** Displays the **Strategy Start Page**, which displays a list of functions specific to Strategy Rules.

- **Tasks:** Displays the **Task Management Start Page**, which displays a list of functions specific to Task Management.

## Help Menu
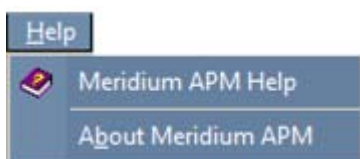


The **Help** menu contains the following options:

- **Meridium APM Help:** Displays the Meridium APM Help system.

- **About Meridium APM:** Displays the **About Meridium APM** dialog box, which shows version information about the Meridium APM product that is currently installed, including details about the build number and any service packs or hot fixes that have been installed. The **About Meridium APM** dialog box also displays information about the database to which you are currently connected.

# About the Site Map

When you navigate to most pages within the Meridium APM Framework, the Site Map appears below the toolbar at the top of the page. The Site Map displays a

navigational trail that identifies the current page and the context of how you arrived at that page. Each item on the Site Map is a hyperlink, which you can click to access the page that it represents.

The following image shows the Site Map as it appears on the **Reliability Analytics Start Page**. A red border has been added to the image.
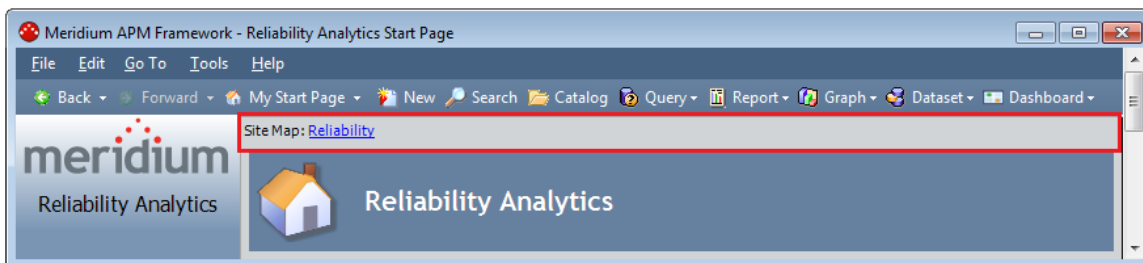


In this image, you can see that the Site Map contains only one hyperlink, **Reliability**, which identifies the current page. In this case, the **Reliability Analytics Start Page** is the first page that you see when you access the Reliability Analytics module.

The following example walks through what the Site Map would look like if you were to navigate from the **Reliability Analytics Start Page** to the **Spares Analysis** page.

As shown in the previous image, the Site Map on the **Reliability Analytics Start Page** looks like this:
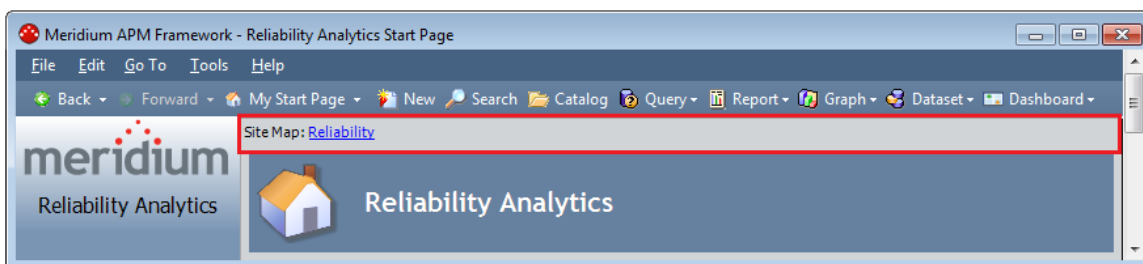


If you were to click the **Spares Analysis** link on this page, the **Select a Spares Analysis from the List** page would appear. The following image shows what the Site Map looks like on the **Select a Spares Analysis from the List** page.
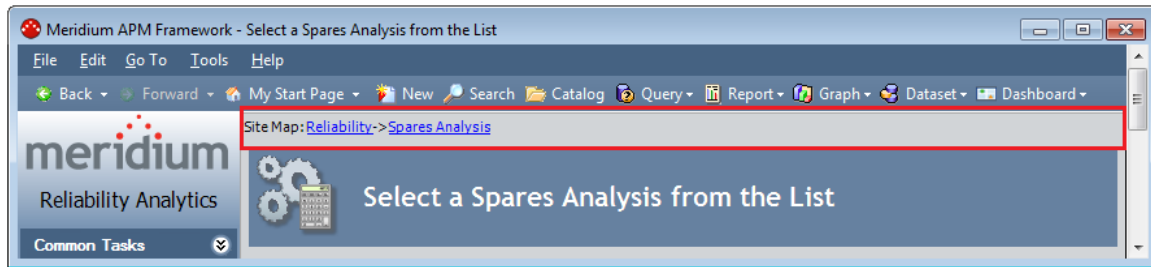
Notice that the **Spares Analysis** hyperlink now appears on the Site Map to identify the current page, and the **Reliability** hyperlink is still available to indicate that you accessed the current page from the **Reliability Analytics Start Page**. If desired, you could click the **Reliability** hyperlink to access the **Reliability Analytics Start Page**.

Continuing with the example, if you were to click a hyperlinked Analysis ID in the grid, the **Spares Analysis** page would appear. The following image shows what the Site Map looks like on the **Spares Analysis** page.
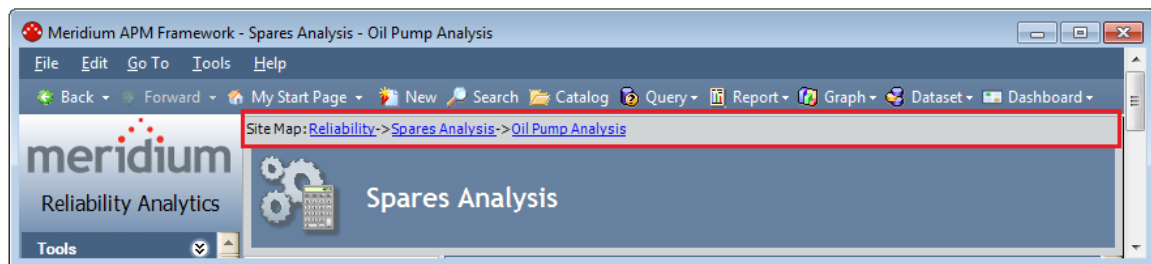


Notice that the **Oil Pump Analysis** hyperlink now appears on the Site Map to identify the analysis that is displayed on the current page, and the **Reliability** and **Spares Analysis** hyperlinks are still available to indicate the path that you took to access the current page. If desired, you could click:

- The **Reliability** hyperlink to access the **Reliability Analytics Start Page**.

  -or-

- The **Spares Analysis** hyperlink to access the **Spares Analysis** page.

In each module, the Site Map contains slightly different data, but the general concept is the same. The Site Map identifies the page that you are currently viewing, and it provides context in the form of hyperlinks to indicate how you got to the current page. You can click any hyperlink on the Site Map to navigate quickly to the corresponding page.

Throughout this documentation, we assume that you are familiar with how the Site Map works. For any modules whose Site Map works differently, the documentation for that module explains the differences.

# About Task Menus

Task menus appear on the left side of the screen on almost every page in Meridium APM. While the location of the task menus will not change, the options that are available on the menus will vary, depending on which page you are viewing. In addition, the number of available tasks menus will vary, depending on how many options are available on the current page. For example, the Home Page contains three task menus with options that are specific to the Home Page, as highlighted in red in the following image: **Home Page Tasks**, **Common Tasks**, and **Other Tasks**.
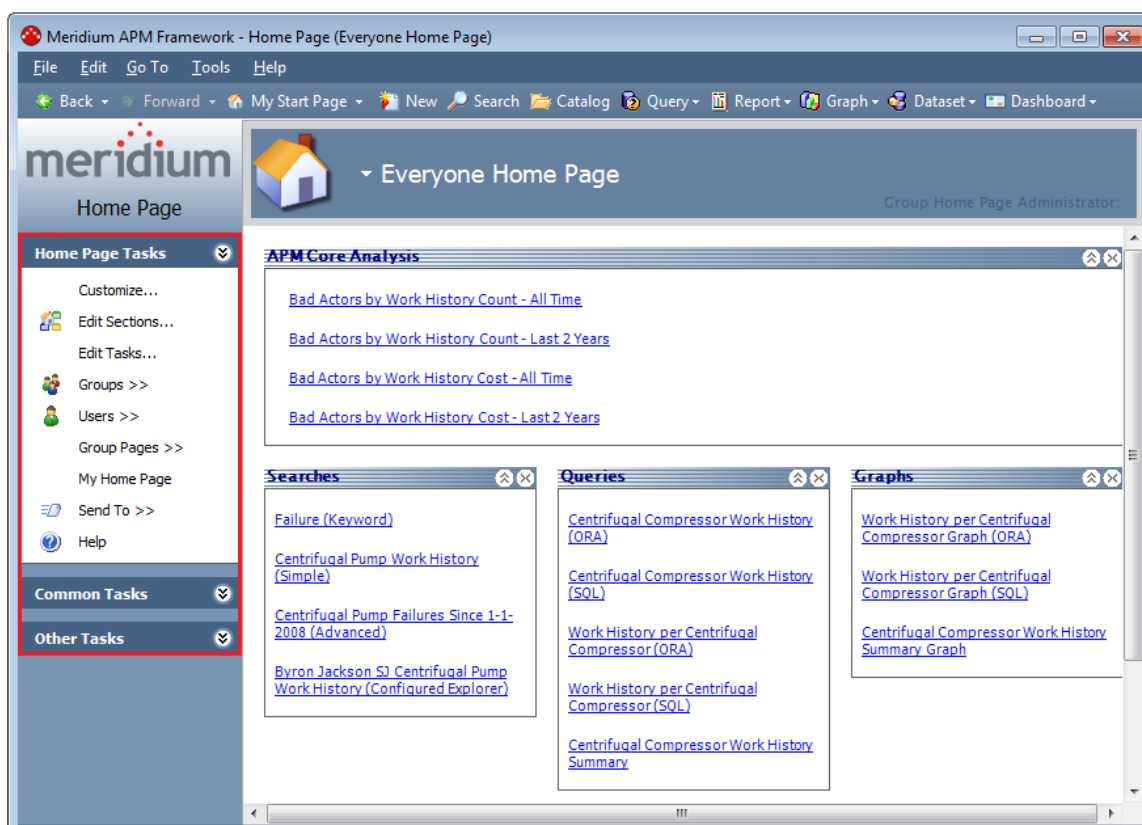


The following image, however, shows the task menus on the **Scorecards** page. The names of the two menus and the options that appear on them are appropriate for the **Scorecards** page.
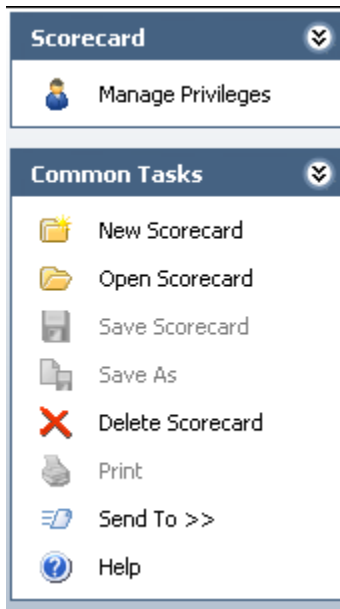
**Hint**: Throughout the Meridium APM Framework documentation, we use task menu descriptions as the starting point for describing the features that are available on most screens in Meridium APM. In the Help system, most task menu descriptions are linked to topics that provide additional detail about each screen. Reviewing task menu topics in the Help system is a good way to become familiar with and navigate the features of the various screens in Meridium APM.

## About the Workspace

On each page in the Meridium APM Framework, to the right of the task menus is the workspace. The content of the workspace will vary, depending on which page you are viewing. The workspace can contain data, grids, query results, links, sections, graphs, charts, and other features that allow you to view, enter, and analyze data. The content of the workspace will be appropriate for the features and functions of the screen. For example, in the following image, the **Home Page** workspace is highlighted in red.
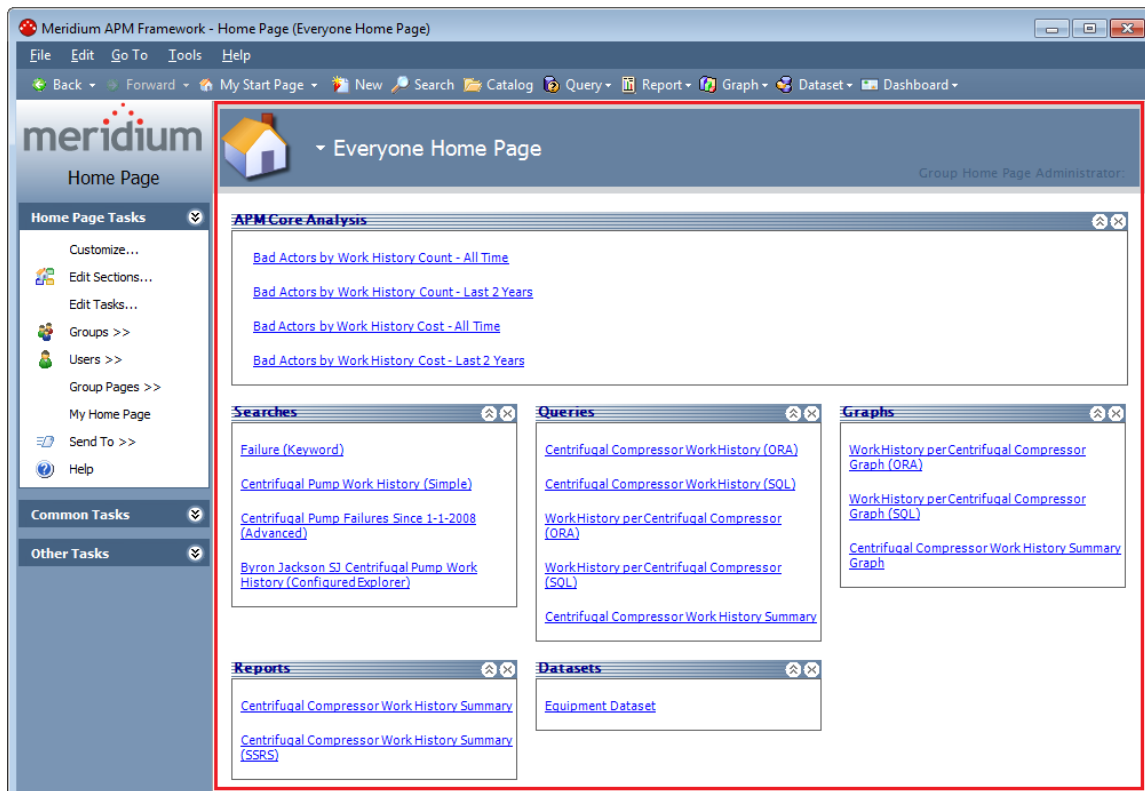
As with the content, the label of the workspace will change, depending on which page you are viewing.

## Options Available on the Meridium APM Framework Toolbar

The Meridium APM Framework toolbar offers quick access to common features and functions.



The toolbar offers the following options:

- **Back:** Displays a list of previously visited pages. The **Back** feature saves up to 10 previously visited pages.

- **Forward:** Displays a list of previously visited pages. The **Forward** feature saves up to 10 previously visited pages.

- **Refresh**: Refreshes the current page with updated data from the Meridium APM Application Server. The **Refresh** option is available only on certain pages.

- **My Start Page:** Displays your start page. You can also click the down arrow to display a submenu with the following options:

    - **Set This Page as My Start Page:** Sets the current page to your start page.

    - **Go to Home Page:** Displays the Home Page that you were last viewing.

    - **Reset to Home Page:** Resets your start page to the Home Page.

- **New:** Displays the **Select Family** dialog box, where you can choose the family for the record that you want to create.

- **Search:** Opens the **Search** page, where you can search for records within the database.

- **Catalog:** Opens the Meridium APM Catalog.

- **Query:** Displays a submenu with the following options:

    - **Build New:** Displays the **New Query** dialog box, where you can choose to create a new query using either the Query Builder or the Query Designer.

    - **Open Existing:** Displays the **Open an existing Query** dialog box, where you can open a saved query.

- **Report:** Displays a submenu with the following options:

    - **Build New:** Displays the **Create New Report** dialog box, where you can choose to create a report based on a query, dataset, or external template. This option is enabled only if you have the Microsoft SQL Server Business Intelligence Development Studio installed on the Meridium APM Framework workstation.

    - **Open Existing:** Displays the **Open an existing Report** dialog box, where you can open a saved report.

- **Graph:** Displays a submenu with the following options:

- **Build New:** Displays the **Choose a Query or Dataset for Graph** dialog box, where you can choose a query or dataset from which to create a new graph.

- **Open Existing:** Displays the **Open an existing Graph** dialog box, where you can open a saved graph.

- **Dataset:** Displays a submenu with the following options:

  - **Build New:** Displays the **Dataset Builder**, which you can use to create a new dataset.

  - **Open Existing:** Displays the **Open an existing Dataset** dialog box, where you can open a saved dataset.

- **Dashboard:** Displays a submenu with the following options:

  - **Build New:** Displays the **Save Dashboard** dialog box, where you can specify a location to which to save a new dashboard.

  - **Open Existing:** Displays the **Open an existing Dashboard** dialog box, where you can open an existing dashboard.

# Pages that Include the Refresh Option

The **Refresh** option on the Meridium APM Framework toolbar is available only on the following pages in the Meridium APM Framework:

- **Dashboard** page

- **Asset Health Manager** page

- **Policy** page

The **Refresh** option can be used to populate these pages with updated data from the Meridium APM Application Server. For example, suppose that you are viewing the **Asset Health Manager** page for a particular piece of equipment. If you suspect that data on the Meridium APM Application Server has been updated for this piece of equipment since you accessed the **Asset Health Manager** page, you can use the **Refresh** option to ensure that you are seeing the most up-to-date data for the piece of equipment.

In cases where navigating away from one of these pages (via the **Back** button on the toolbar) results in a confirmation message being displayed that asks if you are sure you want to navigate away from the current page, the same message is displayed when you use the **Refresh** option on these pages.

For example, on the **Policy** page, when you have unsaved changes to a policy and you click the **Back** button on the toolbar, the following confirmation message appears.
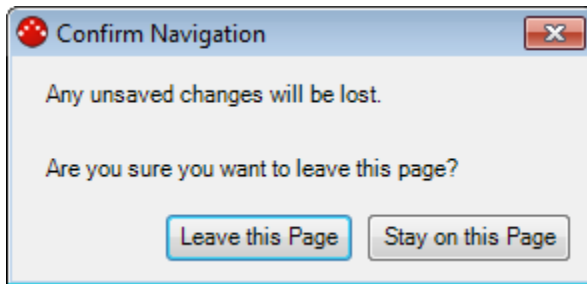


Similarly, in this scenario, when you click the **Refresh** button on the toolbar, the same confirmation message appears.

## Moving Panes to Different Locations on the Page

*Panes* appear in various locations throughout the Meridium APM Framework application. The contents of a pane will vary depending on where it appears. For example, in the Record Manager, the **Record Explorer** pane contains the contents of the record hierarchy. In PROACT® for Meridium APM, the **Options** pane on the **Logic Tree** page contains various tabs that contain options that let you perform tasks related to the Logic Tree.

On a given page, a pane can be positioned to the left, right, or below the workspace by default. If desired, you can move a pane to a different location on the page.

**Note:** The option to move a pane to a different location on the page may not be available on some pages in the Meridium APM Framework application. Additionally, if alternate methods are available for moving a pane on a given page, the instructions for doing so will be available in the section of the help where that page is explained.

**To move a pane to a different location on the screen:**

1.  Click the title bar of the pane, and drag it until you see arrows that indicate the areas to which you can move it. You can move it to the left, to the right, or below the workspace.

2.  Point to the arrow that corresponds to the desired location.

    A shaded area appears on the screen where the pane will be positioned after you release the mouse button.

3.  Release the mouse button.

    The pane is moved to the selected location.

# Exiting the Meridium APM Framework

**To exit the Meridium APM Framework and log off:**

*   On the **File** menu, click **Exit and Logoff**.

    -or-

*   On your keyboard, press Alt+F4.

    -or-

*   Click the Meridium APM icon in the upper-left corner of the title bar , and then click **Close**.

    -or-

*   Double-click the Meridium APM icon in the upper-left corner of the title bar. 

    -or-

*   Click the **X** button, which appears in the upper-right corner of the Meridium APM title bar.

# Changing Your Password

After you have logged in to the Meridium APM Framework, you can change your password if desired. To help maintain the security of your system, you should change your password every several months. Note that while the change password feature is available in the Meridium APM Framework application, your new password will be saved with your Security User account and will apply to *every* Meridium APM application that uses a secured login.

**Note:** Since you must log in to change your password, you must know your old password in order to choose a new one. If you have forgotten your password, contact your System Administrator.

**To change your password:**

1. Log in to the Meridium APM Framework application.

2. On the **File** menu, click **Change Password**.

   The **Change your password** dialog box appears.



3. In the **Current password** text box, type your current password.

4. In the **New password** text box, type your new password.

5. In the **Verify new password** text box, retype your new password.

6. If you prefer to log in without a password, leave the three text boxes empty, and select the **Use blank password** check box. Doing so will

allow you to log in to Meridium APM with just your user ID. Note, however, that this may compromise your system security as anyone who knows your user ID will be able to log in to your system.

7. Click the **Save** button.

Your new password is saved to the database. If scheduled items are associated with this Security User account, after the new password has been saved, a message will appear, indicating that all scheduled items associated with this security account have been updated with the new password.

# Overriding the Auto-Login Feature

**Important:** While the auto-login feature is also available with other Meridium APM applications (e.g., Configuration Manager), the modification described in this section should be made only to the shortcuts that launch the Meridium APM Framework application.

Meridium APM offers a feature called auto-login, where if a user's Meridium APM user ID is the same as that user's Windows username, when the user launches Meridium APM, he or she will not have to supply a user ID or password and will instead be logged in automatically to Meridium APM.

The Meridium APM Framework, however, offers an option that allows you to override the auto-login feature and force users to supply a user ID and password, even when their Meridium APM user ID and Windows user name are the same. You can enable this option by making a change to the Meridium APM Framework application shortcut on each Meridium APM Framework workstation.

**Note:** After you modify the shortcut properties, you will need to instruct your users to use the shortcuts for launching Meridium APM. The change that you make will apply only to that specific shortcut and will not be applied when the application is launched through another means (e.g., via the Windows **Start** menu).

These instructions assume that you have already created a shortcut to the Meridium APM Framework application.

**To modify the Meridium APM shortcut properties to override the auto-login feature:**

1. Right-click the Meridium APM Framework shortcut, and then click **Properties**.

   The **Meridium APM Properties** dialog box appears.
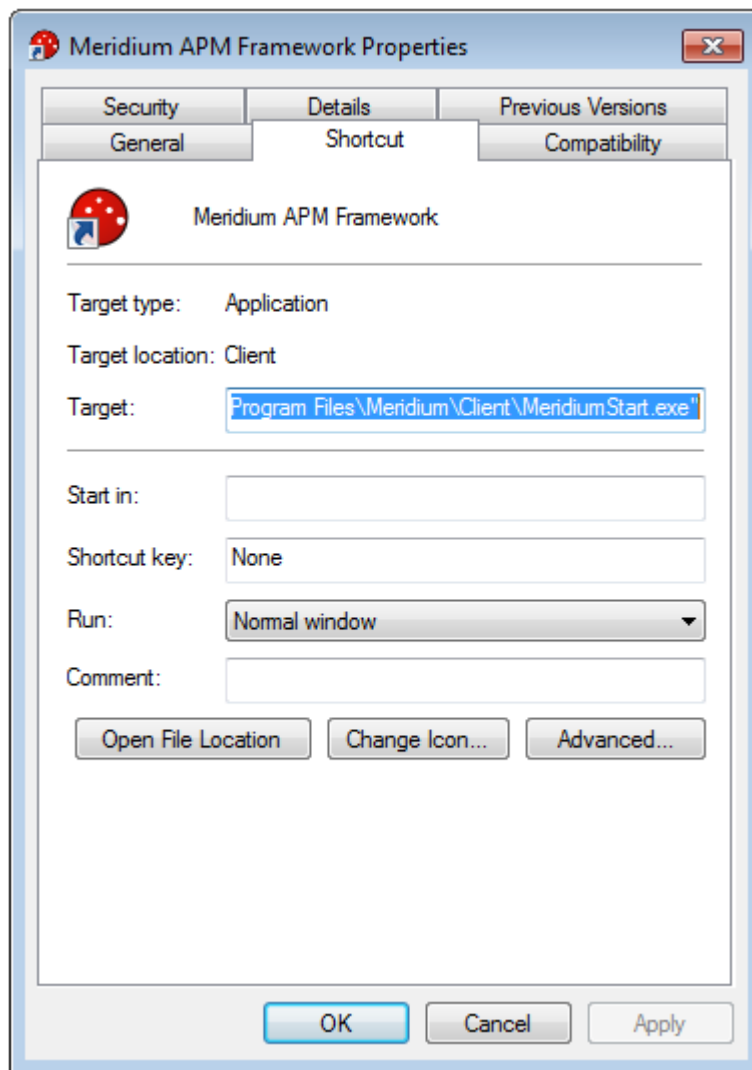


2. In the **Target** text box, place your cursor at the end of the existing text.

3. Insert a space, and then type **-forcelogin**.

   The text in the **Target** field should match the following:

"C:\Program Files\Meridium\MeridiumStart.exe" -forcelogin

4. Click **OK**.

   Your changes to the shortcut are saved. Now, whenever a user launches the Meridium APM Framework application using this shortcut, the auto-login feature will be overridden, and the user will be forced to supply a Meridium APM user ID and password.

# Overriding the Default Login Location

By default, when you launch the Meridium APM Framework application and log in, the system displays the last Meridium APM Home Page that you viewed the last time you logged in to the Meridium APM Framework. If desired, by modifying the Meridium APM shortcut, you can override the default login location and display by default any page in Meridium APM that is URL addressable.

**Note:** Changes made to the shortcut properties will be applied only when Meridium APM is launched from that shortcut.

**To modify the Meridium APM shortcut properties to override the default login location:**

1. Right-click the Meridium APM Framework shortcut, and then click **Properties**.

   The **Meridium APM Properties** dialog box appears.
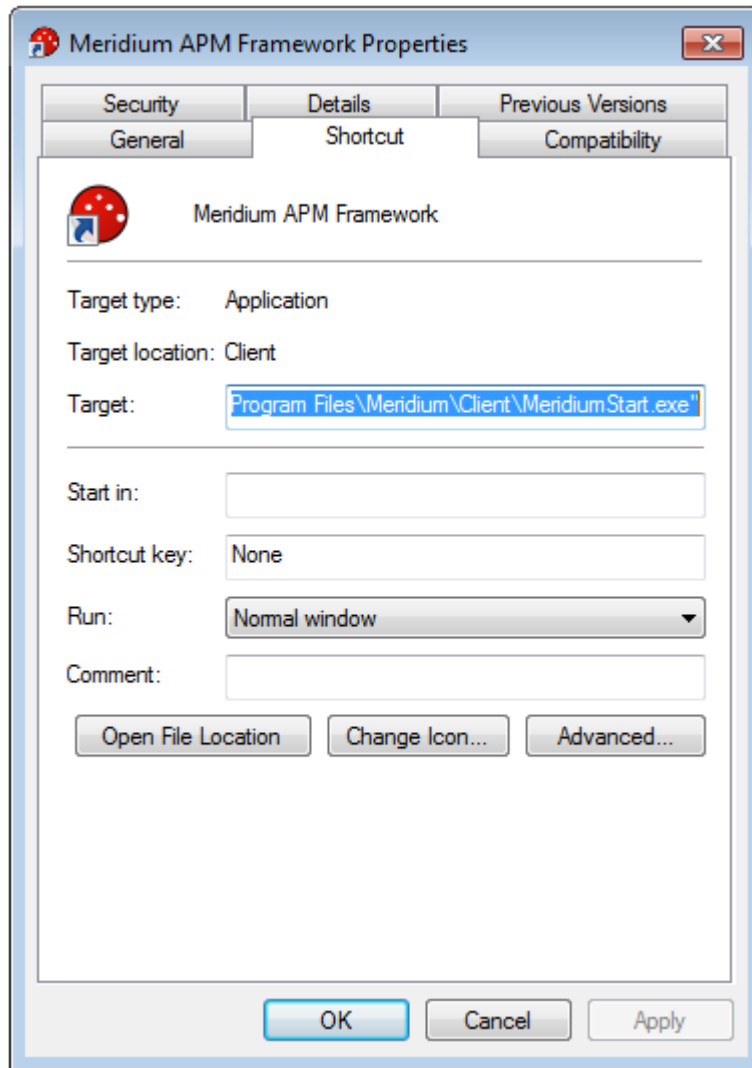
2. In the **Target** text box, place your cursor at the end of the existing text.

3. Type a space, and then type the URL that corresponds to the location that you want to use as the default login location. For example, if you want Meridium APM to go to the **Inspection Start Page** when you log in, type:

   **meridium://Inspection**

4. Click **OK**.

   Your changes to the shortcut are saved. Now, whenever users launch the Meridium APM Framework application using this shortcut, they will be taken to the location specified by the URL.

# Home Page

## Home Page Basics

### Overview of Home Pages

When you log in to the Meridium APM Framework application for the *first* time, your Personal Home Page is the first page you see.

**Note:** If are returning to the Meridium APM Framework application after logging out at least once, the page that you will see upon logging in depends upon whether or not you have configured a start page.

If desired, you can view the Group Home Page for any Security Group of which you are a member. If you have used the Meridium PM Framework application before, when you log in to the Meridium APM Framework application, assuming that you have not configured a start page, you will see the Home Page that you last viewed before you logged out.

A Home Page is meant to provide you with quick access in the form of hyperlinks to favorite or frequently used features and documents. You can customize the appearance and organization of these links to suit your needs.
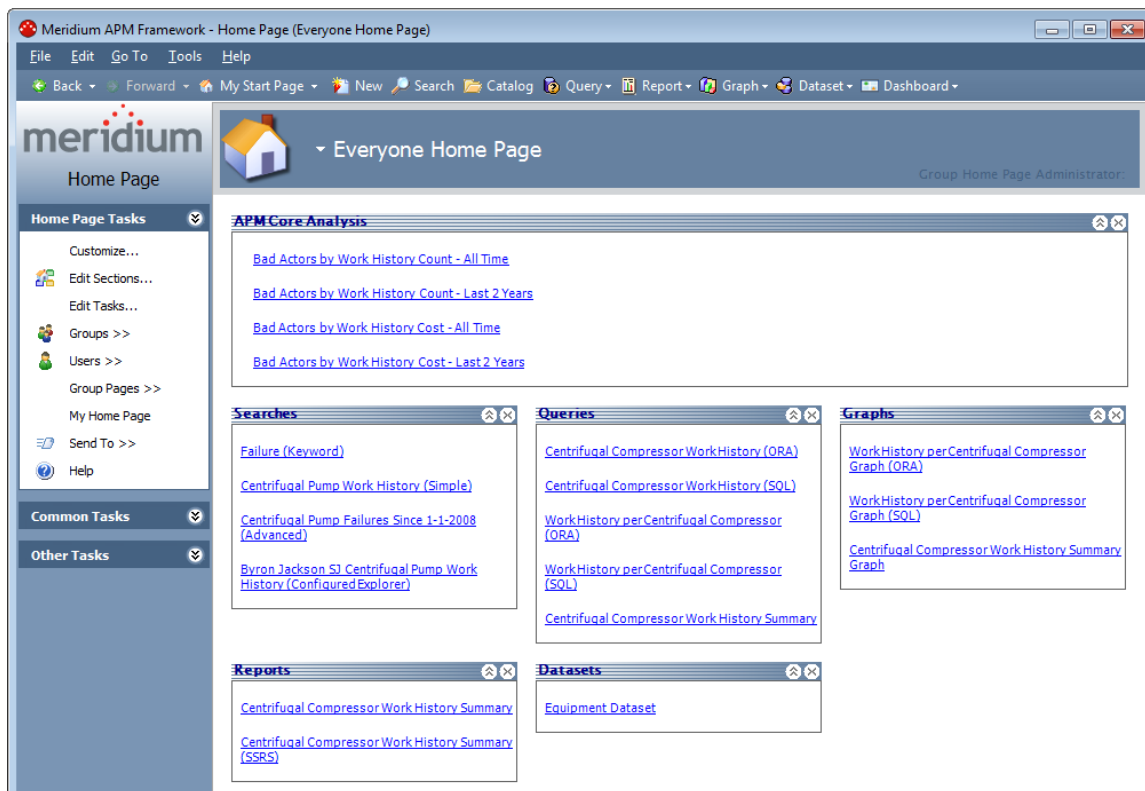
By default, your Personal Home Page is empty, but you can customize the appearance and content of your Home Page as needed. Group Home Pages are configured and maintained by Super Users, members of the MI Power User Role Security Group, or Group Home Page Administrators, but they can be viewed by any user who belongs to the Security Group.

## Types of Home Pages

### Personal Home Pages

A Personal Home Page belongs to the Security User who is currently logged in to the Meridium APM Framework application. Your Personal Home Page is associated with your user name and password. When you log in to the Meridium APM Framework application for the very first time, your Personal Home Page may be empty, but you can customize it to include links to features and documents that you use frequently.

Note that if you are a Super User or a member of the MI Power User Role Security Group, you will be able to access User Home Pages. If not, you will be able to access only your own Personal Home Page and the Group Home Pages of the Security Groups of which you are a member.

## User Home Pages

A User Home Page is a Home Page that is associated with a Security User other than the user who is currently logged in to the Meridium APM Framework application. If you are a Super User or a member of the MI Power User Role Security Group, you will be able to access User Home Pages. If you are not a Super User or a member of the MI Power User Role Security Group, you will be able to access only your Personal Home Page and the Group Home Pages of the Security Groups of which you are a member.

## Group Home Pages

Each Security User can belong to one or more Security Groups (as defined via the Configuration Manager), which are intended to help organize users according to their roles and responsibilities in your company. Each Security Group has its own Home Page, which can be viewed by the members of that group. Group Home Pages help facilitate the sharing of information (e.g., graphs, queries, and reports) with your colleagues.

If a Security Group contains sub-groups, each sub-group will have its own Home Page. Throughout this documentation, we refer to these as *Sub-group Home Pages*.

You can display on a Personal Home Page, User Home Page, or Sub-Group Home Page the Home Page information for any Security Group of which you are a member. This "shared" information will be updated automatically based on changes made to that Group Home Page.

**Note:** Only Super Users, members of the MI Power User Role Security Group, and Group Home Page Administrators can modify the content of Group Home Pages. Other users are allowed only to view the information that has been configured by another user.

## Home Page Sections

## Overview of Sections

Home Page *sections* serve as organizational tools, which let you group links on a Home Page. Each section can have its own name and color scheme and can contain a list of hyperlinks to internal and external locations. By customizing sections on your Home Page, you can organize information in a way that is meaningful to you.

For example, you might create a section that contains links to frequently used reports, as shown in the following image.



Or, you might create a section with links to external websites, such as manufacturers' websites.

A Home Page can contain both local and shared sections.

### Types of Sections

A Home Page contains the following types of sections:

- **Local:** A section that exists on a single Home Page whose contents are not shared to other Home Pages. You can add the same local section to multiple Home Pages, but updating one of those sections (e.g., adding hyperlinks) will not result in automatic updates to the other similar sections on other Home Pages.

- **Shared:** A section that exists on a Group Home Page and is available to be added to the Home Page of:

    - Users who are a member of that Security Group.

    - Sub-groups of that Security Group.

  In some cases, shared sections appear automatically on a user's or sub-groups Home Page. In other cases, the shared section will need to be added manually before it will actually appear on the Home Page of a user or sub-group.

  You cannot modify a shared section from a User or Sub-group Home Page. To modify a shared section, you must access it from the Group Home Page.

## Accessing Home Pages

### Accessing a Group Home Page From Your Personal Home Page

You can use these instructions to access the Group Home Page associated with any Security Group of which you are a member.

**To access a Group Home Page from your Personal Home Page:**

1.  In the Meridium APM Framework, on your Personal Home Page, on the **Home Page Tasks** menu, click the **Group Pages** link.

    A submenu appears, displaying a list of the Group Home Pages associated with the active Security Groups of which you are a member and for which a Home Page has been configured.

2.  Click the name of the Group Home Page you want to view.

    The selected Group Home Page appears.

### Accessing Your Personal Home Page From a Group Home Page

**To access your Personal Home Page from a Group Home Page:**

*   In the Meridium APM Framework, on the Group Home Page, on the **Home Page Tasks** menu, click the **My Home Page** link.

    Your Personal Home Page appears.

### Accessing a User Home Page

If you are a Super User or a member of the MI Power User Role Security Group, you can access the Home Page associated with any Security User.

**To access a User Home Page:**

1.  In the Meridium APM Framework, on the Home Page, on the **Home Page Tasks** menu, click the **Users** link.

    A submenu appears, displaying a list of all active Security Users in the database.

2. Click the link associated with the Security User whose Home Page you want to view.

   The User Home Page for the selected Security User appears.

**Returning to a Home Page From Any Location in the Meridium APM Framework**

The following instructions provide details on accessing the Home Page from any location in the Meridium APM Framework application. This procedure will always display the Home Page that you last viewed.

**To return to the Home Page from any location in the Meridium APM Framework application:**

- In the Meridium APM Framework, on the Meridium APM Framework toolbar, click the down arrow on the **My Start Page** button, and then click **Go to Home Page**.

  -or-

- On the Meridium APM Framework main menu, click **Tools**, then click **My Start Page**, and then click **Go to Home Page**.

# Configuring Home Pages

**Managing Group Section Sharing**

**Sharing Group Home Page Sections Automatically**

What is Automatic Sharing?

A *shared* section is a Home Page section that is defined on a Group Home Page and inherited by a User Home Page. By default, User Home Pages will automatically inherit ALL sections defined on ALL the Group Home Pages associated with the Security Groups to which they belong. Automatic sharing occurs when a User Home Page is *first created*. Sections added to Group Home Pages after a User Home Page exists must be added manually to User Home Pages.

For example, suppose John Smith is a member of the Everyone Security Group. If the section *Metrics and Scorecards* exists on the Everyone Home Page

before John Smith's Home Page is created (i.e., accessed for the first time by John Smith or any other user who has access to his Home Page), the **Metrics and Scorecards** section will be *shared automatically* so that it appears on John Smith's Home Page. If the **Reliability Analytics Links** section is later added to the Everyone Home Page, it will be available in the list of sections available to John Smith for sharing but will not be added to John Smith's Home Page automatically.

Likewise, if you add a section to a Group Home Page, that section will be shared automatically with any Sub-group Home Page that is created after the section exists.

If desired, you can disable the default automatic sharing feature via an option in the Configuration Manager.

Disabling Automatic Sharing

By default, sections that exist on Group Home Pages will be shared automatically with User Home Pages and Sub-Group Home pages when they are created. If desired, you can disable this behavior via an option in the Configuration Manager. When this feature is disabled, Group Home Page sections will be *available* for sharing on User and Sub-groups Home Pages, but they will not be shared automatically.

**To disable automatic Group Home Page section sharing:**

1. In the Configuration Manager, on the Configuration Manager main menu, click **Tools**, point to **Global Preferences**, and then click **Group Home Page Sharing**.

   The **Share Home Page Sections** dialog box appears.
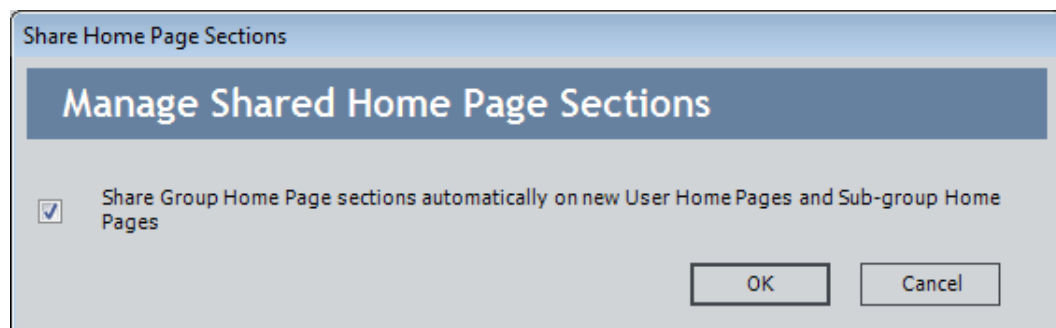


2. Clear the **Share Group Home Page sections automatically with new User Home Pages and Sub-group Home Pages** check box.

3. Click **OK**.

The setting is saved.

**Sharing Group Home Page Sections Manually**

If you access a User, Personal, or Sub-group Home Page, then add a section to a Group Home Page, and then access the User, Personal, or Sub-group Home Page again, the shared section will not appear automatically. It will, however, be available to add to the User, Personal, or Sub-group Home Page via the **Add Shared Section** dialog box.
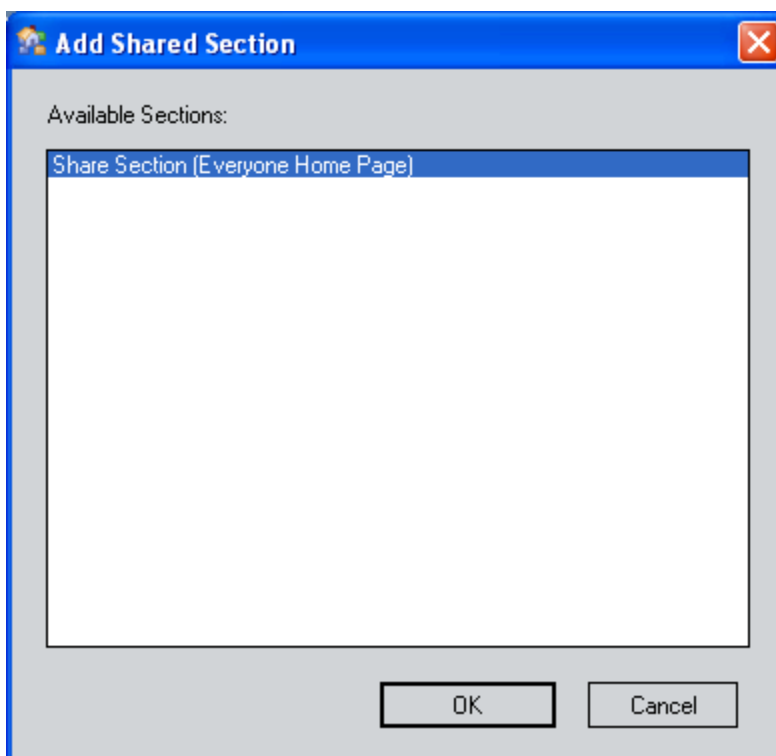


**Group Home Page Administrators**

**About Group Home Page Administrators**

A Group Home Page Administrator is a Security User who is responsible for maintaining and managing the content of a specific Group Home Page. You can specify a Group Home Page Administrator for any Group Home Page if you are a Super User or a member of the MI Power User Role Security Group. The Group Home Page Administrator can customize the Home Page for the Security Group as desired. Note that to customize the content of a Group Home Page for which

you are not the Group Home Page Administrator, you must be either a Super User or a member of the MI Power User Role Security Group.

When a Group Home Page has been assigned an Administrator, the Administrator's name appears in the top right corner of the page, preceded by the text **Group Home Page Administrator**. If a Group Home Page does not yet have an assigned Administrator, nothing will appear next to the text **Group Home Page Administrator**.

**Specifying a Group Home Page Administrator**

**To specify a Group Home Page Administrator:**

1. In the Meridium APM Framework, on the Group Home Page for which you want to specify a Group Home Page Administrator, on the **Home Page Tasks** menu, click the **Customize** link.

   The **Customize Home Page** window appears.
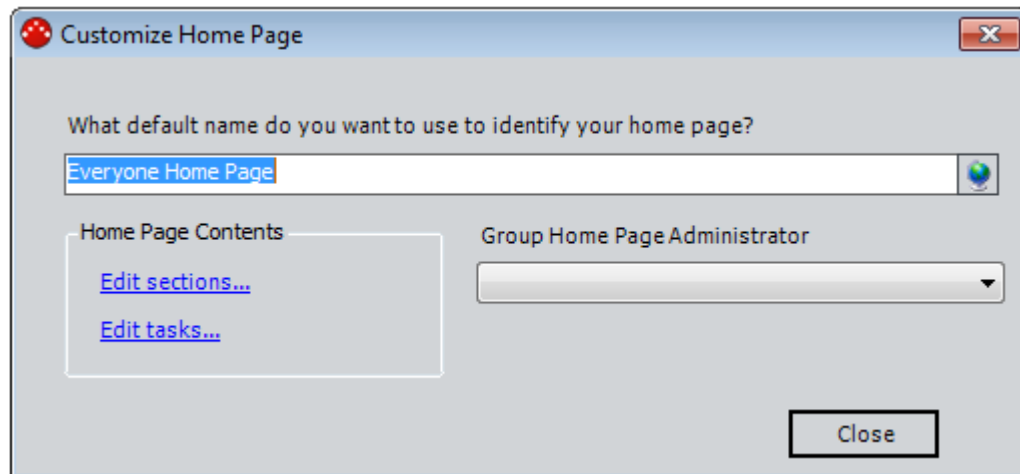


2. In the **Group Home Page Administrator** box, click the down arrow, and select a Security User from the list. This list contains only Active Security Users that are members of the Security Group to which the current Group Home Page belongs.

   > **Note:** The **Group Home Page Administrator** list appears only when you access the **Customize Home Page** window while viewing a Group Home Page. This text box does not appear if you working with a User or Personal Home Page.

3. Click the **Close** button.

The Group Home Page displays the selected Security User in the top right section of the page.



## Removing the Group Home Page Administrator

These instructions explain how to remove the Group Home Page Administrator from a Group Home Page via the Meridium APM Framework application. You can also remove a Group Home Page Administrator via the Configuration Manager by removing the Security User from the associated Security Group or by making the Security User Inactive.

**To remove the Group Home Page Administrator from a Group Home Page:**

1.  In the Meridium APM Framework, on the Group Home Page from which you want to remove the Group Home Page Administrator, on the **Home Page Tasks** menu, click the **Customize** link.

    The **Customize Home Page** window appears.
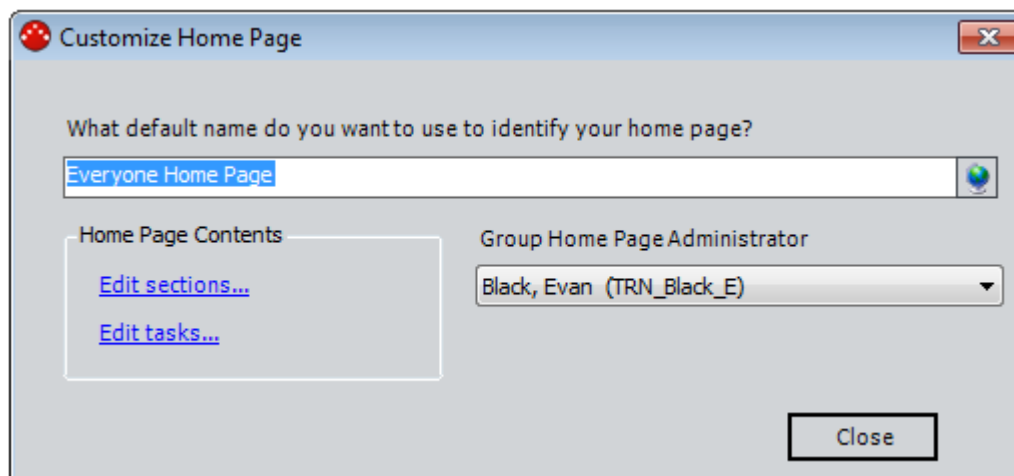


2.  In the **Group Home Page Administrator** box, click the down arrow, and select a different Security User from the list, or select the blank row to indicate that the Group Home Page will not have an Administrator. The list contains only Active Security Users that are members of the Security Group to which the current Group Home Page belongs. For example, if you are specifying a Group Home Page Administrator for the MI

Inspection Home Page, you will see only the Active Security Users that are members of the MI Inspection Security Group.

3.  Click the **Close** button.

    If you selected a new Group Home Page Administrator, the Group Home Page displays the selected Security User in the top right section of the page. Alternatively, if you did not specify a Group Home Page Administrator, nothing is displayed after the **Group Home Page Administrator** label in the top right section of the page.

# Using Home Pages

**Defining the Name for a Home Page**

**To define the name of a Home Page:**

1.  In the Meridium APM Framework, go to the Personal or Group Home Page whose name you want to define.

2.  On the **Home Page Tasks** menu, click the **Customize** link.

    **Note:** If you are a Super User or a member of the MI Power User Role Security Group, this link will be available on both Personal Home Pages and on Group Home Pages. Otherwise, this link is enabled only on your Personal Home Page.

    The **Customize Home Page** window appears.
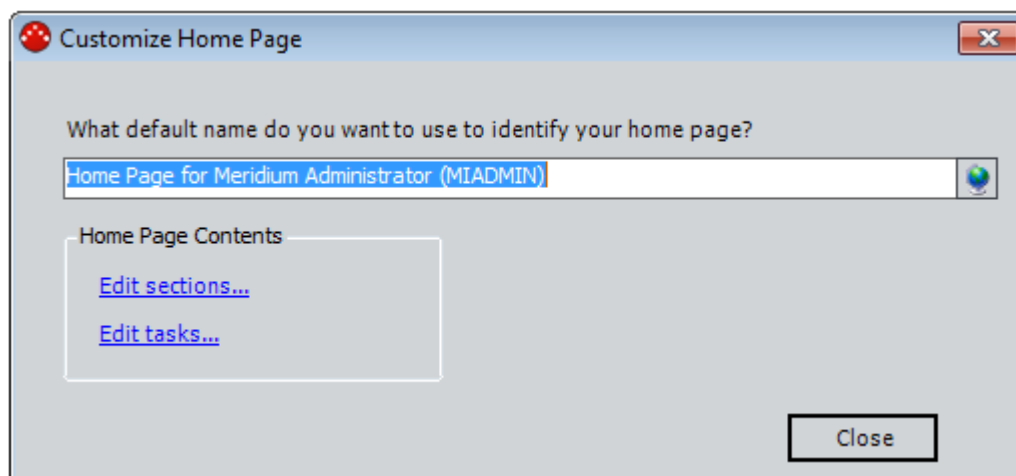
3. In the **What name do you want to use to identify your Home Page** text box, type the name that you want to assign to the Home Page.

4. If desired, click the  button to manage translations for that string.

5. Click the **Close** button.

   The name is saved and appears at the top of the Home Page.

**Task Menus**

**Home Page Tasks Menu**
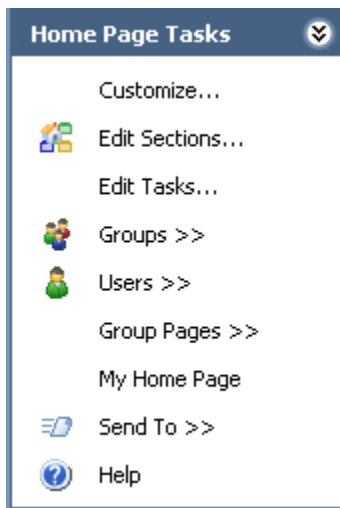


The **Home Page Tasks** menu, which appears on the left side of the **Home Page** screen, contains links to tasks related to the Home Page.

The **Home Page Tasks** menu contains the following links:

- **Customize**: Displays the **Customize Home Page** window, where you can add, remove, and modify Home Page sections.

- **Edit Sections:** Displays the **Customize Home Page Sections** window, where you can modify your Home Page sections.

- **Edit Tasks:** Displays the **Customize Home Page Tasks** window, where you can modify the contents of the **Common Tasks** and **Other Tasks** menus.

- **Groups**: Displays a submenu of active Security Groups defined in the Meridium APM database. This link appears only to Super Users and members of the MI Power User Role Security Group. You can click any link to view that Security Group's Home Page.

- **Users**: Displays a submenu of active Security Users. This link appears only to Super Users and members of the MI Power User Role Security Group. You can click any user in the list to view the associated Home Page.

- **Group Pages**: Displays a submenu of active Security Groups to which you belong. You can click any group in the list to view the associated Home Page.

- **My Home Page**: Displays your Personal Home Page.

- **Send To**: Displays a submenu with options that let you provide a link to the current page on your desktop (create shortcut), in an email message, or on a Home Page.

- **Help**: Displays context-sensitive Help topic for the **Home Page**.

Each of these commands is also available from a menu that drops down from the Home Page title. To see the menu, click the down arrow to the left of the Home Page title.

Below the **Home Page Tasks** menu, the following menus appear: **Common Tasks** and **Other Tasks**. These menus are empty by default, but you can customize them with links to the tasks of your choice.

## Common Tasks Menu

The **Common Tasks** menu is customizable, which means that you can add hyperlinks to it to provide quick access to frequently used features and functions.

The **Common Tasks** menu appears directly below the **Home Page Tasks** menu on the left side of the Home Page.
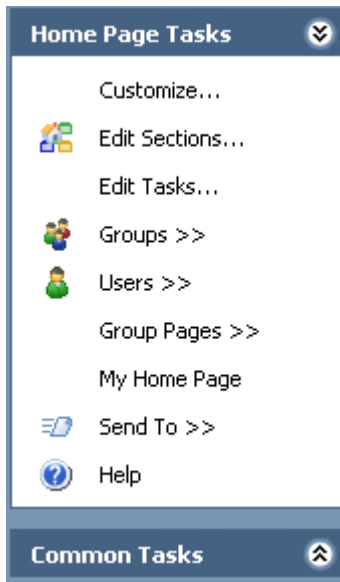
## Other Tasks Menu

The **Other Tasks** menu is customizable, which means that you can add hyperlinks to it to provide quick access to frequently used features and functions.

The **Other Tasks** menu appears directly below the **Common Tasks** menu on the left side of the Home Page.
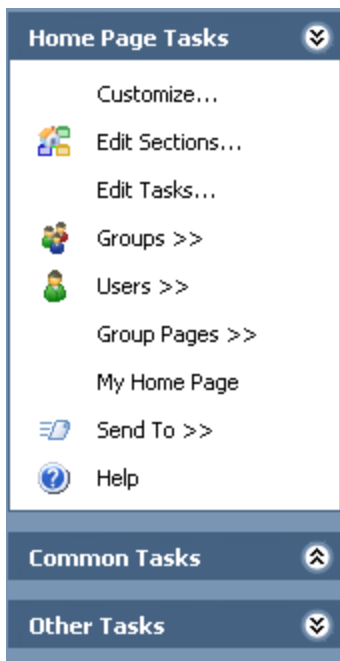
**Customizing the Common Tasks Menu and Other Tasks Menu**

Adding a New Link

**To add a link to the Common Tasks or Other Tasks menu:**

1.  In the Meridium APM Framework, on the Home Page, on the **Home Page Tasks** menu, click the **Edit Tasks** link.

    The **Customize Home Page Tasks** window appears.
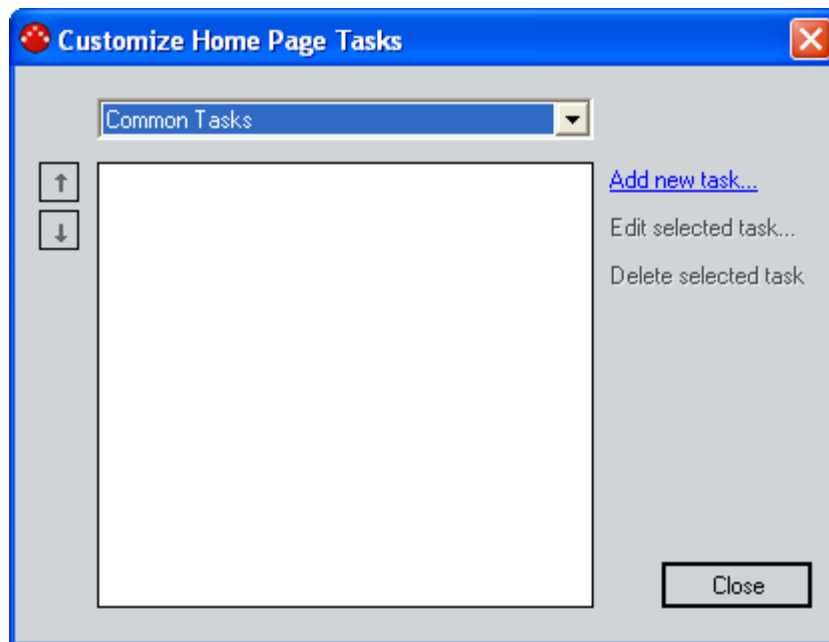


2.  In the drop-down list at the top of the window, select the menu to which you want to add the task. You can select either the **Common Tasks** menu or the **Other Tasks** menu.

3.  Click the **Add new task** link.

    The **New Task** dialog box appears.
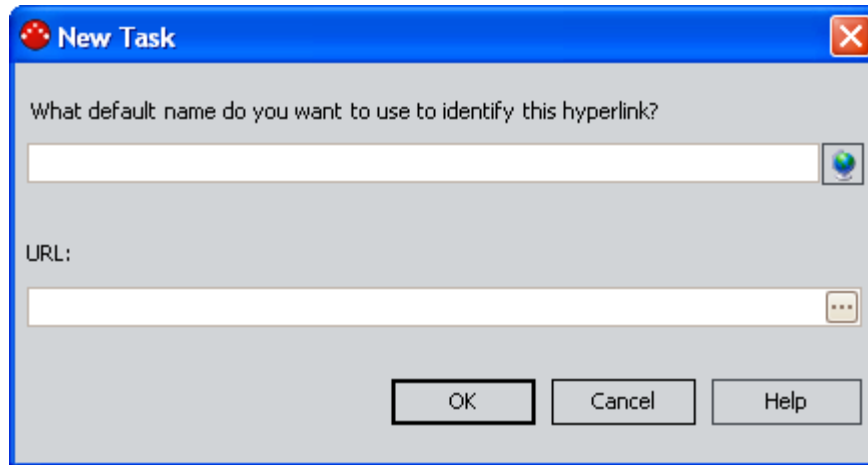
4.  In the first text box, type a name for the link. This label will appear in the task menu.

5.  If desired, click the  button to manage translations for that string.

6.  In the **URL** text box, type the URL for the link, or click the  button to build your URL using the **URL Builder**.

7.  Click **OK**.

    The **New Task** dialog box closes, revealing the **Customize Home Page Tasks** window.

8.  Click the **Close** button.

    The new link appears in the appropriate task menu.

Editing a Link

For any hyperlink on the **Common Tasks** menu or **Other Tasks** menu, you can modify either the label or the URL.

**To modify a hyperlink on the Common Tasks menu or Other Tasks menu:**

1.  In the Meridium APM Framework, on the Home Page, on the **Home Page Tasks** menu, click the **Edit Tasks** link.

    The **Customize Home Page Tasks** window appears.
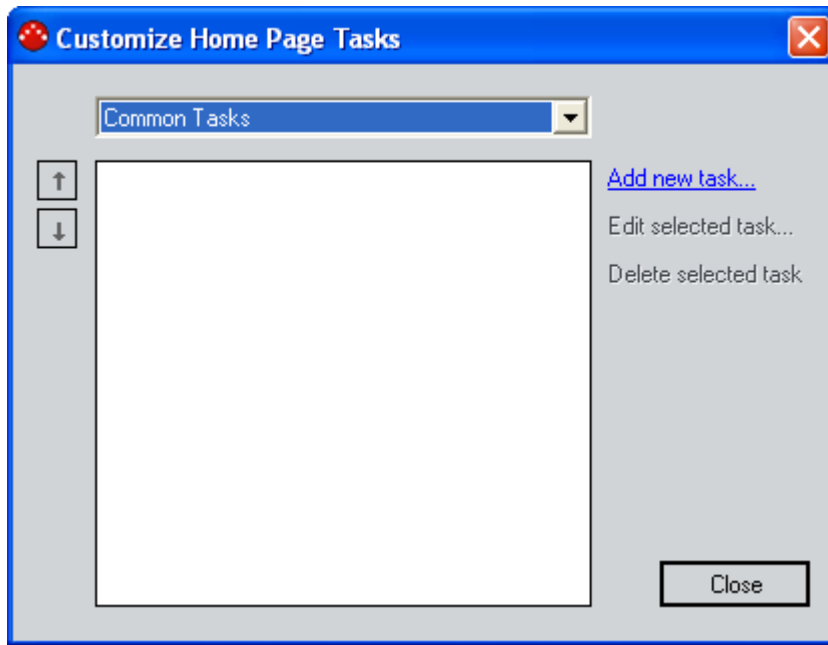
2. In the drop-down list at the top of the window, select the task menu in which the hyperlink exists, either **Common Tasks** or **Other Tasks**.

3. Select the task that you want to edit.

4. Click the **Edit selected task** link.

   The **Edit Task** dialog box appears.



5. Edit the label and URL as desired.

6. If desired, click the  button to manage translations for that string.

7. Click **OK**.

8. On the **Customize Home Page Tasks** window, click the **Close** button.

   Your changes appear on the Home Page.

Reorganizing Links

Links appear by default in the order in which you add them to the task menu, but you can reorder them if you prefer.

**To change the order of links in a task menu:**

1. In the Meridium APM Framework, on the Home Page, on the **Home Page Tasks** menu, click the **Edit Tasks** link.

   The **Customize Home Page Tasks** window appears.
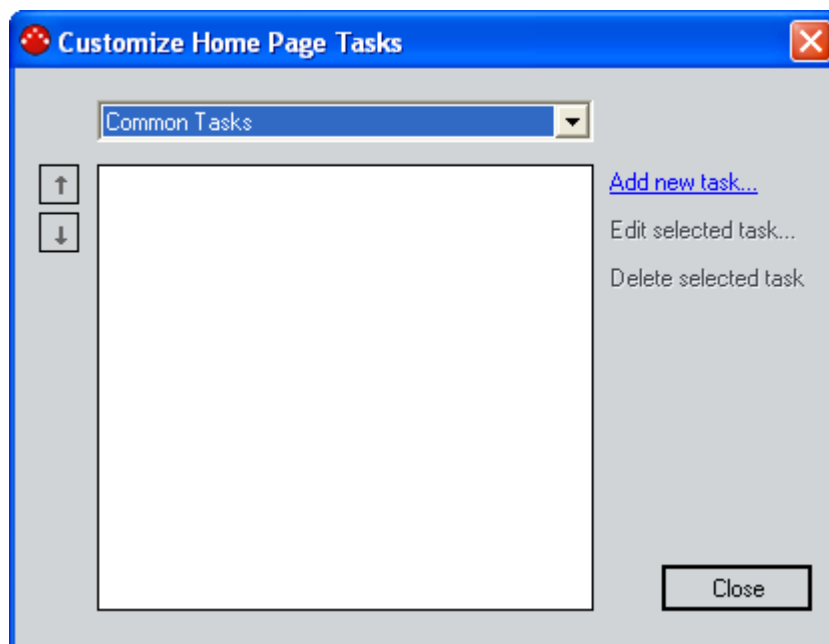


2. In the drop-down list at the top of the **Customize Home Page Tasks** window, select the menu in which the link exists, either **Common Tasks** or **Other Tasks**.

3. Select the link that you want to move.

4.  Using the arrow buttons that appear to the left of the list, move the link up or down as desired.

5.  If desired, move other links in the list.

6.  When you are satisfied with the order of the links, click the **Close** button.

Expanding and Collapsing Task Menus

Sometimes you might prefer to collapse the **Common Tasks** and **Other Tasks** menus to hide the links.

**To collapse the task menus:**

*   In the Meridium APM Framework, on the Home Page, on the task menu that you want to collapse, click the up arrow. 

**To expand the task menus:**

*   In the Meridium APM Framework, on the Home Page, on the task menu that you want to expand, click the down arrow. 

Deleting a Link

**To delete a link from the Common Tasks menu or Other Tasks menu:**

1.  In the Meridium APM Framework, on the Home Page, on the **Home Page Tasks** menu, click the **Edit Tasks** link.

    The **Customize Home Page Tasks** window appears.
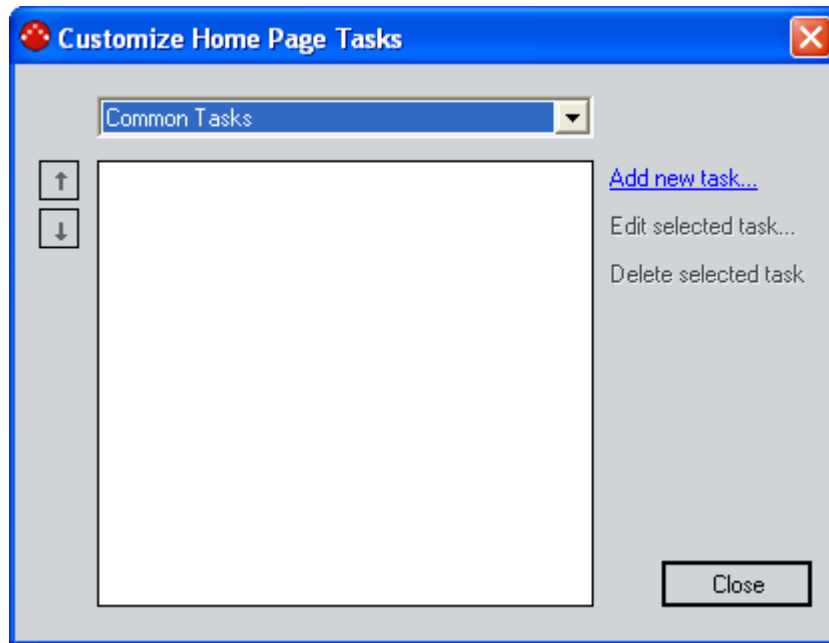
2.  In the drop-down list at the top of the **Customize Home Page Tasks** window, select the menu that contains the link that you want to delete, either **Common Tasks** or **Other Tasks**.

3.  Select the link that you want to delete.

4.  Click the **Delete selected task** link.

    A confirmation message appears, asking if you are sure that you want to delete the task.

5.  Click the **Yes** button.

6.  On the **Customize Home Page Tasks** window, click the **Close** button.

    The link no longer appears in the list.

**Adding a Section to a Home Page**

**Adding a Local Section to a Home Page**

Each Personal Home Page can contain local, user-defined sections with links to internal and external documents. Likewise, each Group Home Page can contain group-specific sections of links that might be useful to the members of that group.

Sections defined on a user's Personal Home Page can be viewed and edited only from that user's Home Page. Sections defined for a Group Home Page can be viewed and edited from that group's Home Page. Additionally, group sections can be shared on the Personal Home Pages of that group's members.

**To add a section to a Personal or Group Home Page:**

1. In the Meridium APM Framework, on the Home Page, on the **Home Page Tasks** menu, click the **Edit Sections** link.

   The **Customize Home Page Sections** window appears.
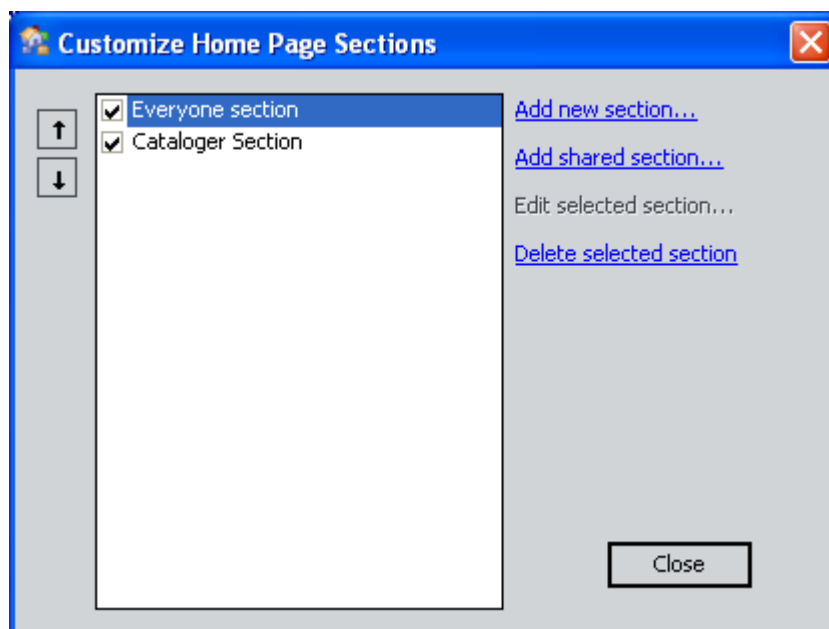


   If sections have already been defined for the Home Page, they appear in the list on the window.

2. Click the **Add New Section** link.

   The **Add New Home Page Section** window appears.
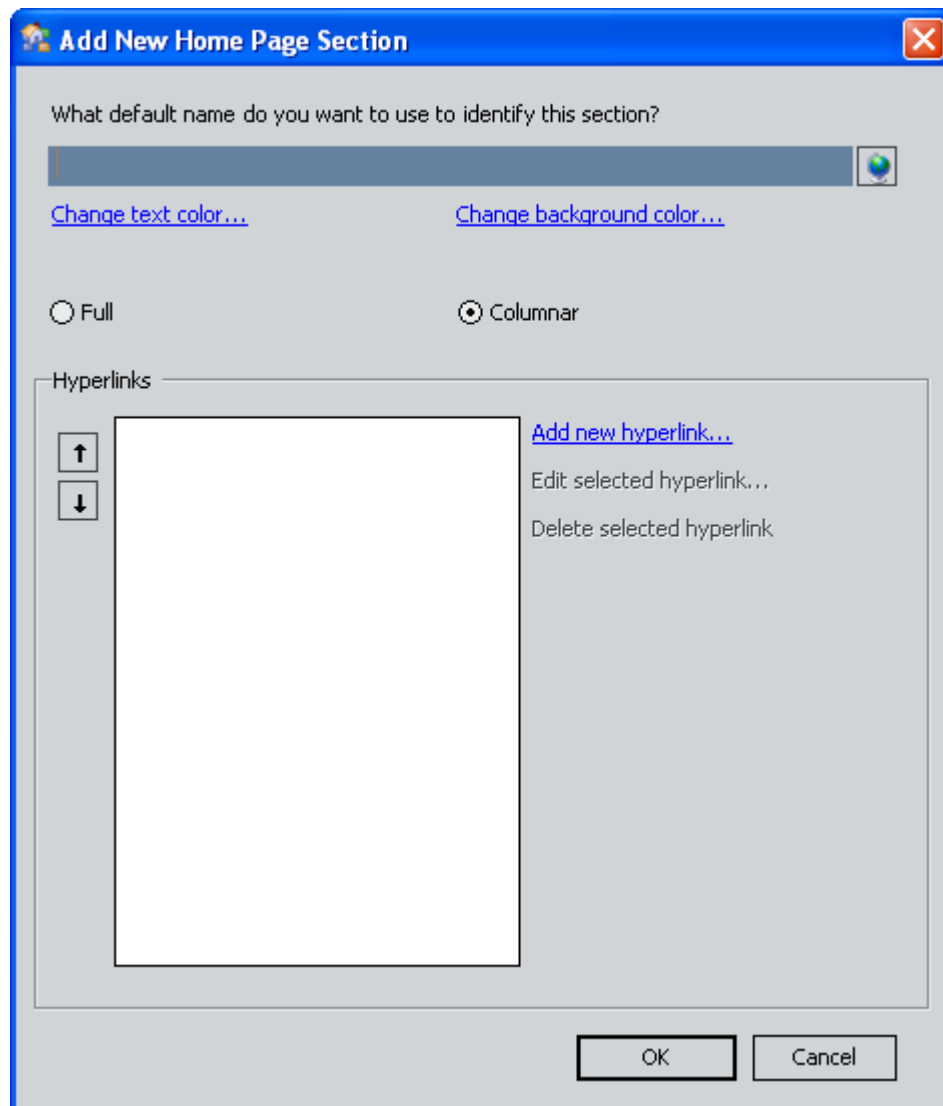
3. In the **What default name do you want to use to identify this section** text box, type a name for the new section.

> **Hint:** To create a section heading that contains an **&** character, type the **&** character *twice* where you want it to appear. For example, if you want to label the section **Reports & Graphs**, type `Reports && Graphs`. If you type the **&** character only once, it will be omitted from the display on the Home Page.

4. If desired, click the 🌐 button to manage translations for that string.

5. If desired, change the background color and text color for the section header.

6. Choose the layout for your section by selecting either the **Full** or **Columnar** option.

7. If you want to add a hyperlink to the section, click the **Add new hyperlink** link. On the dialog box that appears, specify the name and URL for the link.

8. Click **OK**.

   The **Add New Home Page Section** window closes, revealing the **Customize Home Page Sections** window.

9. Click the **Close** button.

   The new section appears on the Home Page.

   **Note:** If the full name of the section has been truncated in the section header because of its length, rest the mouse over the section title to display the full name.

### Adding a Shared Section to a Home Page

Each Personal Home Page, User Home Page, or Sub-group Home Page can contain one or more *shared* sections, which are sections that have been defined for a Group Home Page but are available for display on the Home Pages of its members. Shared sections are automatically updated at the user level based on changes made at the group level. This means that if you choose to display a shared section on a Home Page, it will always reflect the most current information.

Shared sections can be added manually only to Personal, User, and Sub-group Home Pages. They cannot be added manually to Group Home Pages.

**To add a shared section to a Home Page:**

1. In the Meridium APM Framework, on the Home Page, on the **Home Page Tasks** menu, click the **Edit Sections** link.

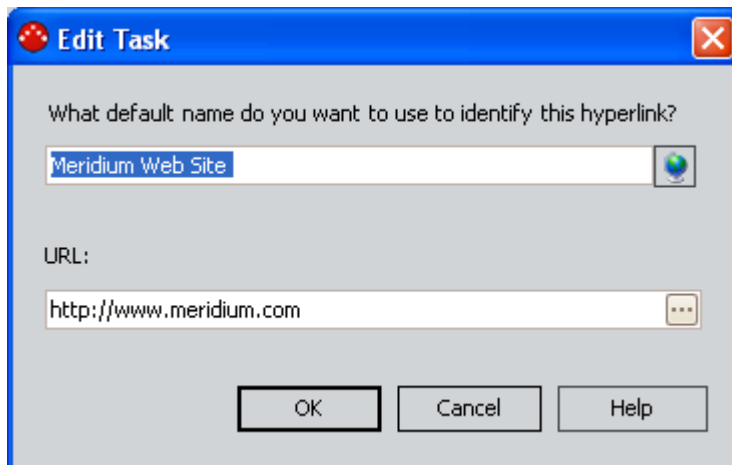   The **Customize Home Page Sections** window appears.
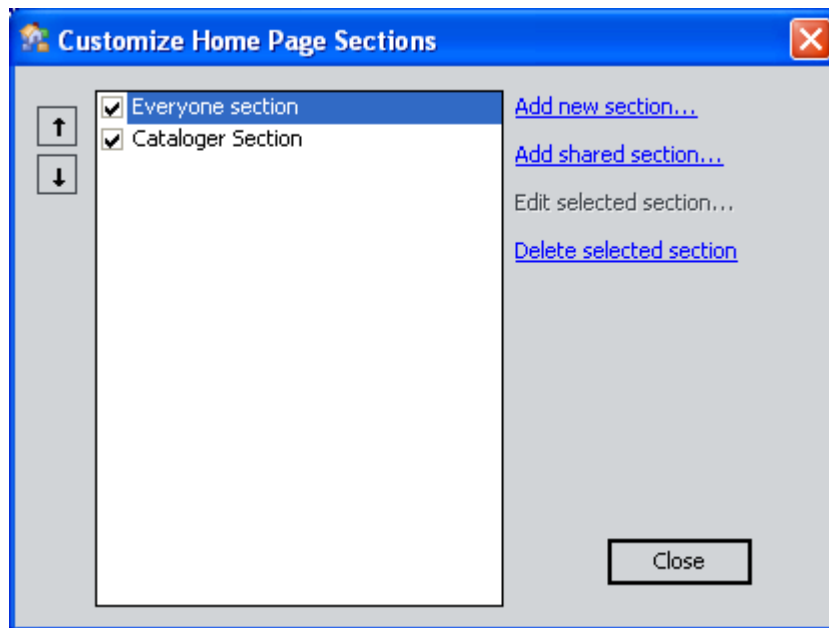
2.  Click the **Add Shared Section** link.

    The **Add Shared Section** dialog box appears.
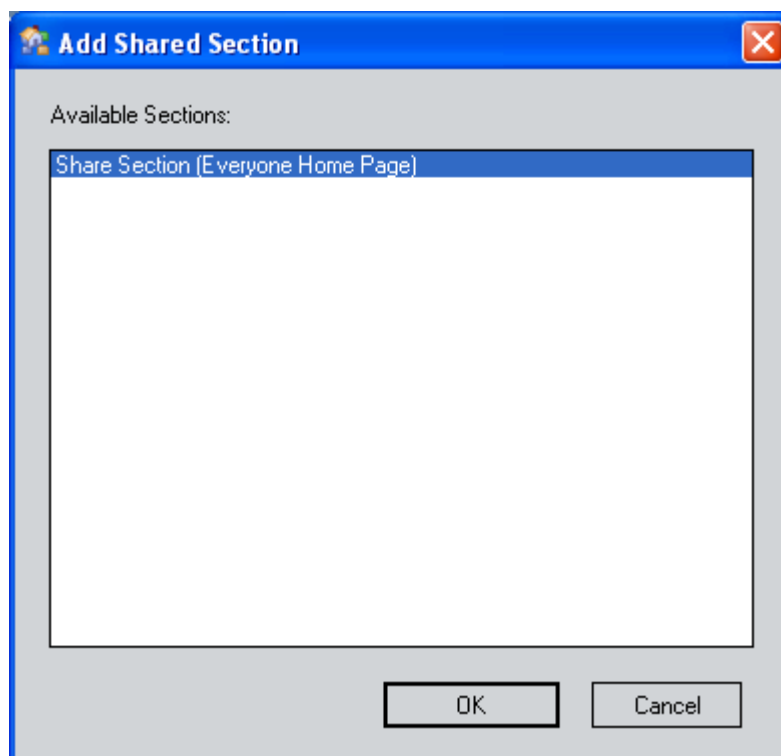


    The **Add Shared Section** dialog box displays a list of sections that have been defined for any Security Group of which the user is a member (if

you are adding the section to a User or Personal Home Page) or to which the sub-group belongs (if you are adding the section to a Sub-group Home Page).

3. Select the section that you want to add, and click **OK**.

   The section is added to the Home Page, and the term **Shared** appears in parentheses next to the title in the section header.



> **Note:** If the full name of the section has been truncated in the section header because of its length, rest the mouse over the title to display the full name.
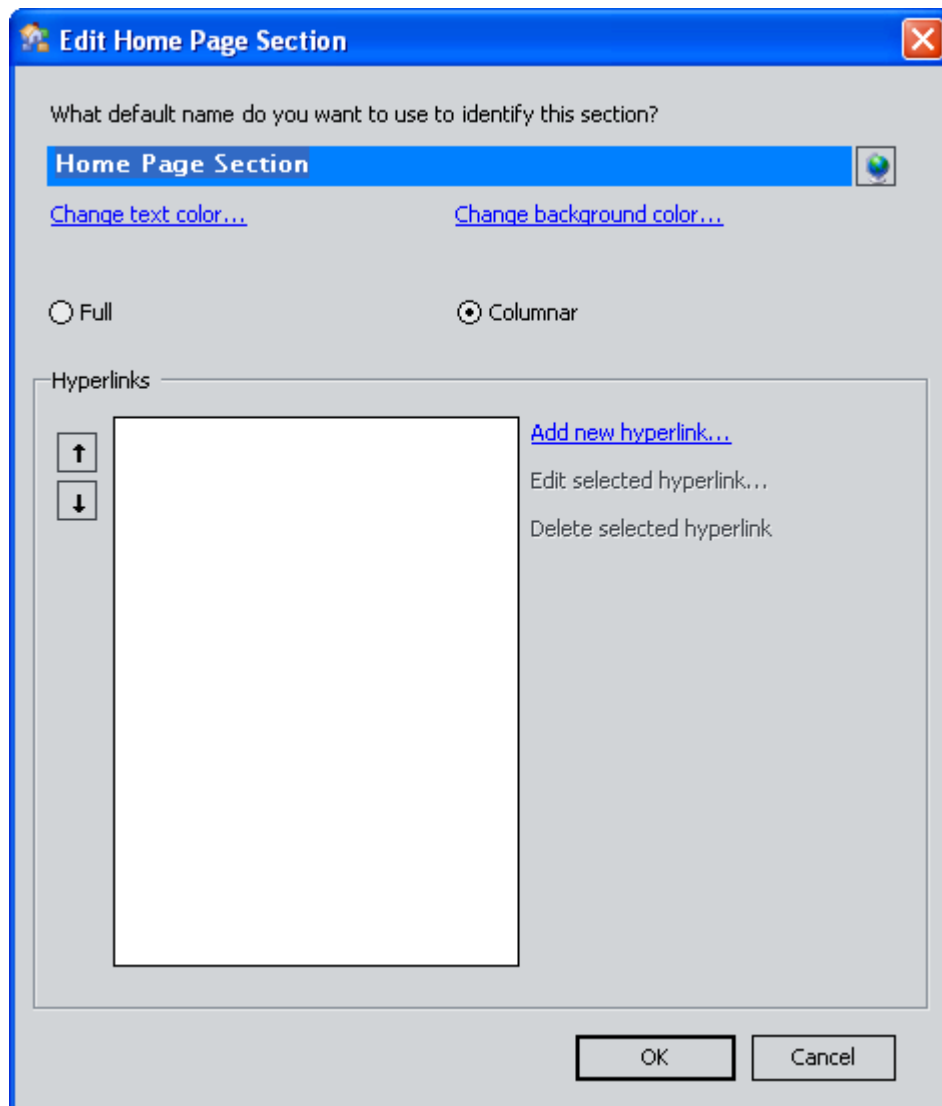
**Changing the Text and Background Color of a Section Header**

The text and background color of section headers can help you distinguish one section from another. Additionally, using the same color scheme for multiple sections can help you group similar sections together.

**To change the text and background color of a section:**

1. In the Meridium APM Framework, on the Home Page, on the Home Page, right click the section header that you want to modify, and click **Edit Section**.

   The **Edit Home Page Section** window appears.

2. To change the text color, click the **Change text color** hyperlink.

   -or-

   To change the background color, click the **Change background color** hyperlink.

   The **Color** dialog box appears.
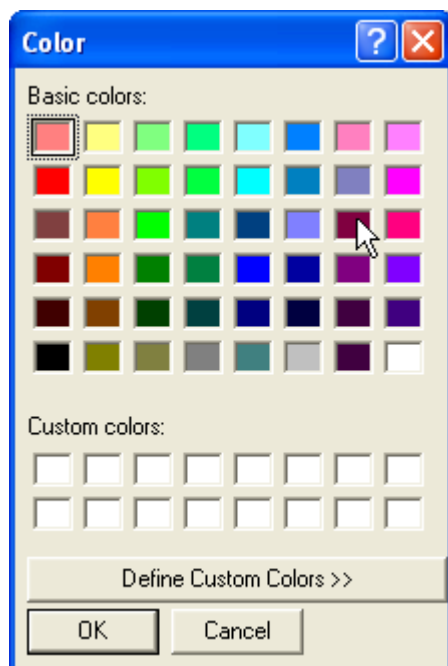
3. Select the color that you want to apply to the text or background. You can create a custom color by clicking the **Define Custom Colors** link. The palette that appears represents the full range of colors that are available. You can select the desired hue and click the **Add to Custom Colors** button to use that color.

> **Note:** If you close the **Edit Home Page Section** window and reopen it, all custom colors will be removed. If you want to save a custom color for future use, make sure to write down the numbers that define the color (available on the **Color** dialog box). In addition, the default color is not one of the basic colors. If you change the default color and want to return to it, you will need to add the color using the numbers that define it: Hue 50, Sat 46, Lum 134, Red 153, Green 164, and Blue 121.

4. On the **Color** dialog box, click **OK**.

5. On the **Edit Home Page Section** window, click **OK**.

The text or background color changes on the Home Page as appropriate.

### Changing the Column Width of a Section

Each section can either:

- Span the full width of the Home Page.

-or-

- Be divided into columns, depending on how many Home Page sections exist.

**To change the column width of a section:**

1. In the Meridium APM Framework, on the Home Page, right-click the section header that you want to modify, and click **Edit Section**.

   **Note:** You can also right-click the section header that you want to modify and select **Full** or **Columnar** from the shortcut menu. The section width will change accordingly.

   The **Edit Home Page Section** window appears.
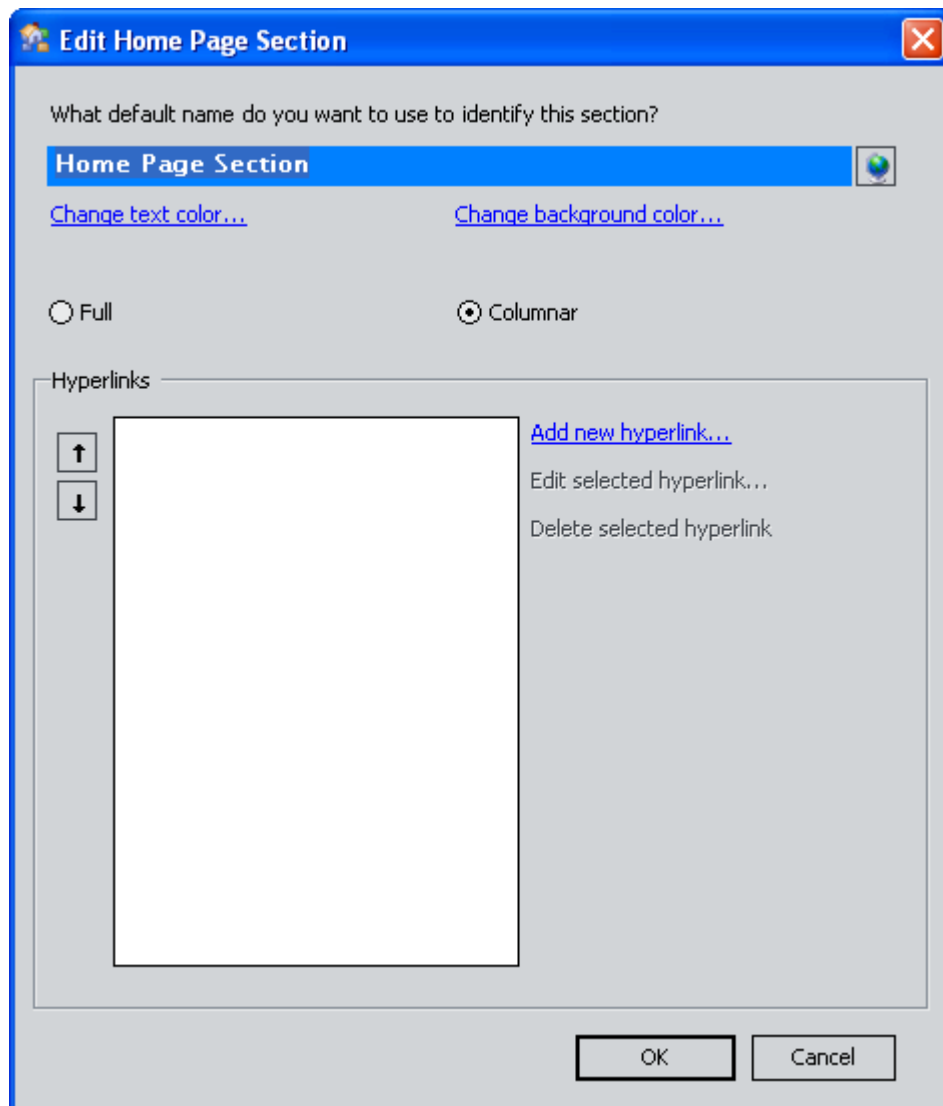
2. Select the option that you want to apply to the section: **Full** or **Columnar**. If you select **Full**, the section will span the width of the Home Page. If you select **Columnar**, the section will have a set width so that three sections can fit within the width of the Home Page (section widths cannot be changed).

3. Click **OK**.

   The column layout changes as appropriate.

   **Full**
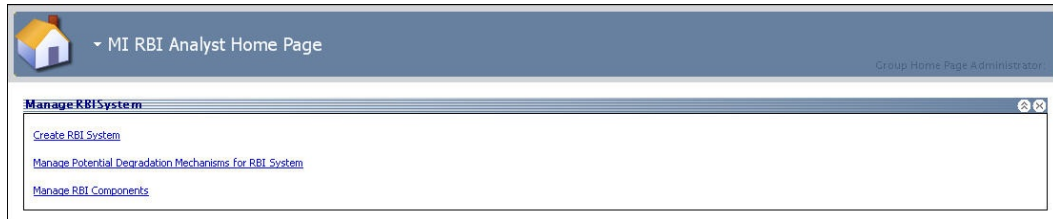
### Columnar
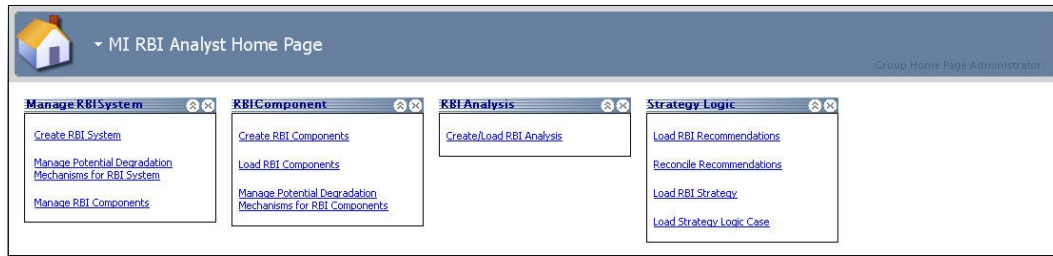


## Reordering Sections

By default, sections appear on the Home Page in the order in which you create them. You can, however, reposition sections as needed.

**To modify the arrangement of sections on the Home Page:**

1. In the Meridium APM Framework, on the Home Page, on the **Home Page Tasks** menu, click the **Edit Sections** link.

   The **Customize Home Page Sections** window appears.
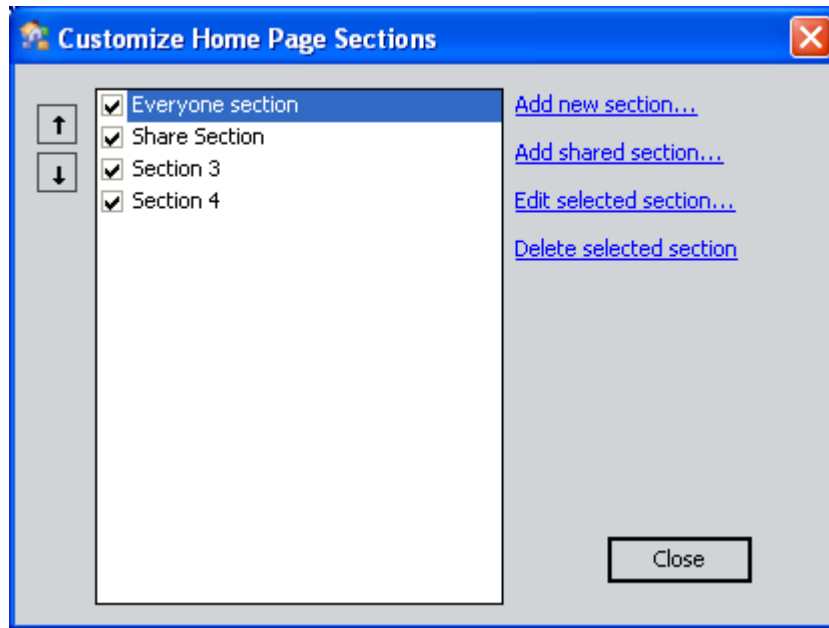
2. Select the section that you want to move.

3. Using the arrow buttons, which appear on the left side of the window, move the section up or down in the list as desired.

4. If desired, move other sections.

5. When you are satisfied with the new arrangement, click the **Close** button.

   The Home Page refreshes to reflect your changes.
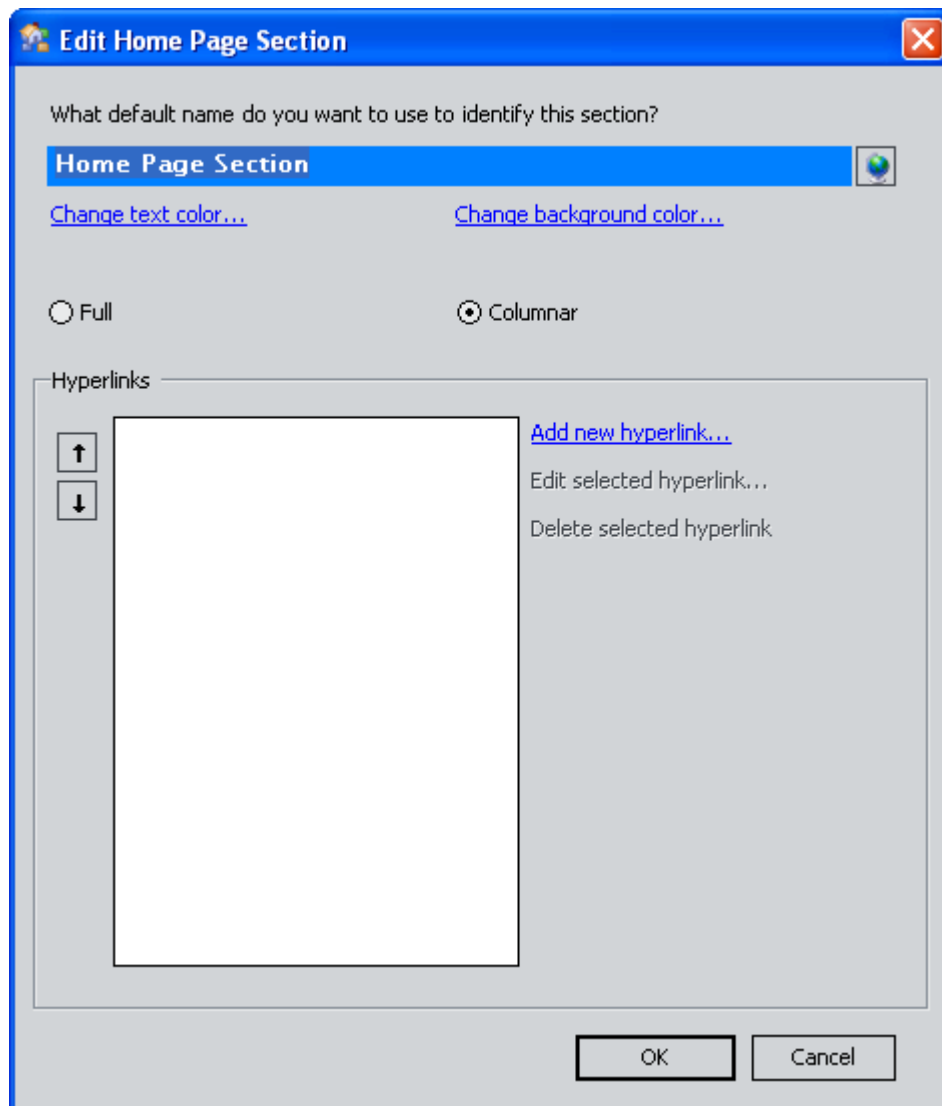
## Renaming Sections

You can use the following instructions to rename a personal section of your Home Page. Note that you cannot rename a shared section unless you have the appropriate privileges.

**To rename a Home Page section:**

1. In the Meridium APM Framework, on the Home Page, right click the section header that you want to modify, and click **Edit Section**.

   The **Edit Home Page Section** window appears.

2. In the text box where the current name appears, delete the old name, and type the new name.

> **Hint:** To create a section heading that contains an **&** character, type the **&** character *twice* where you want it to appear. For example, if you want to label the section **Reports & Graphs**, type `Reports && Graphs`. If you type the **&** character only once, it will be omitted from the display on the Home Page.

3. If desired, click the 🌐 button to manage translations for that string.

4. Click **OK**.

The Home Page refreshes to display the new section name.

**Hiding and Displaying Sections**

You can hide a section of your Home Page temporarily without deleting it altogether.

**To hide a section of your Home Page:**

- In the Meridium APM Framework, on the Home Page, click the **X** button in the section header.

  Note that when you rest your mouse pointer over the **X** button, a tool tip appears reminding you that clicking the **X** button only hides the section; the section will not be deleted.
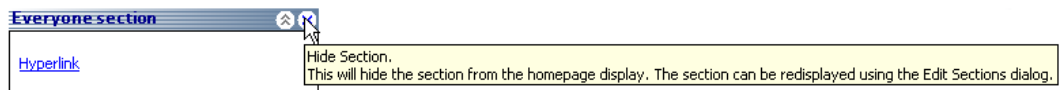


**To make the section reappear:**

1. In the Meridium APM Framework, on the Home Page, on the **Home Page Tasks** menu, click the **Edit Sections** link.

   The **Customize Home Page Sections** window appears.
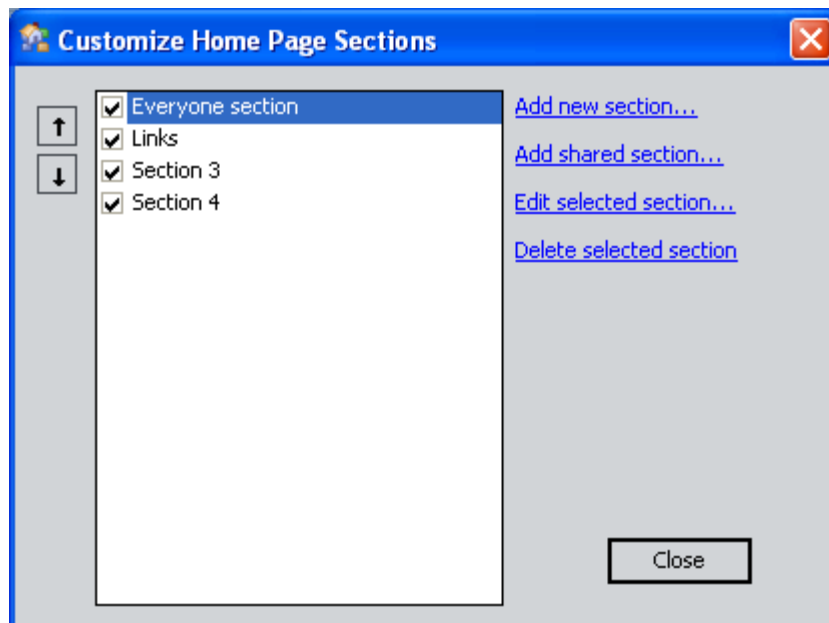
2.  In the list of sections, select the check box for the section that you want to make appear.

3.  Click the **Close** button.

    The section reappears.

**Deleting Home Page Sections**

**To delete a section from the Home Page:**

1.  In the Meridium APM Framework, on the Home Page, on the **Home Page Tasks** menu, click the **Edit Sections** link.

    The **Customize Home Page Sections** window appears.
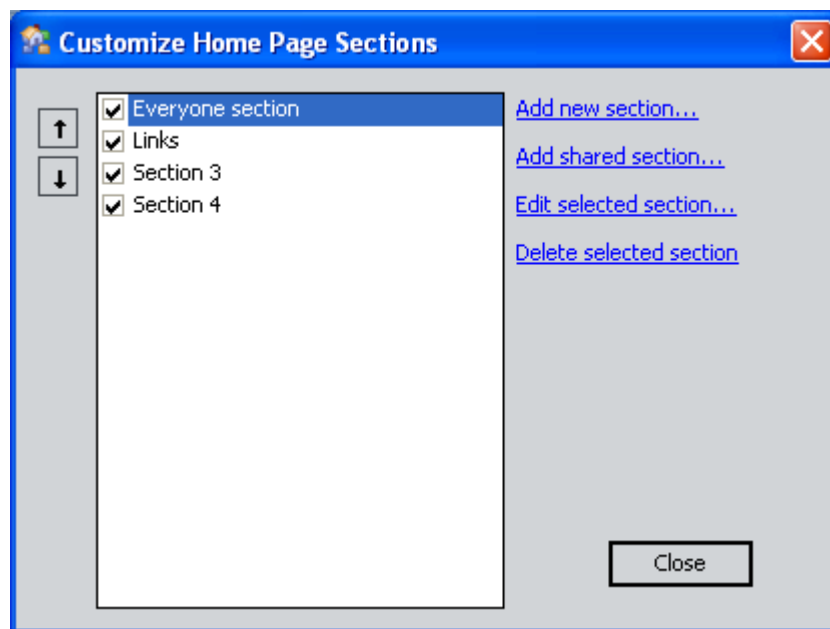


2.  Highlight the section that you want to remove, and click the **Delete selected section** link.

    > **Note:** A selected check box in front of a section name only determines whether the section will appear or not appear on the Home Page. You can delete sections that have selected or cleared check boxes. To delete a section, you must highlight the section name and click the **Delete selected section** link.

A confirmation message appears, asking if you are sure that you want to delete the section.

3. Click the **Yes** button to delete the section and its associated hyperlinks.

The section is removed from the Home Page.

**Hyperlinks in Sections**

**About Hyperlinks in Sections**

A hyperlink is a shortcut to an internal or external location. By adding hyperlinks to Home Pages, you can provide quick access to any external webpage or any feature in the Meridium APM Framework application. In the following sections, we provide instructions for adding, modifying, and deleting hyperlinks on your Home Page.

Each section can contain as many hyperlinks as you prefer. Each hyperlink must be assigned to a specific section, so before you can add a hyperlink, your Home Page must already contain one or more sections.

After links exist on a Home Page, you can:

- Open the associated item.

- Manage translations for the hyperlink name.

- Send the link to someone via email.

- Create a desktop shortcut for the link.

**Adding a Hyperlink to a Section**

Adding a Hyperlink Directly from the Home Page

This section contains instructions for adding a hyperlink directly from the Home Page. You can also add a hyperlink to a Catalog item from another location in the Meridium APM Framework application.

**To add a hyperlink to a section directly from the Home Page:**

1. In the Meridium APM Framework, on the Home Page, right-click the column header of the section to which you want to add a hyperlink, and click **Add New Hyperlink**.

   The **New Hyperlink** dialog box appears.
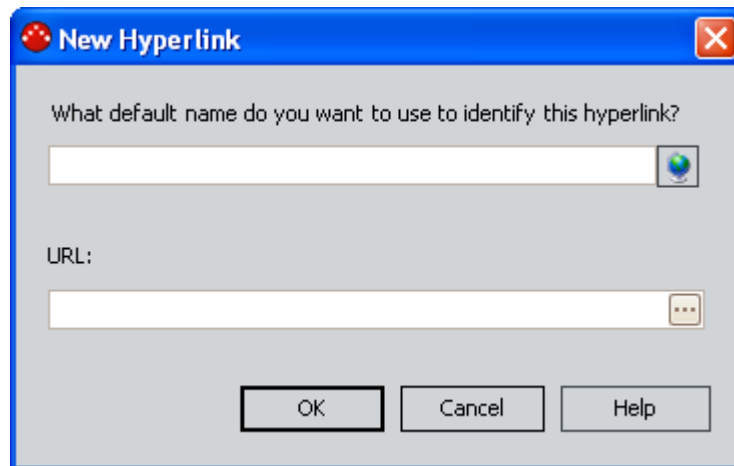


2. In the **What default name do you want to use to identify this hyperlink** text box, type a name for the link. This name is what will appear on the Home Page.

   Note that to create a hyperlink label that contains an **&** character, you must type the **&** character *twice* where you want it to appear. For example, if you want to label the hyperlink **Tasks Assigned to John & Mary**, type `Tasks Assigned to John && Mary`. If you type the **&** character only once, it will be omitted from the display on the Home Page.

   **Note:** If you try to add multiple hyperlinks with the same name within the *same* section, a message will be displayed, prompting you to enter a different name for the second hyperlink. You can, however, add multiple hyperlinks of the same name to *different* sections.

3. If desired, click the  button to manage translations for that string.

4. In the **URL** text box, type the URL of the hyperlink.

   -or-

Click the ▣ button to use the **URL Builder** to construct the link.

> **Note:** The URL can be for either an internal or external document. It must be the full URL, including the protocol portion (e.g., **http://www.meridium.com**, not just **www.meridium.com**).

5. Click **OK**.

The new hyperlink appears on the Home Page.

Adding a Hyperlink from the Edit Home Page Section Window

**To add a hyperlink to a section from the Edit Home Page Section dialog box:**

1. In the Meridium APM Framework, on the Home Page, right-click the header of the section in which you want to add the link, and click **Edit Section**.

The **Edit Home Page Section** window appears.
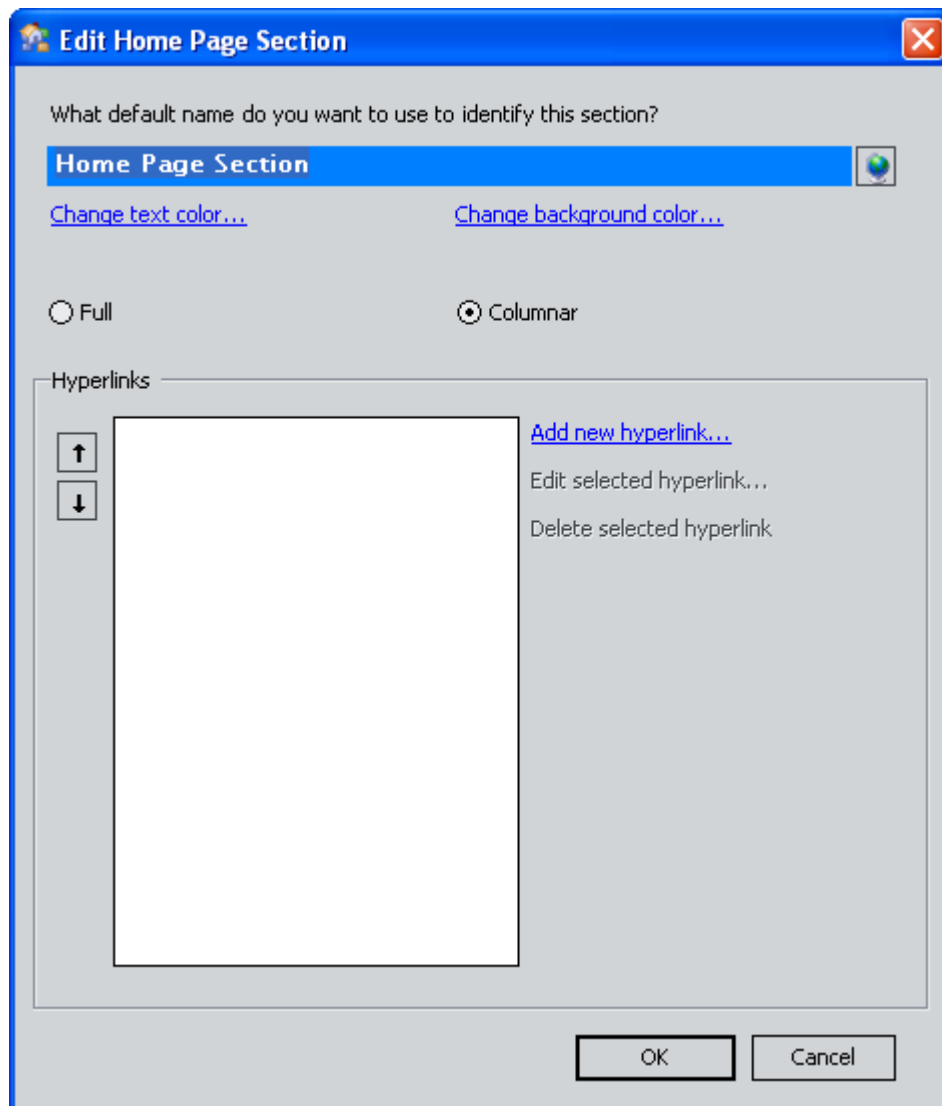
2.  Click the **Add new hyperlink** link.

    The **New Hyperlink** dialog box appears.
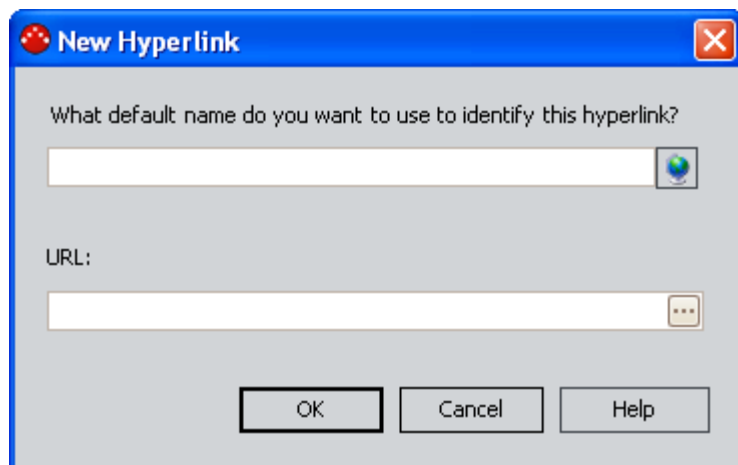
3. In the **What default name do you want to use to identify this hyperlink** text box, type a name for the link. This name is what will appear on the Home Page.

   Note that to create a hyperlink label that contains an **&** character, you must type the **&** character *twice* where you want it to appear. For example, if you want to label the hyperlink **Tasks Assigned to John & Mary**, type `Tasks Assigned to John && Mary`. If you type the **&** character only once, it will be omitted from the display on the Home Page.

   **Note:** If you try to add multiple hyperlinks with the same name within the *same* section, you will receive a message prompting you to enter a different name for the second hyperlink. You can, however, add multiple hyperlinks of the same name to *different* sections.

4. In the **URL** text box, type the URL of the hyperlink.

   -or-

   Click the ⬚ button to use the **URL Builder** to construct the link.

   **Note:** The URL can be for either an internal or external document. It must be the full URL, including the protocol portion (e.g., **http://www.meridium.com**, not just **www.meridium.com**).

5. Click **OK**.

   The new hyperlink appears on the Home Page.

Adding a Link from Internet Explorer

**To add a link from Internet Explorer:**

1. Locate the link in Internet Explorer that you want to add to the Home Page.

2. Right-click the link in Internet Explorer, and click **Copy Shortcut**.

3. In the Meridium APM Framework, on the Home Page, right-click the section header of the section in which you want to add the hyperlink, and click **Add new hyperlink**.

    The **New Hyperlink** dialog box appears.
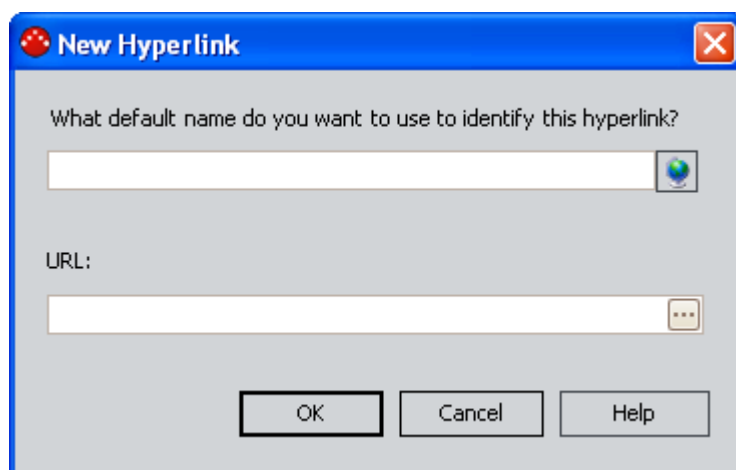


4. In the **What default name do you want to use to identify this hyperlink** text box, type the desired name of the hyperlink.

    Note that to create a hyperlink label that contains an **&** character, you must type the **&** character *twice* where you want it to appear. For example, if you want to label the hyperlink **Tasks Assigned to John & Mary**, type `Tasks Assigned to John && Mary`. If you type the **&** character only once, it will be omitted from the display on the Home Page.

5. Right-click the **URL** text box, and click **Paste**.

    The URL you copied from Internet Explorer appears in the text box.

6.  Click **OK**.

The link appears in the selected section.

**Reorganizing Hyperlinks Within a Section**

Hyperlinks appear by default in the order in which you create them. But you can reorder the links as desired. For example, you might prefer to arrange them alphabetically or according to frequency of use.

**To reorganize hyperlinks in a section:**

1.  In the Meridium APM Framework, on the Home Page, right-click the header of the section whose hyperlinks you want to reorder, and click **Edit Section**.

The **Edit Home Page Section** window appears.

2. In the **Hyperlinks** section, click the link that you want to move.

3. Using the arrow buttons that appear on the left side of the hyperlinks list, move the link up or down as desired.

4. If desired, reorganize additional links.

5. When you are satisfied with the new arrangement, click **OK**.

   The Home Page displays the links in the new order.

**Editing a Hyperlink**

**To edit a hyperlink in a section:**

1. In the Meridium APM Framework, on the Home Page, right-click the header of the section that contains the link, and click **Edit Section**.

   The **Edit Home Page Section** window appears.
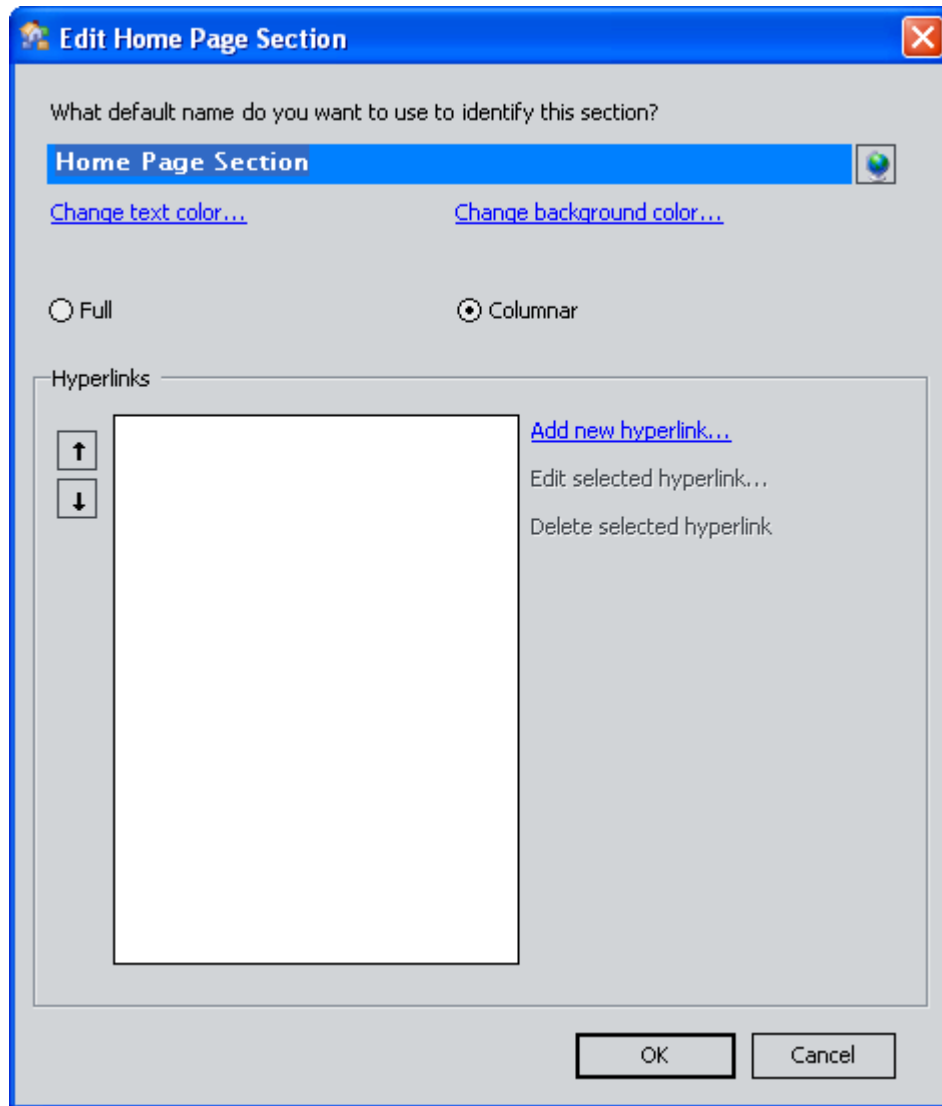


2. In the **Hyperlinks** section, click the link that you want to edit.

3. Click the **Edit Selected Hyperlink** link.

The **Edit Hyperlink** dialog box appears.
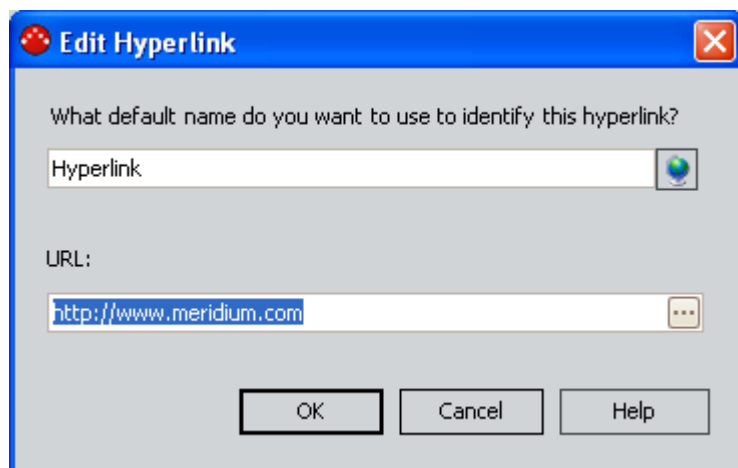


4. Modify the label and URL as desired, and click **OK**.

5. If desired, click the  button to manage translations for that string.

The Home Page refreshes to reflect your changes.

**Opening the Item Associated with a Link**

**To open an item from a Home Page:**

- In the Meridium APM Framework, on the Home Page, click the link associated with the item that you would like to open.

  -or-

- In the Meridium APM Framework, on the Home Page, right-click the desired link, and then click **Open** or **Open in New Window**. Choosing **Open** will open the item in the current window, while **Open in New Window** displays the item in another window. You may prefer to choose **Open in New Window** if you want to compare several different items at the same time.

Copying a Link From a Home Page

**To copy a link from a Home Page:**

1. In the Meridium APM Framework, on the Home Page, right-click the link, and click **Copy Shortcut**.

2. In any location that accepts URLs within the Meridium APM Framework application, such as the **New Hyperlink** dialog box, use the right-click option, and select **Paste** from the menu that appears.

   The copied URL appears.

Sending a Link to Someone via Email

**To send a Home Page link to someone via email:**

1. In the Meridium APM Framework, on the Home Page, right-click the desired link, point to **Send To**, and then click **Mail Recipient**.
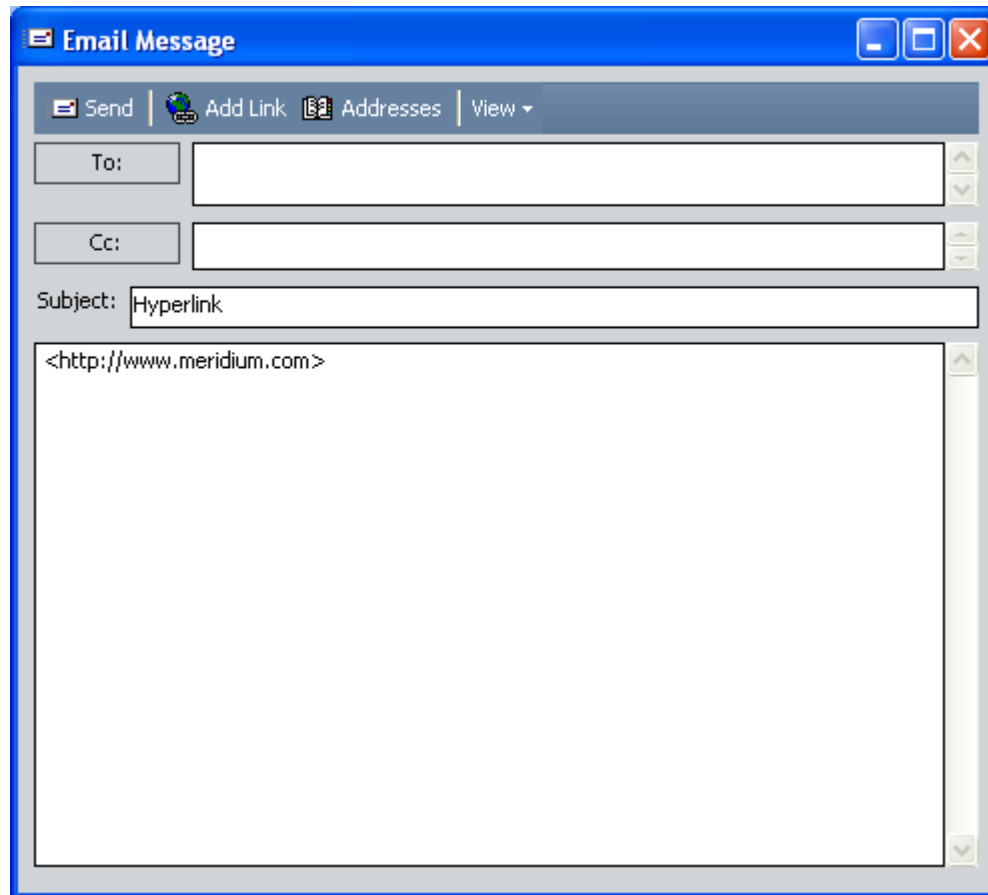
   The **Email Message** dialog box appears.

2.  In the **To** text box, type the email address of the desired recipient.

3.  Modify the **CC** and **Subject** fields if desired.

4.  Modify the message if desired. The link is already included in the message by default.

5.  Click the **Send** button.

    The message is sent to the specified recipient.

**Sending a Shortcut to the Desktop from the Home Page**

If you like, you can send to your desktop a shortcut to a Home Page link. If the link is an internal Meridium APM link, when you launch the link from your desktop, you will be prompted to log in to the Meridium APM Framework application, after which you will be taken directly to that page.

**To create a desktop shortcut to a Home Page item:**

1. In the Meridium APM Framework, on the Home Page, right-click the link for which you want to create a desktop shortcut.

2. On the shortcut menu, point to **Send**, and then click **Desktop (Create Shortcut)**.

   A shortcut is created on your desktop.

### Deleting a Hyperlink from a Section

**To delete a hyperlink from a section:**

1. In the Meridium APM Framework, on the Home Page, right-click the header of the section that contains the link, and click **Edit Section**.

   The **Edit Home Page Section** window appears.

2. In the **Hyperlinks** section, click the link that you want to delete.

3. Click the **Delete Selected Hyperlink** link.

   A confirmation message appears, asking you to confirm the deletion.

4. Click the **Yes** button.

5. On the **Edit Home Page Section** window, click **OK**.

   The Home Page no longer displays the link.

# Start Page

## What is a Start Page?

A *start page* is any page in the Meridium APM Framework that you have configured to appear automatically when you first log in. For example, if you use the Production Loss Accounting (PLA) module frequently, you might want to set the **PLA Start Page** as your start page so that it would appear automatically as soon as you logged in.

After you set a start page, you can access it from any page in the application by clicking the **My Start Page** button the Meridium APM Framework toolbar.

Note that a start page is not the same thing as the Meridium APM Framework Home Page. Until you set a custom start page, the Home Page will be set *automatically* as your start page, but you can change your start page to any other page at any time. You can then navigate back to that start page or the Home Page as needed.

If desired, you can reset your start page to the Home Page so that whenever you click the **My Start Page** button, the Home Page will appear.

## Setting Your Start Page

Most pages throughout the Meridium APM Framework application can be set as your start page. In some cases, particularly in cases where you are viewing unsaved data or objects (i.e., a new, unsaved query), the **Set This Page as My Start Page** option may not be available. If you attempt to set a page as your start page and are unable to do so, simply navigate to a different page, and try again.

When you set a page as your start page, accessing the page through the **My Start Page** button will exhibit the same behavior as if you accessed the page through some other access point. The behavior may not be exactly the same as when you set the page as your start page. For example, when you access the **Search** page, the search type is set by default to the *last* search that you used. If you set the **Search** page as your start page, when you access it via the **My Start Page** button, it will have the *same* behavior (i.e., the search type is set by default to the last search that you used). This may or may not be the same search type that you were using when you set the **Search** page as your start pages.

**To set any page as your start page:**

1.  While viewing the page that you want to set as your start page, on the Meridium APM Framework toolbar, click the down arrow on the **My Start Page** button, and then click **Set This Page as My Start Page**.

    A message appears, asking if you want to set the current page as your start page.

2.  Click the **Yes** button.

    The current page is set as your start page.

## Accessing Your Start Page from Another Page

**To access your start page from another page:**

*   On the Meridium APM Framework toolbar, click the **My Start Page** button.

    -or-

- In the Meridium APM Framework, press the **Ctrl+H** keys on your keyboard.

  Your start page appears.

## Resetting Your Start Page to the Home Page

If you have set a start page, you can remove that start page setting by:

- Setting a different start page. To do so, on the desired page, you would simply need to complete the same steps that you completed for setting the current start page.

  -or-

- Resetting your start page to the Home Page.

The following instructions explain how to reset your start page to the Home Page.

**To remove your start page setting:**

- On the Meridium APM Framework toolbar, click the down arrow on the **My Start Page** button, and then click **Reset to Home Page**.

  A message appears, indicating that your start page has been reset to the Meridium APM Home Page.

# Catalog

## Introduction to the Catalog

The Catalog serves as the warehouse for storing items that you create and save to the Meridium APM database. The Catalog is organized as a hierarchy of folders that contain items such as queries, graphs, reports, searches, and datasets. You can open any item in the Catalog by navigating through the hierarchy and opening the file.

Within the Catalog, items are grouped into the following types of folders:

- **Personal folders:** Contain items belonging to specific users. When you create an item for your own personal use, you should store it in your Personal folder.

- **Public folders:** Contain items that can be accessed by any users with the necessary folder permissions. When you create items that you want to share with other users, you should save it to a Public folder.

- **Baseline folders:** Contain items that are provided as baseline Meridium APM content. Baseline folders and items are visible only to Super Users, members of the MI Catalog Administrator Security Group, and members of the MI Power User Role Security Group. Items in Baseline folders are read-only, and you cannot add items to or delete items from these folders. The Baseline folders are meant to provide a static view of the Catalog items that were shipped with the baseline product. If you ever need to revert to the baseline Catalog folder structure, you can copy items from the Baseline folder to Public folders.

## Accessing the Catalog

The Catalog is accessible via the **File** menu, the **Tools** menu, and the Meridium APM Framework toolbar.

**To access the Catalog:**

- On the Meridium APM Framework main menu, click **File**, and then click **Catalog**.

  -or-

- On the Meridium APM Framework main menu, click **Tools**, and then click **Catalog**.

  -or-

- On the Meridium APM Framework toolbar, click the **Catalog** button.

  

  The **Catalog** page appears.
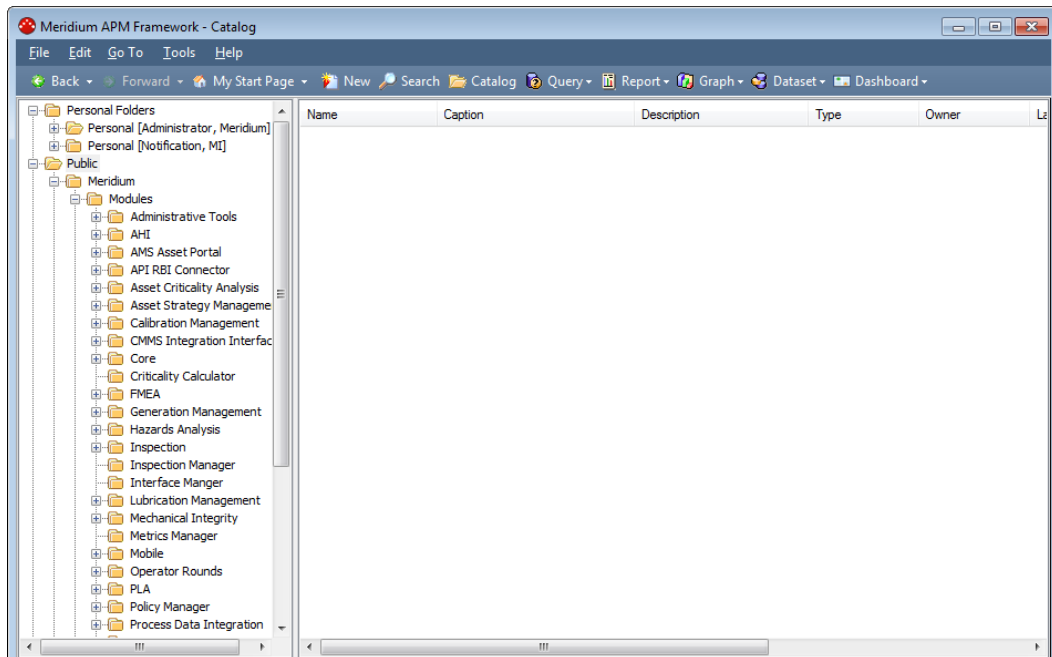
The Catalog is also accessible through other, less direct methods, such as when you need to select a Catalog item to complete a certain workflow. For example, the Catalog appears when you save items and when you open certain items, such as queries. In most cases, if you access the Catalog through a less direct method, the folder that you last accessed via the *Catalog page* will be selected by default.

## Overview of the Catalog and Catalog Hierarchy

When you first open the Catalog, you will see at least your Personal folder, which is expanded by default.

- If you are a Super User, a member of the MI Catalog Administrator Security Group, or a member of the MI Power User Role Security Group, you will see Personal folders belonging to other users.

- If you are a Super User, a member of the MI Catalog Administrator Security Group, a member of the MI Power User Role Security Group, or a non-Super User who has been given explicit permissions to the Public folder, you will see the **Public** folder and its subfolders.

- If you are a Super User, a member of the MI Catalog Administrator Security Group, or a member of the MI Power User Role Security Group, you will see the **Baseline** folder and its subfolders.

The Catalog hierarchy appears in the left pane of the **Catalog** page. You can expand and collapse the hierarchy by double-clicking the folders or by clicking the plus (+) and minus (-) signs that appear to the left of the folder names. A plus sign means that a folder is not expanded and contains subfolders. A minus sign indicates that a folder is fully expanded. The absence of a plus or minus sign indicates that a folder does not contain any subfolders. When you select a folder, the items in that folder appear in the right pane of the page.
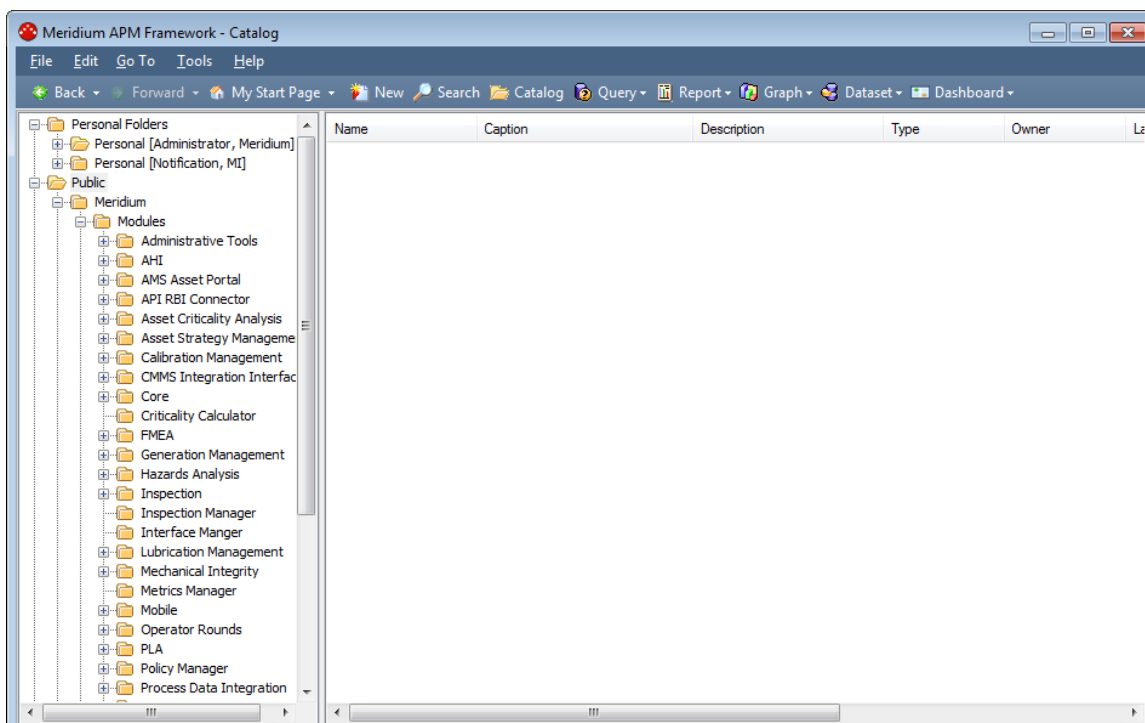


Catalog *items* are objects such as queries, reports, graphs, and datasets that are stored in the Meridium APM database. Catalog items are displayed on the right side of the screen when you select a folder on left. For each item, the following columns of information appears:

- **Name**

- **Caption**

- **Description**

- **Type**

- **Owner**

- **Last Update By**

- **Last Update Date**

- **Created By**

- **Created Date**

This information is stored in and can be managed via the Catalog item properties. Catalog items are sorted alphanumerically by default. You can sort the items by a different column as desired.

# About the Shortcut Menu

The shortcut menu in the Catalog provides options that you can use to perform tasks related to Catalog folders and Catalog items. You can access the shortcut menu by right-clicking:

- A folder in the Catalog hierarchy.

- A Catalog item in the right pane.

- Anywhere other than a specific Catalog item in the right pane. Only one option, **Search**, is enabled when you access the shortcut menu in this way.

The following options are available on the shortcut menu in the Catalog:

- **Create:** Displays the **Create Folder** dialog box, where you can create a new folder in the Catalog hierarchy. This option appears only when you right-click a folder in the Catalog hierarchy.

- **Open:** Opens the selected folder or Catalog item. This option appears only when you right-click a Catalog item.

- **Search:** Displays the **Catalog Search** dialog box, where you can search for items in the Catalog. This option is available to you regardless of how you access the shortcut menu in the Catalog.

- **Copy:** Copies the selected folder or Catalog item. This option is available when you right-click a folder or Catalog item.

- **Paste:** Pastes a copy of the selected folder or Catalog item. This option is available when you right-click a folder or Catalog item.

- **Delete:** Displays a confirmation message and then deletes the selected folder or Catalog item. This option is available when you right-click a folder or Catalog item.

- **Rename:** Displays the folder or Catalog item name in a text box, where you can modify it. This option is available when you right-click a folder or Catalog item.

  **Note:** The **Rename** option allows you to change the *name* of Catalog items only. If you want to modify a Catalog item caption, including any translations defined for it, you can do so via the **Catalog Item Properties** dialog box.

- **Send To:** Displays a submenu of options that let you provide a link to the current page, on your desktop (create shortcut), in an email message, or on a Home Page. This option only appears only when you right-click a Catalog item.

- **Properties:** Displays the **Folder Properties** dialog box (if you selected a Catalog folder) or the **Catalog Item Properties** dialog box (if you selected a Catalog item), where you can view and modify the properties of the selected item.

If you select multiple items using the Ctrl or Shift key, while all options that apply to a single item appear on the shortcut menu, only the **Copy**, **Paste**, **Delete**, and **Send To** options can be applied to multiple items.

# Catalog Folders

**Types of Folders Used in the Catalog**

**Personal Folders**

Each Security User has a Personal folder, which can be viewed by that user, Super Users, members of the MI Catalog Administrator Security Group, and members of the MI Power User Role Security Group. By default, each Personal folder contains the following subfolders:

- **Datasets**

- **Graphs**

- **Queries**

- **Reports**

- **Searches**

When you first access the Catalog, you will see at least your Personal folder. If you have been given permission to access other folders, those folders will also be displayed in the hierarchy.

**Public Folder**

The Catalog contains a **Public** folder, which contains items that can be shared with multiple users. The **Public** folder and its subfolders have their own permission settings, which determine who can view and modify their contents. If you do not have explicit permissions to access the **Public** folder, it will be unavailable when you access the Catalog. If you have been granted explicit permissions to access the **Public** folder, you will be able to select and expand it to view one or more of the folders and items that are stored within it, as shown in the following image.
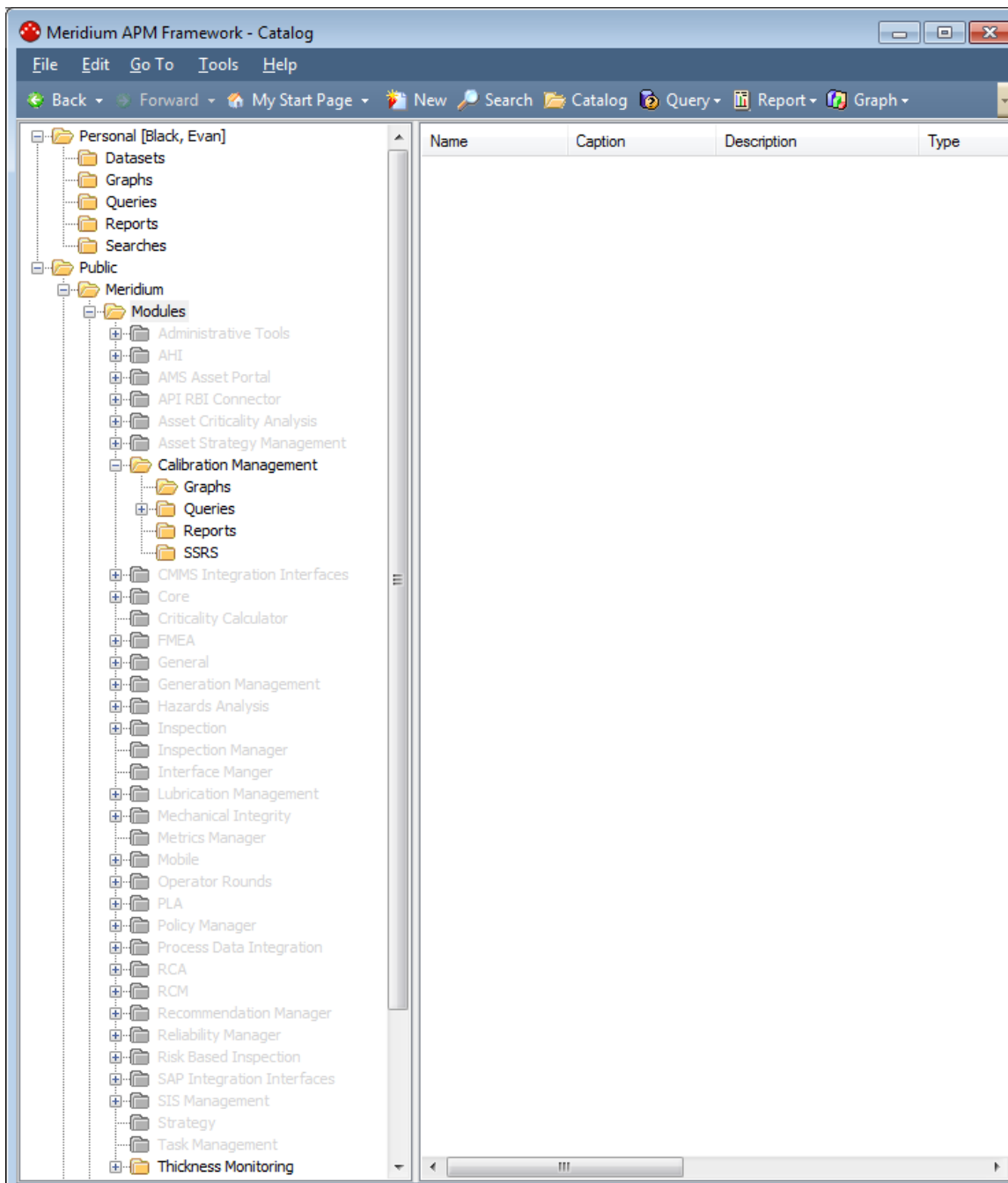
Only the subfolders that you have been granted permission to access will be enabled. All other folders will be disabled.

**Note:** While you may not be able to access the **Public** folder through the Catalog itself, all users will be able to open and execute Catalog items that are stored within the Public folder and that are used within module-specific workflows or accessible through hyperlinks. In other words, even if a folder appears disabled when you view it in the Catalog, you may be able to access the items within that folder if they are involved in a workflow or hyperlink.

Note that the **Public** folder contains a **Rules Library** folder, which mimics the Rules Library folder and contents as it is set up in the Configuration Manager. *Only administrative users should be allowed to view this folder in the Catalog.* Be sure to set up the Catalog folder permissions to restrict access to the Rules Library folder, as appropriate.

## Baseline Folder

The Catalog contains a **Baseline** folder, which contains the baseline Catalog items that are provided by Meridium, Inc.. *Baseline* Catalog items are items that are included in the *baseline* Meridium APM database. In other words, baseline items are those that will exist in your system before any customization has been performed. In some cases, the baseline items must be modified before they can be used effectively within your system. In other cases, you can simply use the Catalog item as it is delivered without modifying it at all.

**Note:** The **Rules Library** folder exists in the **Public** folder but not the **Baseline** folder. The **Baseline** folder is visible only to Super Users, members of the MI Catalog Administrator Security Group, and members of the MI Power User Role Security Group.

Whenever new baseline items are added to the Catalog as part of a first-time installation, an upgrade, or the addition of an add-on package, the items are added in two places: a subfolder within the **Baseline** folder and a corresponding subfolder in the **Public** folder. Wherever Meridium APM rules references the Catalog item, the rules reference the copy in the Public folder.

This means that if you need to customize any of the baseline content, you will need to modify the item in the *Public* folder. Items in a Baseline folder can be copied to Personal or Public folders and modified there but cannot be modified within the Baseline folder itself. If you ever need to restore the original, baseline functionality, you can simply copy the item from the Baseline folder and paste it into the Public folder.

Whenever you upgrade to a new version of Meridium APM, new baseline Catalog items will be delivered both to the Baseline folder *and* to the Public folder. If the new version of Meridium APM includes baseline Catalog items that have

been modified by Meridium, Inc., the items in the Baseline folder will be overwritten with the modified content. If you have customized the corresponding item in the Public folder, Meridium APM rule logic will not modify the Public folder item. To use the new, baseline functionality, you will need to copy the updated item from the Baseline folder to the Public folder manually.

**Note:** If you have customized an item in the Public folder and the item is *removed* from the Baseline folder during an upgrade, your customized item *will also get removed* from the Public folder if it has the same name as the Baseline item. This means that if you want to retain changes to customized content that Meridium, Inc. has removed in a newer version, before you upgrade to that version, you should export the item so that you can import it after the upgrade is complete.

For example, assume that you have customized the Enterprise Analysis List query in the Catalog folder \\Public\Meridium\Modules\RCM. Now assume that you are upgrading to a new version of Meridium APM in which we provide an updated version of the baseline Enterprise Analysis List query. When you upgrade, the old baseline Enterprise Analysis List query in the Catalog folder \\Baseline\Meridium\Modules\RCM will be overwritten with the updated Enterprise Analysis List query. Your customized query in the Catalog folder \\Public\Meridium\Modules\RCM will, however, not be updated.

**Note:** A deletion is interpreted by Meridium APM rule logic as a form of customization. This means that if you delete a Catalog item from the Public folder, that item will not be added back to the Public folder by an upgrade.

### Viewing and Modifying Folder Properties

Folder properties store information about a folder, such as the date the folder was created, the name of the user who created it, and information about when the folder was last modified. Any user who has at least View/Execute permissions to a Public folder or subfolder can view the folder properties. Only Super Users, members of the MI Catalog Administrator Security Group, and members of the MI Power User Role Security Group can modify Public folder properties.

**To view or modify the properties of a folder:**

1. In the Meridium APM Framework, in the Catalog hierarchy, navigate to the folder whose properties you want to view.

2. Right-click the folder, and click **Properties**.

The **Folder Properties** dialog box appears, displaying also a **Permissions** tab so that you can view and modify the user permissions for that folder. This tab is visible only to Super Users, members of the MI Catalog Administrator Security Group, and members of the MI Power User Role Security Group.
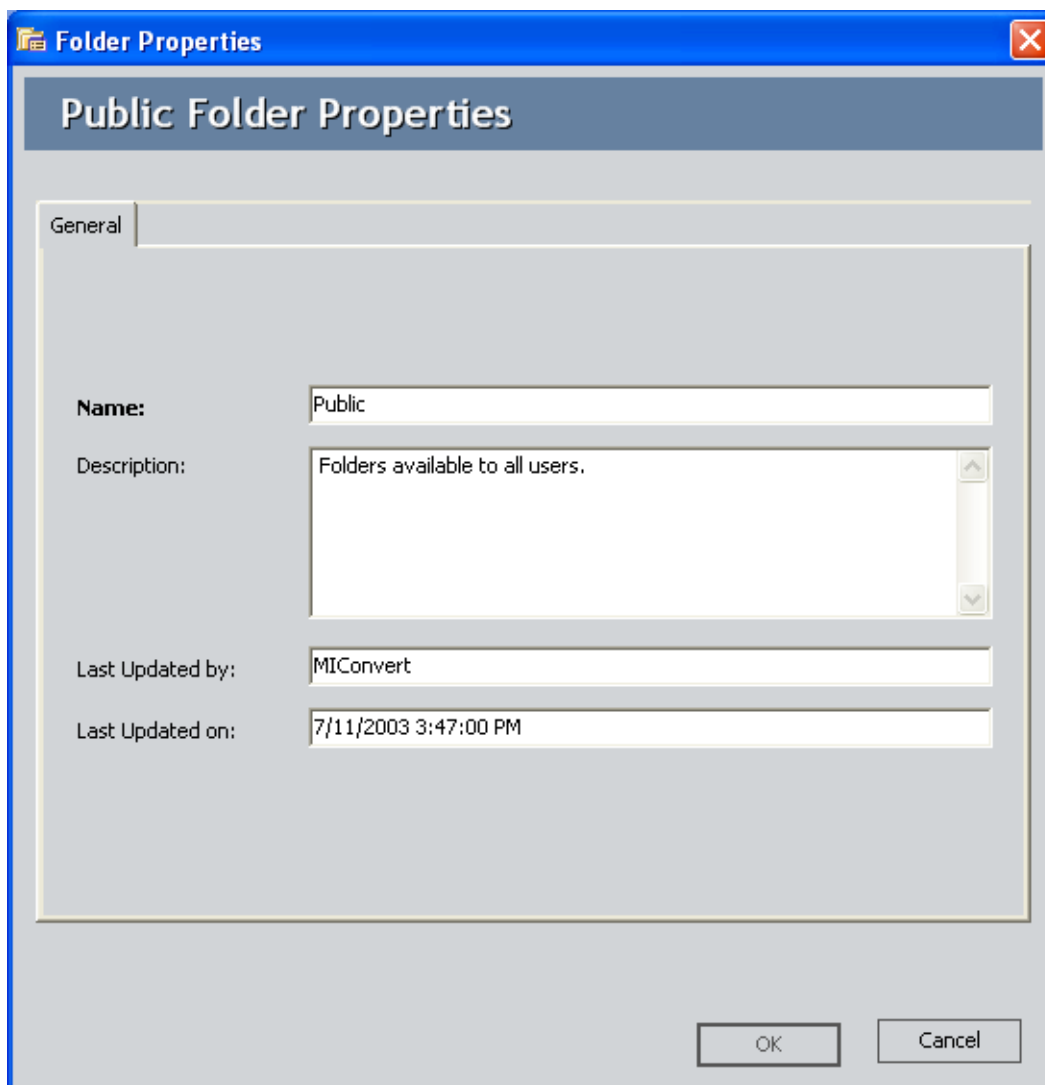


The **Permissions** tab does not appear on the **Folder Properties** dialog box for Personal folders.

3. If desired, modify the **Name** and **Description**. The **Last Updated** fields are read-only and are updated automatically when changes are made to the folder.

**Note: You cannot modify the name and description of Baseline folders.**

4. Click **OK**.

Your changes are saved, and the **Folder Properties** dialog box closes.

**Public Folder Permissions**

**Overview of Public Folder Permissions**

Introduction to Public Folder Permissions

Security permissions for the Public folder and its subfolders determine who has the ability to view and modify those folders and their contents. You can set permissions for the Public folder on the **Permissions** tab of the **Folder Properties** window.
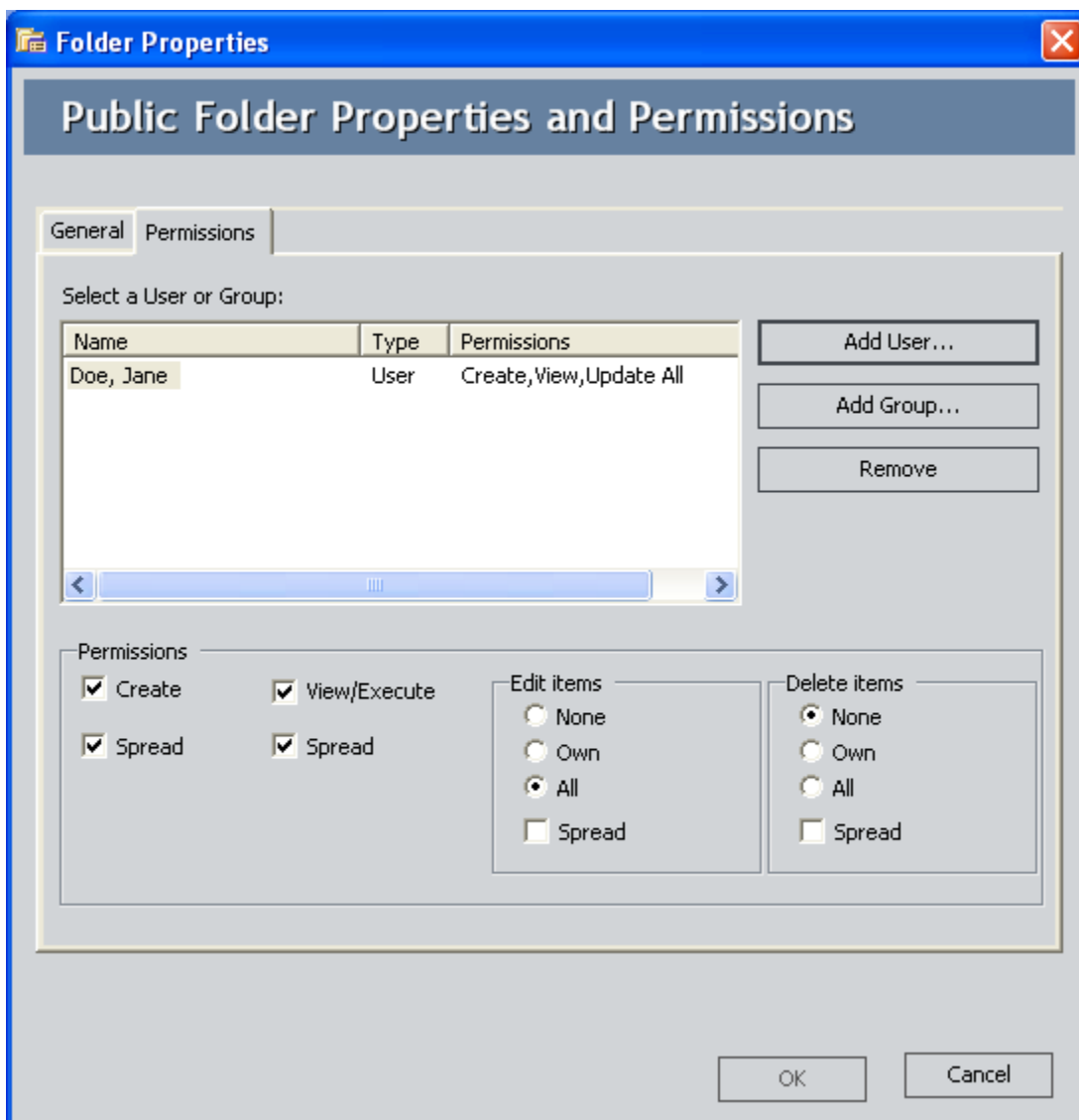
Only Super Users, members of the MI Catalog Administrator Security Group, and members of the MI Power User Role Security Group can see the **Permissions** tab and, therefore, manage the permissions for the Public folder and subfolders.

The list on the **Permissions** tab shows which Security Users and Security Groups already have access to a given Public folder. It does not, however, list Super Users, members of the MI Catalog Administrator Security Group, or members of the MI Power User Role Security Group because permission to Public folders is implied for those users. In addition, all Security Users are granted inherent *execute* permissions on the Public folder and subfolders. These permissions are not displayed on the **Permissions** tab. All other folder permissions must be set explicitly for ALL other Security Users.

Public folder permissions can be set at any level and optionally spread to the subfolders that exist within that folder using the **Spread** check box for the appropriate permission level. Permissions that have been spread from a higher-level folder will not appear in the Select a User or Group list when you access the **Folder Properties** window for the subfolder.

About Automatic Public Folder Permissions

All Security Users automatically have inherent *execute* permissions for all Public Catalog folders and its subfolders. This means that all users can execute Public Catalog items as part of module-specific workflows and through hyperlinks without being granted explicit permissions to the Public folder and subfolders.

Note that explicit View/Execute permissions must be granted to any Security User who should be allowed to access a Public folder and its items through the Catalog itself. The Public folder will not be accessible to users who have only inherent execute permissions. In other words, while the user may be able to open an item using a hyperlink or other interface control, that user will not be able to open the item through the Catalog.

**Note:** Inherent execute permissions are not displayed on the **Permissions** tab of the **Folder Properties** window.

About Setting Folder Permissions

Besides inherent execute permissions and permissions that are granted Super Users, members of the MI Catalog Administrator Security Group, or members of the MI Power User Role Security Group, all other Public Catalog folder permissions must be granted explicitly to Security Users and Security Groups. The following permissions levels are available and correspond to options that appear on the **Permissions** tab of the **Folder Properties** window:

- **Create**: Allows a Security User or Security Group to create items in the folder.

  **Note:** Granting Create permissions will allow a Security User or Security Group to create only Catalog *items*, not Catalog folders. Only Super Users or members of the MI Catalog Administrator Security Group can create subfolders within the Public folder.

- **View/Execute:** Allows a Security User or Security Group to view or execute items within the folder.

- **Edit Items section:** Determines a Security User or Security Group's ability to modify items within a given folder. The following options are available for this permission level:

  - **None:** Restricts a Security User or Security Group from modifying any items within the folder.

  - **Own:** Lets a Security User or Security Group modify only the items they own.

    > **Hint:** By default, the Security User who first saved a Catalog item owns it. Ownership can be transferred to another user after the item is saved.

  - **All:** Lets a Security User or Security Group modify all items within a folder, regardless of ownership.

- **Delete Items sections:** Determines a Security User or Security Group's ability to delete items within a given folder. The following options are available for this permission level:

  - **None:** Restricts a Security User or Security Group from deleting any items within the folder.

  - **Own:** Lets a Security User or Security Group delete only the items they own.

  - **All:** Lets a Security User or Security Group delete all item within the folder, regardless of ownership.

Each permission level is represented by options in the **Permissions** area on the **Permissions** tab of the **Folder Properties** window. You will notice that for each set of options, the **Spread** check box is available. Selecting this check box will cause the associated permissions to be inherited by all subfolders of the current folder.

**Setting Public Folder Permissions**

Granting a User Permission to Access the Public Folder

You can use the following instructions to grant a Security User permission to access a Public folder or subfolder. Note that if you want to grant permissions to a subfolder, the Security User must also have permissions on the folder to

which that subfolder belongs. For example, a Security User who has View permissions on a subfolder will be able to view that folder only if View permissions have also been granted on the folder in which the subfolder is stored.

**To allow a Security User access to the Public folder:**

1. In the Meridium APM Framework, in the Catalog, right-click the Public folder for which you want to set permissions, and click **Properties**.

   The **Folder Properties** window appears.

2. Click the **Permissions** tab.

3. Click the **Add User** button.

   The **Users** dialog box appears.
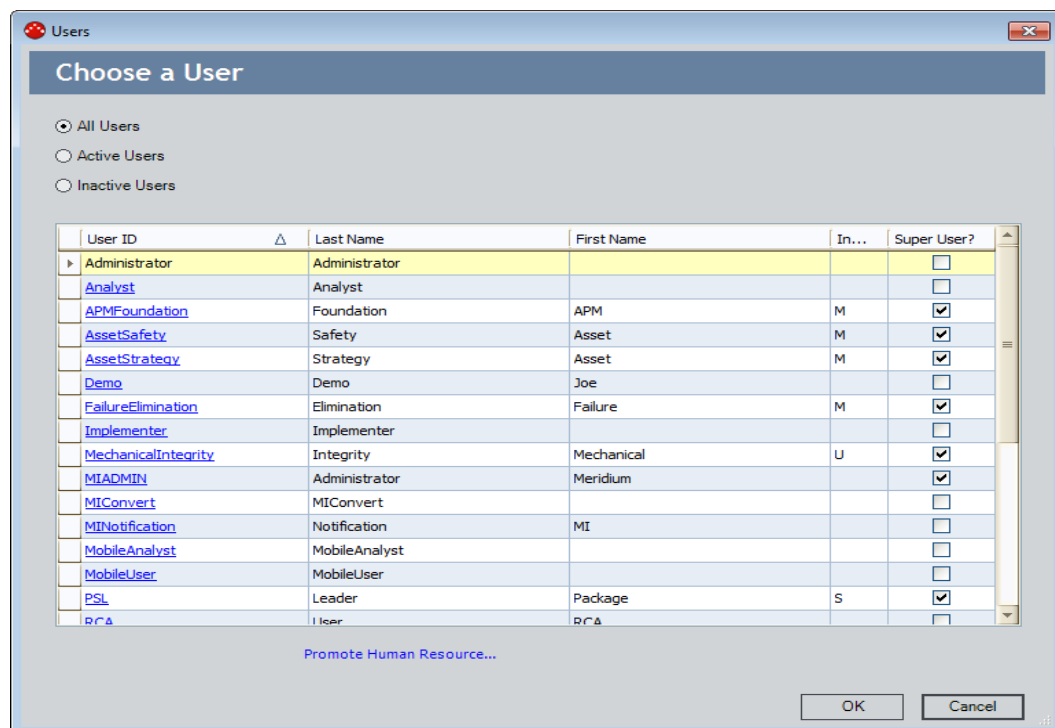


4. Click the User ID of the user to whom you want to grant access to the Public folder.

   The user is added to the list on the **Folder Properties** dialog box.

5.  Set the desired permissions for the user, and click **OK**.

    The permission settings are saved.

Granting a Group Permission to Access the Public Folder

You can use the following instructions to grant a Security Group permission to access a Public folder or subfolder. Note that if you want to grant permissions to a subfolder, the Security Group must also have permissions on the main folder. For example, a Security Group who has View permissions on a subfolder will be able to view that folder only if View permissions have also been granted on the folder in which the subfolder is stored.

**To allow a Security Group access to the Public folder:**

1.  In the Meridium APM Framework, in the Catalog, right-click the Public folder for which you want to set permissions, and click **Properties**.

    The **Folder Properties** dialog box appears.

2.  Click the **Permissions** tab.

3.  Click the **Add Group** button.

    The **Select a Group** dialog box appears.
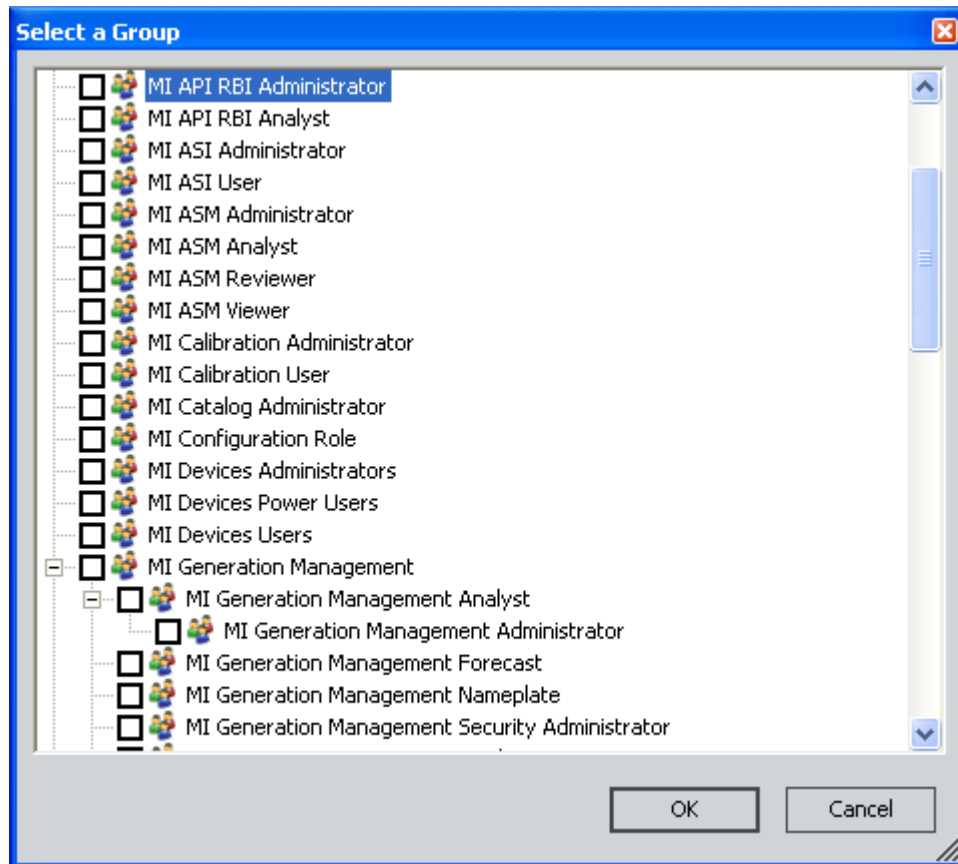
4. Select the check box next to the group(s) to which you want to grant access to the Public folder, and click **OK**.

   The groups appear in the list on the **Folder Properties** dialog box.

5. Set the permissions for the group(s), and click **OK**.

   The permission settings are saved.

Modifying Permissions for a User or Group That Already Has Access to a Folder

**To modify the permissions for a Security User or Security Group that already has access to a Public folder:**

1. In the Meridium APM Framework, in the Catalog, right-click the Public folder for which you want to set permissions, and click **Properties**.

The **Folder Properties** window appears.

2. Click the **Permissions** tab.

3. In the **Select a User or Group** list, highlight the Security User or Security Group whose permissions you want to modify.

4. In the **Permissions** section, select the options which you want to apply to the selected Security User or Security Group.

5. Click **OK**.

The permission settings are saved.

> **Note:** If you selected the **Spread** check box for any of the permissions, those permissions *are spread to the subfolders* in the selected folder, however, when you view the **Folder Properties** dialog box for a subfolder of the selected folder, the name of the user or group whose permissions were spread will not appear in the list.

Revoking Access to the Public Folder

> **Note:** You can remove a Security User or Group from the list of Public folder permissions only if you are a Super User, a member of the MI Catalog Administrator Security Group, or a member of the MI Power User Role Security Group.

**To remove a Security User or Security Group from the list of Public folder permissions:**

1. In the Meridium APM Framework, in the Catalog, right-click the Public folder for which you want to set permissions, and click **Properties**.

The **Folder Properties** dialog box appears.

2. Click the **Permissions** tab.

3. Highlight the Security User or Security Group that you want to remove, and click the **Remove** button.

The Security User or Security Group is removed from the list.

4. Click **OK**.

The deletion is saved.

## Creating Folders in the Catalog

Your privileges determine your ability to create new folders. With the lowest level of privileges, you will be able to create a folder only in your own Personal folder. With the appropriate permissions and user status (e.g., Super User), you can also create new folders in other Personal folders and in the **Public** folder. Note that you cannot create folders in the **Baseline** folder.

**To create a folder in the Catalog:**

1. In the Meridium APM Framework, in the Catalog hierarchy, navigate to the folder under which you want to add the new folder.

2. Right-click the folder, and then click **Create.**

The **Create Folder** dialog box appears.
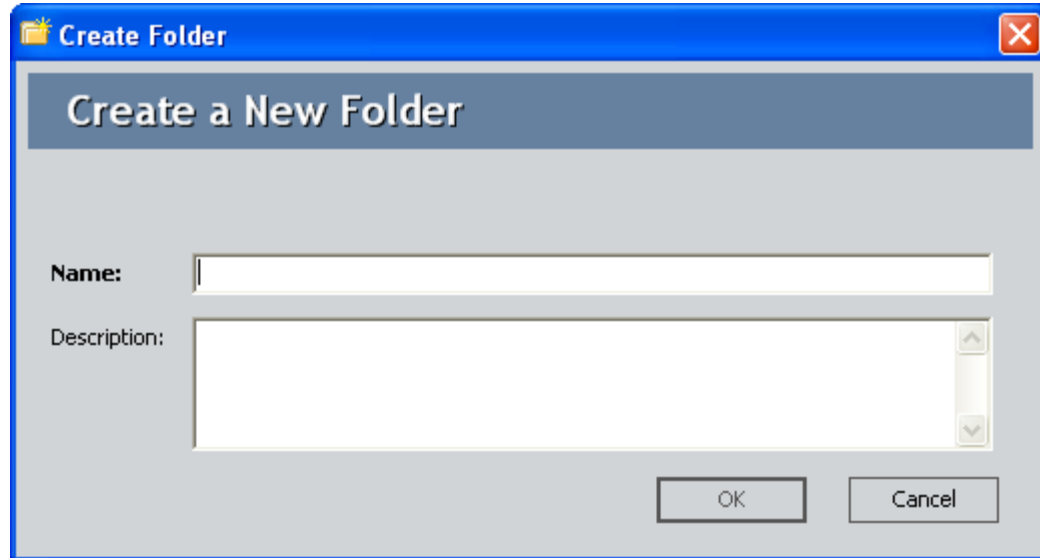


3. In the **Name** text box, type a name for the folder.

> **Note:** Catalog folder names must be unique. Additionally, Catalog folder names are case *insensitive*. This means that you would not be able to create a new subfolder within your Personal folder named **MY QUERIES** if another subfolder named **My queries** already existed within your Personal folder.

4. In the **Description** text box, type a description of the new folder.

5. Click **OK**.

The new folder is saved and appears in the Catalog.

## Moving Folders

You can reorganize folders in the Catalog as desired. Note that when you move a folder, all the subfolders will be moved with it. Note, however, that you cannot move folders in the **Baseline** folder.

**To move a folder in the Catalog:**

1. In the Meridium APM Framework, in the Catalog hierarchy, navigate to the folder that you want to move.

2. Click the folder, drag it to the desired destination, and then release the mouse button.

The Catalog folder appears in the new location.

## Copying Folders

If desired, you can copy a folder and its contents and paste it under another folder. Note that subfolders can be copied and pasted only within the same Personal or Public folder. Folders cannot be copied and pasted between Personal and Public folders. Baseline folders cannot be copied, but individual items within the Baseline folders can be copied.

> **Note:** Folder names must be unique within the root folder. To copy a folder with the same name of one that already exists in the destination folder, you must first rename one of the folders.

**To copy a folder:**

1.  In the Meridium APM Framework, in the Catalog hierarchy, navigate to the folder that you want to copy.

2.  Right-click the folder, and click **Copy**.

3.  Navigate to the folder in which you want to paste the copied folder.

4.  Right-click the folder, and click **Paste**.

    The copied folder and its contents are pasted to the selected folder.

**Renaming Folders**

Note that you can rename Personal or Public folders only. You cannot rename Baseline folders.

**To change the name of a folder:**

1.  In the Meridium APM Framework, in the Catalog hierarchy, right-click the folder that you want to rename, and click **Rename**.

    The folder name becomes editable.

2.  Edit the name as desired. The folder name is case-insensitive and must be unique within the root folder. This means that you would not be able to rename a subfolder within your Personal folder as **MY QUERIES** if another subfolder named **My queries** already existed within your Personal folder.

3.  Press Enter, or click anywhere else on the screen.

    Your changes are saved.

**Deleting Folders**

Deleting a folder will remove the folder and its sub-folders from the Catalog. You can delete Personal and Public folders only. You cannot delete Baseline folders.

**To delete a folder from the Catalog:**

1. In the Meridium APM Framework, in the Catalog hierarchy, right-click the folder that you want to delete, and click **Delete**.

   A message appears, asking you to confirm the deletion.

2. Click the **Yes** button.

   The folder and all its subfolders are deleted from the Catalog.

# Catalog Items

**What Are Catalog Items?**

Catalog items are objects that are stored in the Meridium APM Catalog and can be accessed through various interfaces in the Meridium APM Framework. For example, when you create a query and save it, it is stored as a Meridium APM Catalog item so that you can open it again later to view the results or modify the query design.

The following table provides a list of the item types that are supported in the Meridium APM Catalog. Each item type has a corresponding icon, which is used to identify items of that type on the **Catalog** page.

| Item Type | Icon |
|---|---|
| Dashboard | |
| Dataset | |
| Explorer | |
| Graph | |
| Metric View | |
| Query | |
| Report | |
| Rule Project | |
| Search | |

**About Saving Items to the Catalog**

In the Meridium APM Framework application, you can create various types of items, such as queries, graphs, reports, searches, and datasets. As you create and modify these items, you can save them to the Catalog.

You will know that you are allowed to save an item to the Catalog when the **Save** and **Save As** options becomes enabled on a task menu. For example, the following figure shows the **Common Tasks** menu for a graph, where the **Save** and **Save As** commands are enabled.
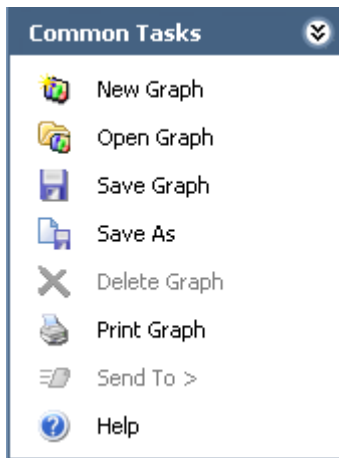


In addition, when you are allowed to save the current item, the **Save** and **Save As** commands will become enabled on the **File** menu.

**Opening Catalog Items**

**To open an item in the Catalog:**

1. In the Meridium APM Framework, in the Catalog, expand the available folders until you find the folder in which the item is stored.

2. Click the folder.

   The items stored in that folder appear in the right pane of the page.

3. Double-click the item that you want to open.

   -or-

Right-click the item, and click **Open**.

The item opens.

## Copying Items

You can copy any item in the Catalog to another folder in the Catalog. Note that within a Catalog folder, all the item names must be unique. If you want to copy to one Catalog folder an item with the same name as an item that already exists in that folder, you will need to rename the item. Note that you can copy items from the Baseline folder and paste them into Personal and Public folders, but you cannot paste items into the Baseline folder.

**Note:** You should not copy and paste items to or from the Rules Library folder. This folder is meant for viewing purposes only.

**To copy an item from one folder to another:**

1.  In the Meridium APM Framework, in the Catalog, expand the Catalog hierarchy until you find the item that you want to copy.

2.  Right-click the item, and click **Copy**.

3.  In the Catalog hierarchy, navigate to the folder in which you want to paste the item.

4.  Right-click the folder, and click **Paste**.

    A copy of the item is pasted into the folder.

## Moving Catalog Items

**Note:** You cannot move an item to a Baseline folder.

**To move a Catalog item:**

-   In the Meridium APM Framework, in the Catalog, click the item that you want to move, drag it to the desired location, and then release the mouse button.

    The Catalog item appears in the new location.

## Renaming Items

You can rename any item in a Personal or Public folder in the Catalog. Note that within a Catalog folder, item names must be unique. If you rename an item, you must choose a name that is not already being used by another item in the same folder. If an item name uses one case construction, you cannot rename another item within the same folder using the same name with a different case construction.

The instructions in this topic provide information on changing the name of a Catalog item only. If you want to modify the caption of a Catalog item, you can do so via the **Catalog Item Properties** dialog box, where you can also modify the Catalog item name.

**Note:** Renaming an item from the Catalog will cause any hyperlinks that use the old name to be non-functional. You will need to modify these links manually to use the new name.

**To rename an item:**

1. In the Meridium APM Framework, in the Catalog, right-click the item that you want to rename, and click **Rename**.

   The item name becomes editable.

2. Edit the name as desired. The name must be unique within the folder.

3. Press Enter, or click anywhere else on the screen.

   Your changes are saved.

## Catalog Search Function

**Searching for Items with the Catalog Search Feature**

**To find an item in the Catalog:**

1. In the Meridium APM Framework, in the Catalog, right-click the folder that you want to search, and click **Search**.

   The **Catalog Search** dialog box appears.
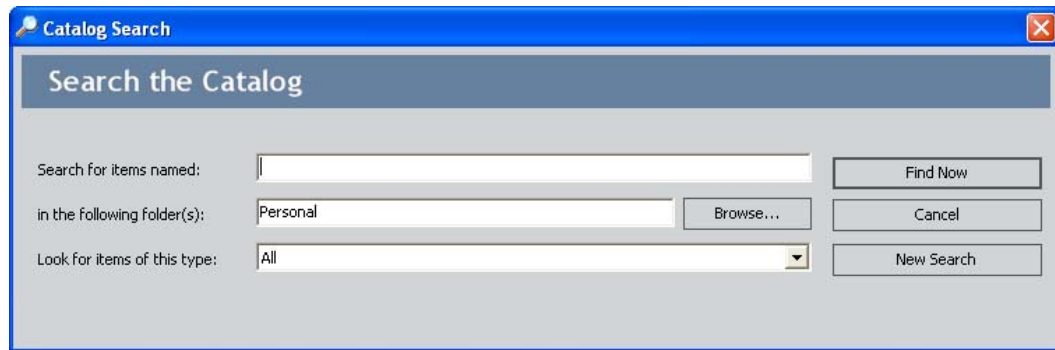
2. In the **Search for items named** text box, type the string that you want to find. The results will include items that contain the search string anywhere in their *name*. For example, if you type **heat**, your results will include items such as **Heat Exchanger Query** and **Air Cooled Heat Exchanger Query**. This field does *not* search Catalog item *captions*.

   **Hint**: You can use wild card characters * (asterisk) and % (percent sign) to find your term at the beginning (e.g., **heat***) or end (e.g., ***heat**) of the item name. Both wild cards work the same way.

3. If you want to include additional folders in your search, click the **Browse** button. The **Select Folders** dialog box will appear where you can select additional folders for your search. Select the check boxes next to the folders that you want to include, and click **OK**.

4.  Click the **Find Now** button.

    Your search results are appended to the **Catalog Search** dialog box.

5.  Double-click any item to open it.

    The item appears on the appropriate interface. For example, if you opened a query, it will appear on the **Query Builder** page.

### Executing a Catalog Search Using a URL

A link constructed from a Catalog Search URL will execute a search of the Catalog and return a list of items that meet the specified search criteria. You

can use a Catalog Search URL to return a list of all items that may reside in various folders instead of having to navigate to or search for them manually. For example, you might configure a URL that searches the Catalog and returns a list of Catalog items that reside in specific folders, providing you with quick access to a set of Catalog items.

Additionally, the Catalog Search URL provides a customized view of the items retrieved by the search. For example, if you use the manual Catalog search feature to find and open a saved query, the query will open on the **Query Builder** page, where it can be modified. If you use the Catalog Search URL to return a list of queries, however, instead of opening in a modifiable mode, any query listed in the output will execute in a view-only mode, where the results will be displayed but the query cannot be modified.

Note that when the query is accessed using the Catalog Search URL, the **Common Tasks** menu allows you only to print the results. You do not have the same options that are available on the standard **Query Builder** page.

You can also use the Catalog Search URL to customize various Meridium APM product pages and the results that appear on them. For example, if you want to create a link on your Home Page that takes you to the **Inspection Manage Documents** page but you want that page to return only saved searches and queries within a certain Personal folder instead of returning all saved searches and queries (as the page is configured to do by Meridium APM), you can configure the link using the **Meridium://Registry/Catalog/Search** URL.

**Item Properties**

**Properties Defined for Each Catalog Item**

The following properties exist for each Catalog item. Some of these properties can be defined when you create a new Catalog item. Others can be managed via the **Catalog Item Properties** dialog box.

- **Name:** The name of the item. Catalog item names are required, must be unique within a given folder, and should not contain the following characters:

  - **%** (percent sign) followed by two hexadecimal digits (0-9, a-f)

  - **[ ]** (square brackets) - applies to queries only

If you create a Catalog item that contains any of these characters and then try to create a hyperlink to that item, when you try to open the item using the link, an error message will be displayed.

- **Caption:** The translatable value that will be displayed to identify the Catalog item in most areas of the Meridium APM products. A default caption is required for all Catalog items. You can click the  button to translate the Catalog item caption for other languages.

- **Description:** A description of the Catalog item.

- **Type:** The type of Catalog item, which is also identified by an icon that appears to the left of the name when you are viewing the item on the **Catalog** page.

- **Owner:** The name of the user who first saved the item. Item ownership is useful for items stored in the Public folder, which can be viewed and modified by multiple users.

- **Last Update By:** The name of the user who last modified the item.

- **Last Update Date:** The date the item was last modified. You can sort the values in this column in descending or ascending chronological order by clicking the column header.

- **Created By:** The name of the user who created the item.

- **Created Date:** The date the item was created. You can sort the values in this column in descending or ascending chronological order by clicking the column header.

### Viewing and Modifying the Properties of an Item

You can view the properties of any Catalog item in any folder. If you have the necessary permissions, you can modify the name, caption, and description of any Catalog item. All other properties are read-only and are updated when various actions are performed against the Catalog item.  Additionally, via the **Catalog Item Properties** dialog box, you can transfer ownership of Catalog items.

**To view or edit the properties of an item:**

1.  In the Meridium APM Framework, in the Catalog, right-click the item whose properties you want to view or update, and then click **Properties**.

    The **Catalog Item Properties** dialog box appears.
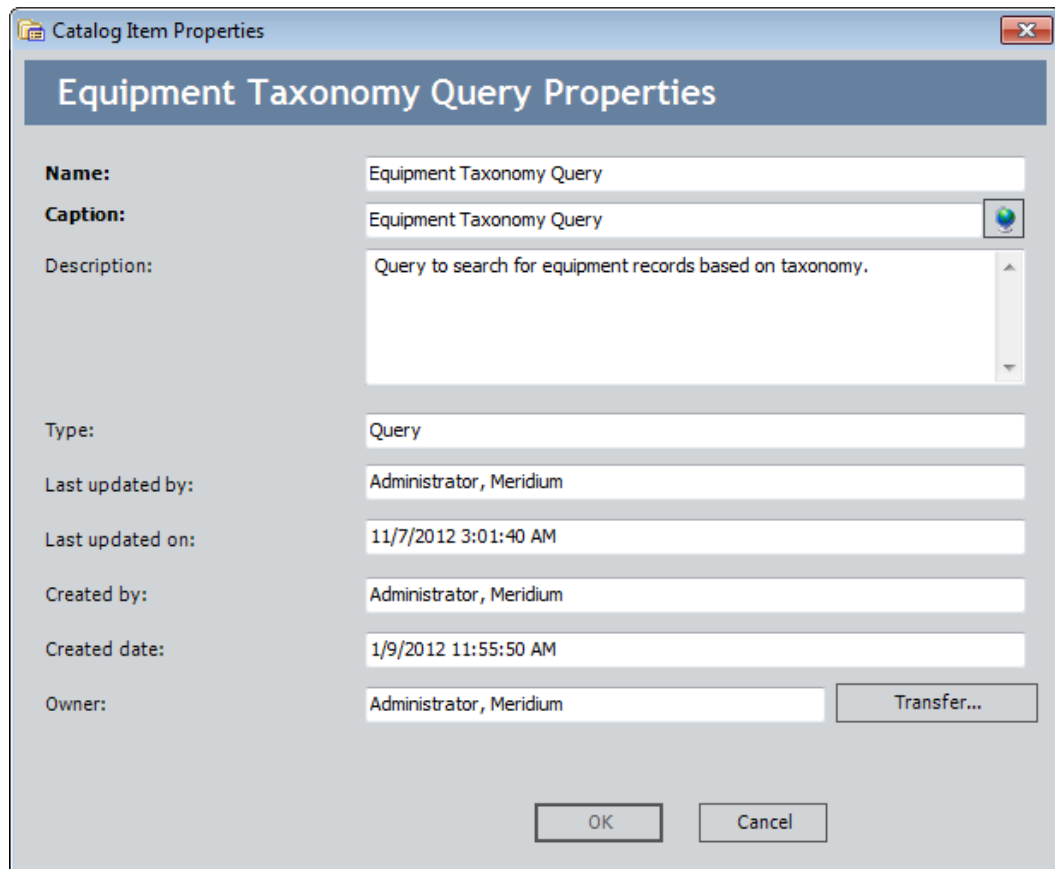


2.  Modify the properties as desired.

3.  Click **OK**.

    Your changes are saved.

**Transferring Ownership of an Item**

All Catalog items have a designated owner. In Personal folders, all items are owned by the user to whom the folder belongs. In the Public folder, which can
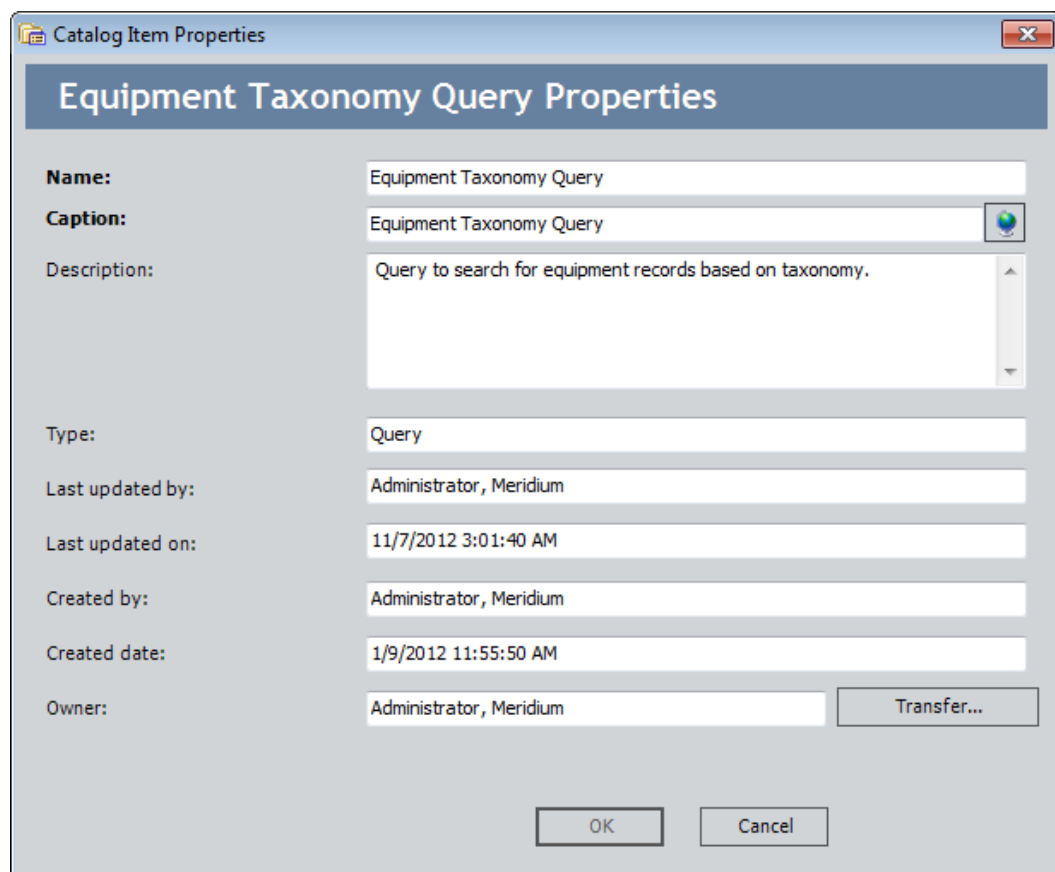
be viewed and modified by multiple users, you can specify the owner of each item.

To transfer ownership of an item in the Public folder, the permissions for the folder in which the item is stored must be set to Own (to transfer ownership of your own items) or All (to transfer ownership of anyone's items).

**To transfer ownership of an item in the Public folder:**

1. In the Meridium APM Framework, in the Catalog, right-click the item whose ownership you want to modify, and click **Properties**.

   The **Catalog Item Properties** dialog box appears.



2. Click the **Transfer** button.

   The **Users** dialog box appears.
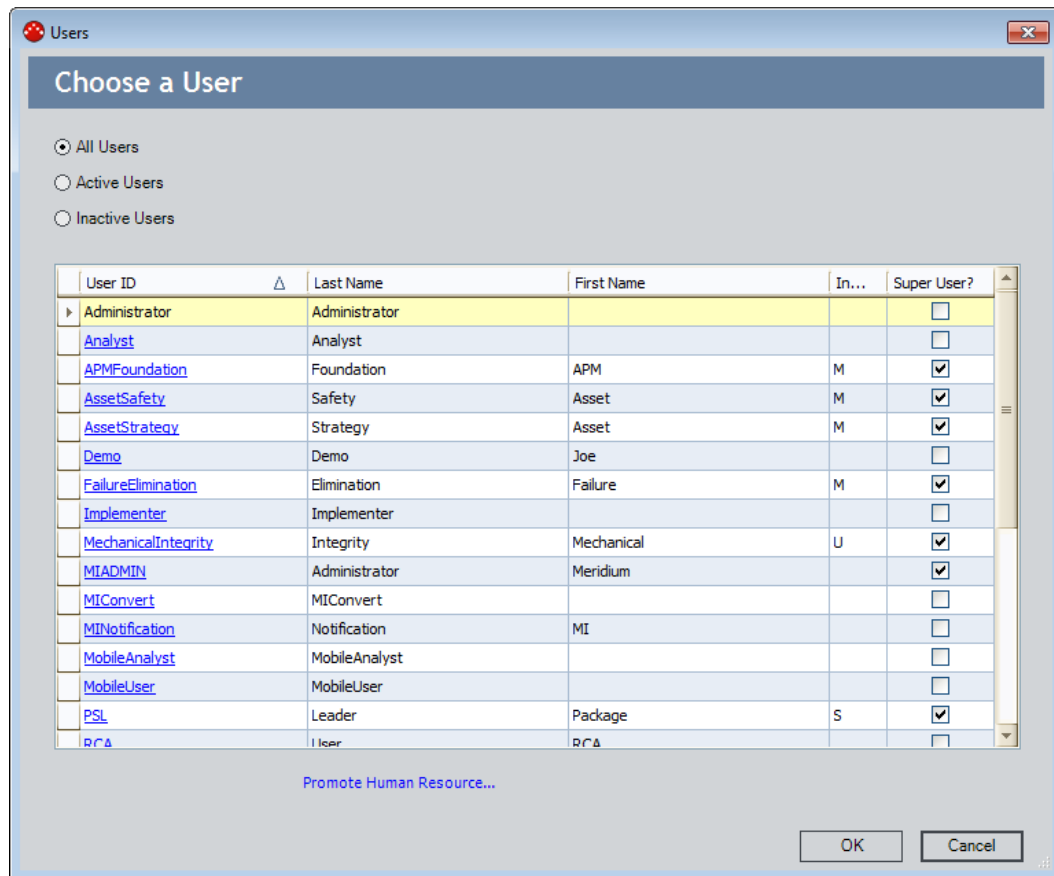
3. Click the User ID of the user who you want to assign as the owner.

   The **Users** dialog box closes, and the **Item Properties** dialog box is updated to reflect the ownership change.

**Deleting Items from the Catalog**

You can permanently remove an item from the database by deleting it from the Catalog.

When deleting Catalog items, note that:

- You cannot delete items in the Baseline folder.

- You cannot delete items that are being used by other items. This means, for example, that if a graph is based on a query, you can delete that query only if you first delete the graph. Similarly, if a report is associated with a specific family in the Configuration Manager, you must

first remove the association to the family via the Configuration Manager application.

**To delete an item from the Catalog:**

1. In the Meridium APM Framework, in the Catalog, navigate to the item that you want to delete.

2. Right-click the item, and click **Delete**.

   A message appears, asking you to confirm the deletion.

3. Click the **Yes** button.

   The item is deleted from the database.

# Catalog URLs

### Specifying Catalog Folder Paths Within URLs

In some URLs, you can use parameters to specify Catalog folder paths, which indicate what will be opened by the URL when someone clicks the link. For example, in a query URL, for the QueryPath parameter, you can define a Catalog folder path to specify which query will be opened when a user clicks the link.

For any URL parameter that accepts a Catalog folder path as a value, you can specify the path to any item for which you know the full path. To specify the Catalog folder path to a Personal folder, you must know the User ID of the Security User to whom the Personal folder belongs. Note that User IDs are not displayed in the Catalog. Instead, Personal folders are labeled using the first and last name of the Security User.

To specify the path to a Public Catalog folder, you would use a construction similar to the following example:

- \\Public\Meridium\Modules\Inspection\Reports\Finding Report

This path points to the Finding Report in the hierarchy represented by the following image.
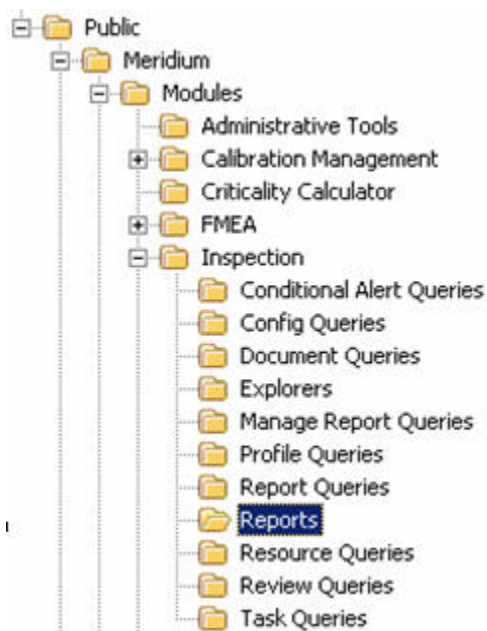


To specify the path to a Personal folder, you would use a construction similar to the following example:

\\Personal [AJDuncan]\Queries\Work Order

In this example, the path points to the Work Order query in the Personal folder that belongs to the Security User whose User ID is AJDuncan. In the following image, you can see that the Personal folder belongs to the Security User Duncan, Amy.
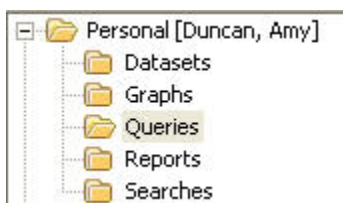


**Note:** We recommend that you not construct URLs that point to items in the Baseline folder. Only a limited number of users will have access to this folder (i.e., only Super Users and members of the MI Catalog Administrator Security Group).

**Using the URL Builder to Create a Link to a Catalog Item**

These instructions assume that you have already accessed the **URL Builder** and have chosen to create an internal Meridium APM URL.

**To complete the steps in the URL Builder to create a link to an item in the Catalog:**

1. In the **URL Builder**, on the **Select URL** screen, select **Registry Catalog**, and click the **Next** button.

   The **Catalog Item** screen appears.
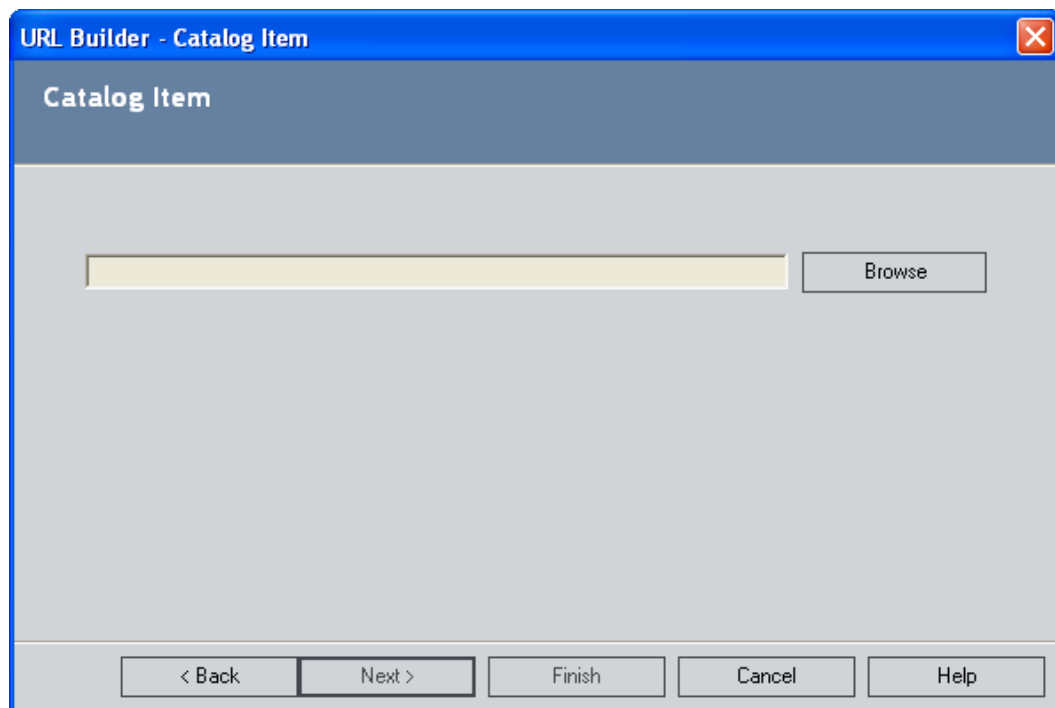


2. Click the **Browse** button.

   The **Open Catalog Item** dialog box appears.
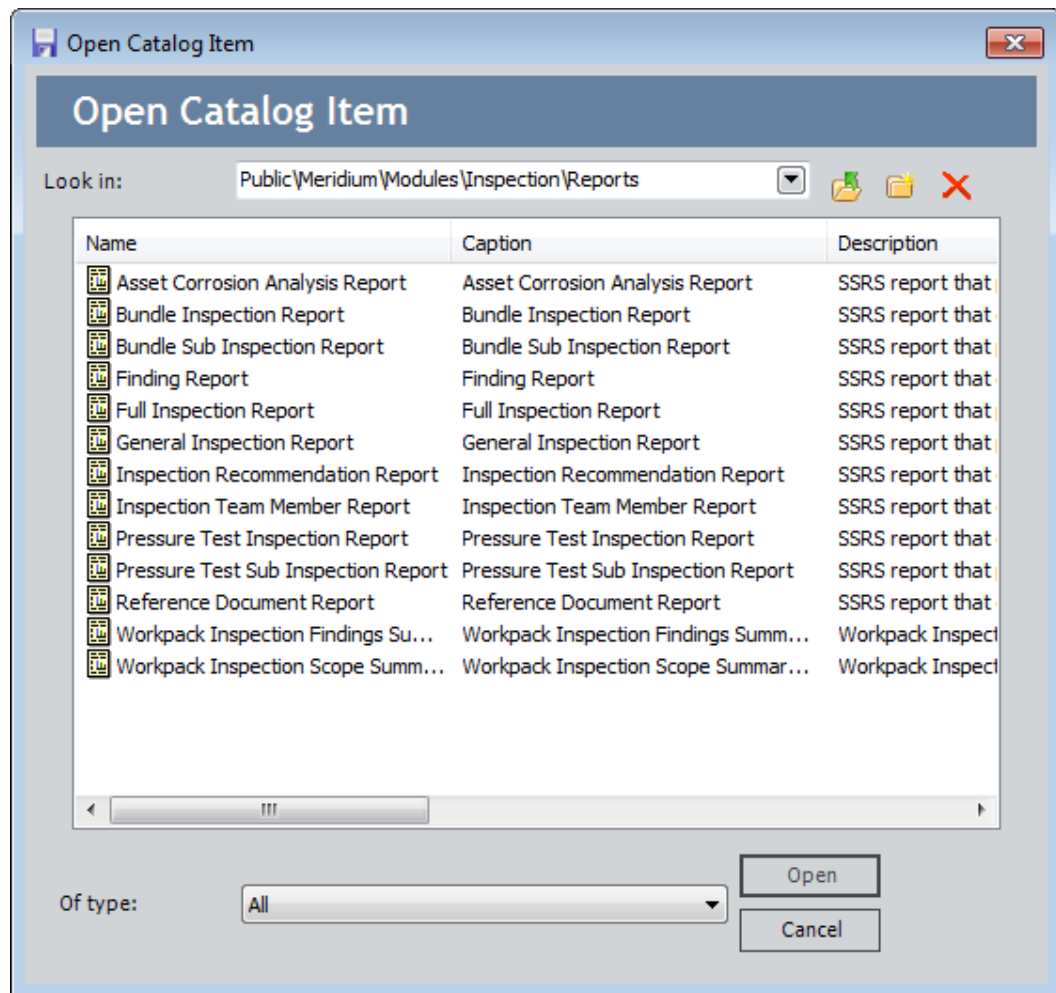
3. Navigate to the desired item, select it, and click the **Open** button.

   The selected search appears in the field on the **Catalog Item** screen.

4. In the **URL Builder**, click the **Finish** button.

   The hyperlink is created.

**Catalog Search URL**

**Parameters for the Catalog Search URL**

The URL for opening the Catalog is **meridium://Registry/Catalog**. The URL path **Registry/Catalog** accepts no parameters. A second address related to the Catalog is **meridium://Registry/Catalog/Search**. It allows you to perform a search of the Catalog and view a list of items retrieved by the search. In the

following table, we list and describe the parameters that are accepted by the **meridium://Registry/Catalog/Search** path. With no parameters, the path will launch the **Catalog Search** page, displaying a link to the **Search** page.

Note that whenever you use the **meridium://Registry/Catalog/Search** URL to open an existing query, if the query contains one or more prompts, you can pass values in for the prompts via the URL.

| Parameter Name | Description | Accepted Value(s) | Notes |
|---|---|---|---|
| ColumnIndicies | Determines which columns you want to display in the grid on the Catalog Search page. | n,n,n,n, Where each *n* is 1 or -1 (negative 1), depending on whether you want the corresponding column to display (1) or not (-1). | By default, four columns are displayed in the grid on the **Catalog Search** page in the following order: **ID**, **Description**, **Path**, and **Type**. The ColumnIndicies parameter lets you specify which of these columns should be hidden. You should use this parameter only if you want to *hide* one or more columns. If you omit this parameter, all columns will be displayed. |
| FolderPaths | Searches for items in a specified folder. | The path(s) to the folder in which you want to search. | When you use the FolderPaths parameter, you should also use the ItemTypes parameter to specify which items you want to retrieve from the specified folder. You can use multiple instances of the FolderPaths parameter, but each occurrence should be used in conjunction with an ItemTypes parameter. |
| ItemTypes | Returns items of the specified type. | QERY (queries) SRCH (searches) DSET (dataset) REPT (report) GRPH (graph) MMVW (Metric View) EXPL (configured explorers) | The ItemsTypes parameter should be used in combination with the FolderPaths parameter to return items of a given type from the specified folder. You can specify multiple values for the ItemTypes parameter, each separated by a comma. |

| Parameter Name | Description | Accepted Value(s) | Notes |
|---|---|---|---|
| Module | Specifies the text that you want to display under the Meridium APM logo in the side bar of the **Catalog Search** page. | The text that you want to appear. | This feature allows you to construct a link and make it appear to be integrated with a particular Meridium APM module. For example, specify Metrics to make the **Catalog Search** page appear to be integrated with other Metrics features. |
| Open | Automatically executes the specified search or query. | The path and file name of the item that you want to open. | Use this parameter when ItemType=QERY or when ItemType=SRCH. |
| QueryMode | Returns the specified type of data for all queries. | EntityData EntityFormattedData RawData | • **EntityData:** Opens a saved, formatted query in unformatted mode. <br> • **EntityFormattedData:** Opens an unformatted query in formatted mode. <br> • **RawData:** Opens a query in unformatted mode, regardless of how it was saved. |
| QueryName | Displays the query name in the user help text. | The name of the query as you want it to appear. | The name you specify will appear on the **Catalog Search** page in the text that appears above the results grid. |
| ShowFinder | Lets you hide the **Finder** link in the results set. | N | This parameter will also accept the value Y to *show* the **Finder** link. If you want to include the link to the **Search** page, however, simply omit this parameter altogether. If you do not include this parameter, the **Finder** link will be displayed by default. |

| Parameter Name | Description | Accepted Value(s) | Notes |
|---|---|---|---|
| SiteMap | Displays the site map that you specify. | <link label>+<URL> | The Site Map will be constructed using the links that you specify. You can specify multiple links, if desired, each separated with a comma. You can insert a + (plus sign) at the end of the URL to disable the last item in the site map (i.e., the portion of the site map that shows the current location). |
| URLTemplate | Forces the hyperlink IDs of all returned results to direct the user to a specified location. | The URL to which each item in the results should be linked. | None |

**Examples of the Catalog Search URL**

- meridium://Registry/Catalog/Search?**Open=Public\Meridium\Modules\I nspection\InspectionQuery**

  Automatically executes the queries in the Catalog folder \\Public\Meridium\Modules\Inspection\InspectionQuery.

- meridium://registry/catalog/search?Open=Public\Meridium\Modules\Insp ection\**Document Queries\All Equipment That Can Have Inspections&Module=Inspection Manager**

  Displays the text **Inspection Manager** under the Meridium APM logo in the side bar of the results.

- meridium://registry/catalog/search?Open=Public\Meridium\Modules\Insp ection\Document Queries\All Equipment That Can Have Inspections&**QueryMode=RawData**

  Returns the specified query in a raw data mode with no formatting.

- meridium://registry/catalog/search?Open=Public\Meridium\Modules\Inspection\Document Queries\All Equipment That Can Have Inspections&Query**Name=All Equipment That Can Have Inspections**

  Displays the query name **All Equipment That Can Have Inspections** in the text below the page name.

- meridium://Registry/Catalog/Search?**FolderPaths=Public\Meridium\Modules\Inspection\Document Queries&ItemTypes=QERY,SRCH**

  Returns all queries and searches in the Catalog folder \\Public\Meridium\Modules\InspectionDocument Queries.

- meridium://Registry/Catalog/Search?FolderPaths=Public\Meridium\Modules\Inspection\Document Queries&ItemTypes=QERY**&SiteMap=Inspection+meridium://Inspection, SearchUI+meridium://Registry/Catalog/Search**

  Displays a Site Map with two links: **Inspection**, which opens the **Inspection Start Page**, and **SearchUI**, which opens the **Catalog Search** page.

- meridium://registry/catalog/search?FolderPaths=Public\Meridium\Modules\Inspection\Document Queries&ItemTypes=QERY**&ColumnIndicies=1,1,-1,1**

  Returns all queries in the Catalog folder \\Public\Meridium\Modules\Inspection\Document Queries and hides the third column on the **Catalog Search** page, **Path**.

- meridium://registry/catalog/search?FolderPaths=Public\Meridium\Modules\Inspection\Document Queries&ItemTypes=QERY**&UrlTemplate=meridium://Inspection/Administration**

  Forces the returned hyperlink IDs of all queries in the Catalog folder \\Public\Meridium\Modules\Inspection\Document Queries to launch the **Inspection Administration** page.

- meridium://registry/catalog/search?FolderPaths=Public\Meridium\Modules\Inspection\Document Queries&ItemTypes=QERY**&ShowFinder=N**

Displays in the results all the queries that are stored in the Catalog folder \\Public\Meridium\Modules\Inspection\Document Queries but does not display the **Finder** link.

# Send To...

## About the Send To Feature

The *Send To* feature allows you to easily generate a link that provides direct access to any page in the Meridium APM Framework application. Nearly every page in the Meridium APM Framework provides access to the Send To feature. You can use this feature to generate a link to the current page and put it on to a Meridium APM Home Page, send it to someone in an email message, or create a desktop shortcut.

Wherever this feature is available, it is accessible via the **Send To** link on a task menu (typically the **Common Tasks** menu). When you click the **Send To** link, a submenu appears, displaying three options: **Home Page**, **Mail Recipient**, and **Desktop (create shortcut)**. For example, the following figure shows the **Send To** options for queries.
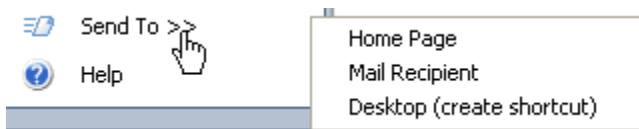


When you use the Send To feature, the Meridium APM system will construct a URL that references the current page and send it to the location that you specific. The content and syntax of the URL will vary, depending upon the page that you are viewing and will uniquely identify that page and the associated entity or object within the system so that it can be accessed again through the link that is created.

**Note:** While this feature is available on *most* pages in the Meridium APM Framework application, wherever you are viewing Catalog items or entities, those objects must be *saved* before the Send To feature will be available. The **Send To** link will typically be disabled if you are viewing a page that contains an unsaved entity or Catalog item.

# Sending a Link to a Home Page

The following instructions provide details on sending a link to a page in the Meridium APM Framework to a Personal or Group Home Page. If you are a Super User, you can send a link to your Personal Home Page, another user's Personal Home Page, or a Group Home Page. If you are not a Super User, you can send a link only to your Personal Home Page.

> **Note:** The following instructions assume that you are a Super User or a member of the MI Power User Role Security Group. If you are not a Super User or a member of the MI Power User Role Security Group, skip Steps 2 and 3 and go directly to Step 4.

**To send a link to a Home Page:**

1. In the Meridium APM Framework, on the appropriate task menu, click **Send To**, and then click **Home Page**.

   The **Send To Home Page - Select Home Page** dialog box appears.

2. Choose one of the three option buttons:

   - **Personal Home Page:** Sends the link to your Personal Home Page.

   - **Groups:** Sends the link to the Home Page of the group that you select in the Groups list.

   - **Users:** Sends the link to the Personal Home Page of the user that you select in the Users list.

3. Click **OK**.

   The **Send To Home Page: Select Section** dialog box appears.

   Note the following:

   - If there are currently no sections available on the selected Home Page, you will receive a message indicating that the Home Page must have at least one section, and the message will prompt you to create a personal section.

Click the **Yes** button to create a personal section. The **Customize Home Page Sections** dialog box appears, allowing you to create a local or shared section.

-or-

If there is currently no Home Page available (if you selected to send the link to a specific user's Home Page), you will receive a message indicating that a Home Page does not exist for the user, and the message will ask if you want the system to create a Home Page for that user.

Click **OK** to create a Home Page for that user.

4. Click the down arrow and select the section where you want to send the link.

5. Click **OK**.

The link is sent to the Home Page section that you selected.

## Sending a Link to Someone Via Email

When you use the Send To feature to send a link to someone via email, the URL for the current page will be sent to the specified email recipient through email. For the recipient to access the page referenced by the URL, that person must have access to the Meridium APM Framework application and must have a valid Meridium APM Security User account in order to log in.

**To send a link to an item via email message:**

1. In the Meridium APM Framework, on the appropriate task menu, click **Send To**, and then click **Mail Recipient**.

The **Email Message** dialog box appears.
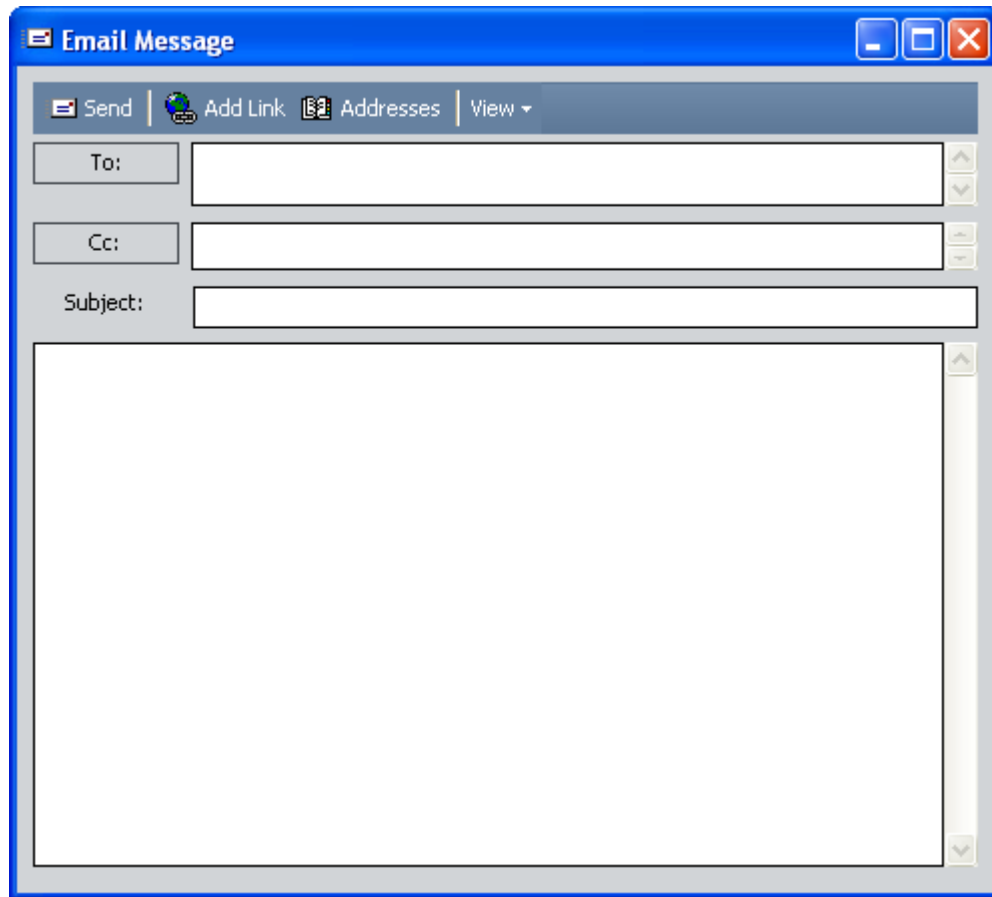
2. In the **To** text box, type the email address of the desired recipient.

3. Modify the **CC** and **Subject** fields if desired.

4. Add to the message if desired. The link is already included in the message by default.

5. Click the **Send** button.

The message is sent to the specified recipient.

## Creating a Desktop Shortcut to a Page

You can use the Send To feature to create a desktop shortcut to any page in the Meridium APM Framework. When you open the shortcut:

- If you are not logged in already, you will be prompted to log in to the Meridium APM Framework application, and then the page will appear.

- If you are already logged in, the current page will be refreshed to display the page referenced by the shortcut.

Note that the URL that is created for the desktop shortcut will include the name of the data source that was in use at the time the shortcut was created. This will cause that data source to be selected by default when you launch the Meridium APM Framework using that shortcut. If, while you are currently logged in to the Meridium APM Framework, you access a shortcut that was created using a data source other than the one you are currently using, the shortcut may or may not work properly.

When you use the Send To feature to create a desktop shortcut, information about the page that you are currently viewing is passed from the Meridium APM Framework application to the Microsoft Windows operating system to create the shortcut. In addition to passing the URL to the shortcut, values that identify the page are also used to create the file name and description for the shortcut. The specific values that are passed to the shortcut vary, depending upon the page that you are viewing. For example, when you create a shortcut to record in the Record Manager, the Record ID is passed to the shortcut and included in the description. The following special characters are not supported in Windows file names and will be replaced with an underscore if they are passed into the file name or description of the desktop shortcut:

- \

- /

- :

- *

- ?

- "

- <

- >

- |

Therefore, when you view the shortcut after it has been created, the value that is used to identify it on your desktop may vary slightly from the value that you saw in the Meridium APM Framework.

**To create a desktop shortcut to a page in the Meridium APM Framework application:**

* In the Meridium APM Framework, on the appropriate task menu, click **Send To**, and then click **Desktop (create shortcut)**.

   A shortcut is created on your desktop.

   ▪ If the shortcut was created successfully, a confirmation message will not appear.

   ▪ If the Meridium APM system encountered an error while attempting to create the shortcut, an error message should appear.

# Printing

## About Printing Information

Throughout the Meridium APM Framework application, you can print various information, such as the results of a search or a query. Whenever you are allowed to print the current page, the **Print** link will be enabled on a task menu. For example, the following figure shows the **Common Tasks** menu for the Query Builder, where the **Print Query** link is enabled.
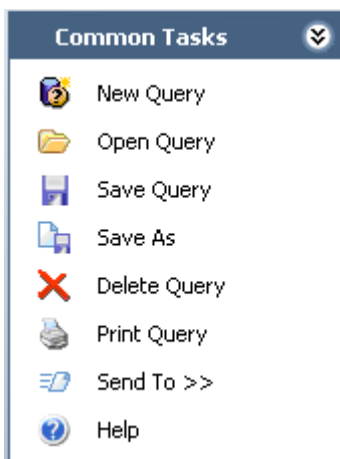
Additionally, whenever you are allowed to print the current page, the **Print** command will be enabled on the **File** menu.

# Printing Information

**To print the information you are currently viewing:**

1. In the Meridium APM Framework, on the appropriate task menu, click the **Print** link.

   -or-

   On the **File** menu, click **Print**.

   - If you are viewing information that has already been formatted for printing and should not require adjustments (e.g., a report or a graph), the **Print** dialog box appears.

     -or-

   - If you are viewing information that you can adjust prior to printing (e.g., query or search results), the **Preview** window appears. Format the information as needed, and then click the **Print** icon to display the **Print** dialog box.

2. In the **Name** list, select the printer to which you want to print.

3. If desired, click the **Properties** button to adjust the settings of the selected printer.

4. Specify the desired **Print** range, and choose the **Number of copies**.

5. Click **OK**.

   The information prints to the selected printer.

# Print Preview Window

## About the Preview Window

The **Preview** window displays a preview of how information will look when it is printed.

Generally, the **Preview** window appears when you print information that has not been pre-formatted for printing. For example, the **Preview** window will appear when you print query results (which are not formatted) but not when you print a report (which are formatted according to the selected template).

At the top of the window, a toolbar appears, offering you various options. The following table lists and describes each of the toolbar buttons.
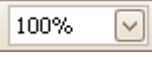
| Image | Label | Description |
|---|---|---|
| | Search | Displays the **Find** dialog box, where you can search for specific words or phrases within the **Preview** window. |
| | Open | Displays the **Open** dialog box, where you can browse for and open the file that you want to view in the Preview window. Note that you can open only files with the .prnx extension. |
| | Save | Displays the **Save As** dialog box, where you can save the content of the **Preview** window. |
| | Print… | Displays the **Print** dialog box, where you can specify printing options and print the current information. |
| | Print | Prints the current information using the default print settings (i.e., bypasses the **Print** dialog box). |
| | Page Setup | Displays the **Page Setup** dialog box, where you can choose various aspects of the page formatting. |
| | Header and Footer | Displays the **Header and Footer** dialog box, where you can define various aspects of the header and footer. |
| | Scale | Displays the **Scaling** dialog box, where you can adjust the scale of the content of the **Preview** window. |
| | Hand Tool | Displays the hand hand pointer, which lets you drag the content of the **Preview** window. |

| Image | Label | Description |
|---|---|---|
| | Magnifier | Changes your mouse pointer to a magnifying glass. Click the desired area to zoom in or out. |
| | Zoom Out | Decreases the magnification of the preview. |
| 100% | Zoom | Displays a submenu of magnification options. Click an option to zoom in or our as desired. |
| | Zoom In | Increases the magnification of the preview. |
| | First Page | Takes you to the first page. |
| | Previous Page | Takes you to the previous page. |
| | Next Page | Takes you to the next page. |
| | Last Page | Takes you to the last page. |
| | Multiple Pages | Displays a submenu, which you can use to select the number of pages that you want to view at once. |
| | Color | Displays a submenu, where you can choose a background color for the printed information. |
| | Watermark | Displays the **Watermark** window, where you can select the watermark that you want to add to the content of the **Preview** window. |
| | Export Document | Displays a submenu that lets you export the content of the **Preview** window to an external location as a PDF file or an image file. |
| | Send Via E-Mail | Displays a submenu that lets you send an attachment containing the content of the **Preview** window to an email recipient. |
| | Exit | Closes the **Preview** window. |

**Formatting the Print Style**

**To modify the appearance of the printed material:**

1. In the Meridium APM Framework, on the **Preview** window toolbar, click the **Property Builder** button.

   The **Printable Component Editor** dialog box appears.

Each tab of the **MainView** (**Options**, **Behavior**, and **Styles**) displays the various properties assigned to the printed information.

2.  Select or clear the check boxes as appropriate to set the desired options, and then click **OK**.

**Modifying the Header and Footer**

**To modify the header and footer:**

1.  In the Meridium APM Framework, on the **Preview** window toolbar, click the **Header and Footer** button.

    The **Page Content Editor** dialog box appears.

2.  In the **Header** section, click the **Align Tops** button, **Align Middles** button, or **Align Bottoms** button to choose the vertical alignment for the header.

3.  Click the **Font** button to choose the font style and size of the header.

4.  In one of the three text boxes, type the desired header(s), depending on the desired horizontal alignment (left box for left-aligned, middle box for centered, or right box for right-aligned). Use the toolbar icons at the bottom of the dialog box to insert the associated information:

    - Page number

    - Number of pages

    - Date printed

    - Time printed

    - User name (i.e., printed by)

    - Image

5.  Complete steps 2-4 for the **Footer** section.

6.  Click **OK** to save your settings.

# Spell Check Feature

## About the Spell Check Feature

The Spell Check feature appears in various places throughout the Meridium APM Framework application and lets you search text for misspelled words. You can access the Spell Check feature from the text editor window or as an option on task menus in various Meridium APM modules. The Spell Check feature is not available in all Meridium APM modules or in all text fields on every datasheet.

When you use the Spell Check feature to check for misspelled words, the Meridium APM system searches the dictionary file corresponding to the current language for the words in the text that you are searching. If a word does not exist in this file, the Meridium APM system then searches your custom dictionary, which is created by your Windows operating system. If a word is not found in either place, or if a word does not exist in the Meridium APM dictionary and you do not have a custom Windows dictionary, the Meridium APM system considers the word misspelled and displays the **Word Not Found** dialog box and a list of suggested alternatives, where possible.
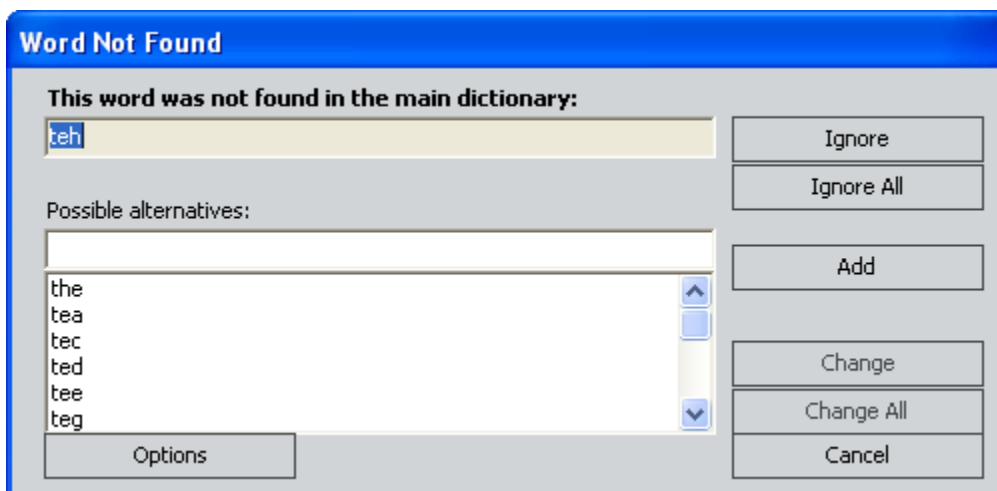


You can use the **Word Not Found** dialog box to:

- Ignore the misspelling.

- Replace your typed word with a provided suggestion.

- Add your typed word to the dictionary.

- Replace the misspelled word with a word that you provide.

After you select any of these options for the misspelled word, the Spell Check feature will proceed searching for any other misspelled words. The language selection is English by default. You can change the language setting so that the Meridium APM system will search a dictionary file other than the default.

## Replacing Your Typed Word With a Provided Alternative

The following instructions provide details on replacing the misspelled word with a provided alternative. These instructions assume that you are viewing the **Word Not Found** dialog box.

**To replace your typed word with a provided alternative:**

1. In the Meridium APM Framework, at the bottom of the **Word Not Found** dialog box, click the word that you want to use instead of the misspelled word.

   The **Change** and **Change all** buttons become enabled.
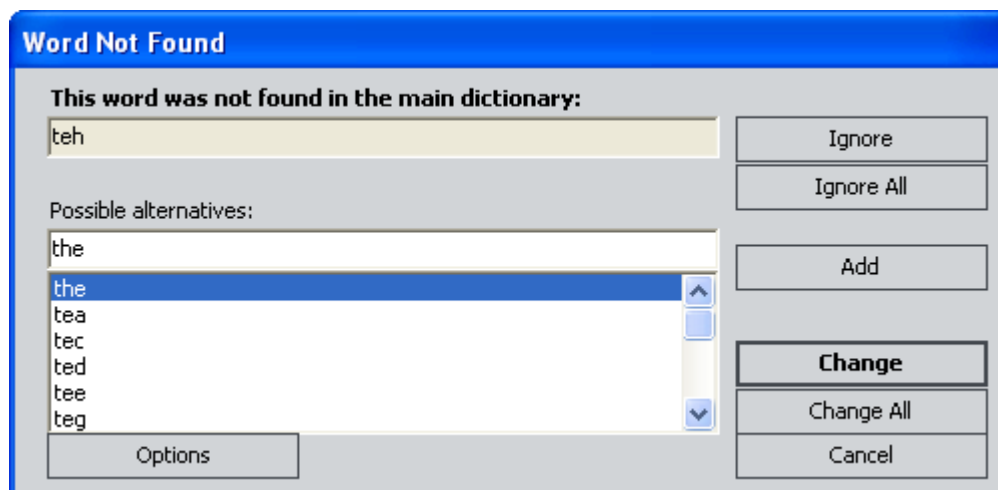


2. To replace only this instance of the misspelled word with the selected alternative, click the **Change** button.

   -or-

To replace the misspelled word with the selected alternative everywhere it appears in the text you are currently modifying, click the **Change All** button.

The Meridium APM system replaces the misspelled word with the word that you selected and the Spell Check feature continues searching for spelling errors.

# Replacing the Misspelled Word With a Word that You Provide

The following instructions provide details on replacing the misspelled word with a word that you provide. These instructions assume that you are viewing the **Word Not Found** dialog box.

**To replace a misspelled word with a word that you provide:**

1. In the Meridium APM Framework, in the **Word Not Found** dialog box, in the **Possible Alternative** text box, type the word that you want to use to replace the misspelled word.
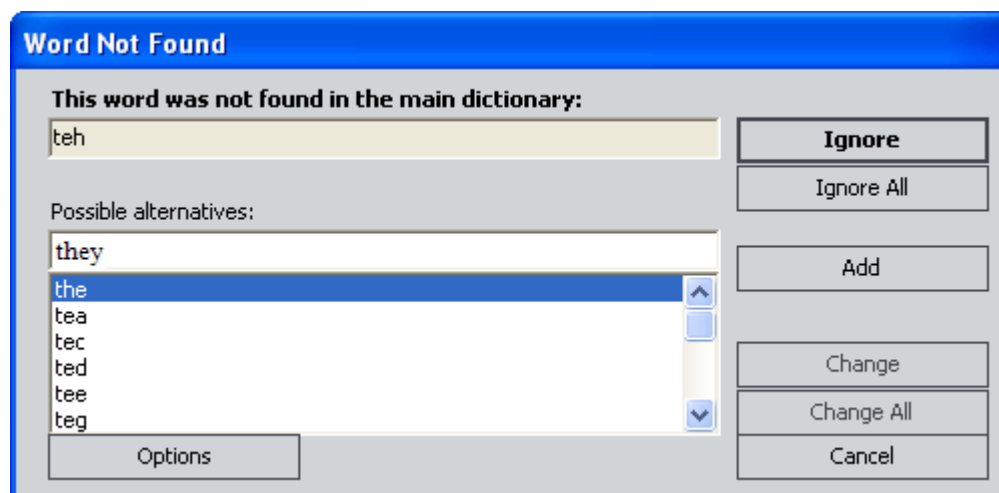


2. If you want to replace only this instance of the misspelled word, click the **Change** button.

   -or-

   If you want to replace the misspelled word everywhere that it appears in the text you are currently modifying, click the **Change All** button.

The Meridium APM system replaces the misspelled word with the word that you provided and the Spell Check feature continues searching for spelling errors.

# Ignoring a Misspelling

The following instructions provide details on ignoring a misspelled word and leaving it as it appears. These instructions assume that you are viewing the **Word Not Found** dialog box.

**To ignore a misspelling:**

- In the Meridium APM Framework, on the **Word Not Found** dialog box, click the **Ignore** button.

  -or-

  To ignore the misspelled word everywhere it appears in the text you are currently modifying, click the **Ignore All** button.

  **Note:** Using the **Ignore all** option will not add the word to the dictionary but will cause all occurrences of a given word to be ignored for the current instance of the text that you are searching for spelling errors. If you no longer want the word to be ignored, you need to close the Spell Check feature and access it again.

  If the word that you typed is correctly spelled and is a standard term used frequently within your industry, you may want to add it to the dictionary.

# Adding a Misspelled Word to the Dictionary

If the Spell Check feature does not recognize a word that is spelled correctly, you may want to add it to the dictionary. After you add the word to the dictionary, the Spell Check feature will not identify the word as misspelled in the future.

When you attempt to add a word to the dictionary, the Meridium APM system will first try to add the word to the custom dictionary defined by your Windows operating system. If this dictionary does not exist or if your Windows settings do not specify where this file should be created, the Meridium APM system will

create the file Custom.dic in the folder **C:\ProgramData\Meridium** and add the new word to that file.

**Note:** If you later want to remove a word from the dictionary, you can delete it manually from the Custom.dic file.

The following instructions provide details on adding a word to the dictionary and assume that you are viewing the **Word Not Found** dialog box.

**To add the misspelled word to the dictionary:**

- In the Meridium APM Framework, on the **Word Not Found** dialog box, click the **Add** button.

  The word is added to the appropriate dictionary file.

## Changing the Language Setting

The language settings that are available in the Spell Check feature correspond to the dictionary files that are installed with the Meridium APM Framework application. If desired, you can change the language setting. When you do so, you are specifying that the Spell Check feature use the dictionary file that corresponds to the language that you select.

**Hint:** You can add words to a given dictionary as desired.

**To change the language setting:**

1. In the Meridium APM Framework, on the text editor window, click the **Options** button.

   The **Spelling Options** dialog box appears.
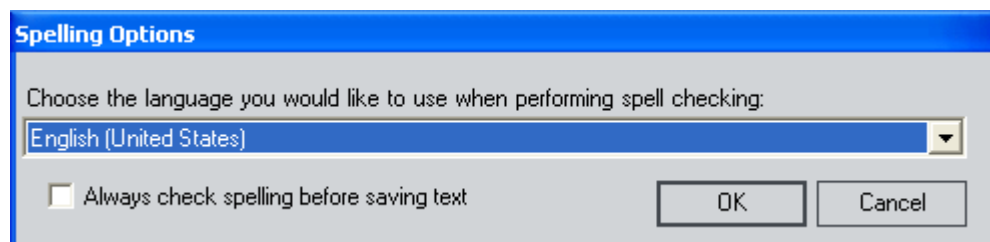


   -or-

On the **Word Not Found** dialog box, click the **Options** button.

The **Choose Language** dialog box appears.
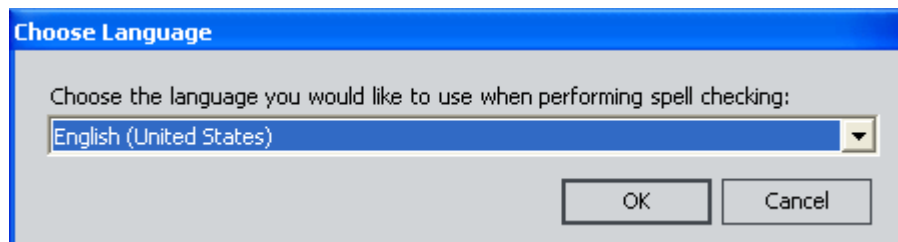


**Note:** The features and functions of the **Spelling Options** and **Choose Language** dialog boxes are the same.

2. Click the down arrow in the language box to select the desired language.

3. Click **OK**.

The next time that you search for misspelled words, the Meridium APM system will use the dictionary file associated with the selected language.

# Devices

## About Devices

The Meridium APM Devices functionality allows for the collection and transfer of data between a Meridium APM database and a "device," which can be a physical piece of hardware, such as a handheld data collection tool, or a file, such as a spreadsheet or text file. The Meridium APM Devices interface enables direct communication between supported data collection devices, the Meridium APM Framework, and the Meridium APM database. This is done by defining a device and associating with it one or more mappings, which define the data that is to be sent to and received from the data collection device. The Meridium APM product is shipped with some preconfigured devices and device mappings.

The data that is transferred between a Meridium APM database and a device can be anything that is required or needed for the device to perform its job

such as datapoints, equipment data, measurement data, or calibration data. A possible Devices scenario might be:

- First, a technician would send the desired data to the data collection device.

- After the technician has collected the necessary data on the data collection device, he or she can collect and load the data into memory in Meridium APM, where it can be reviewed prior to it being saved to the database.

- At this point, two types of save operations can be performed: the data can be saved as a Meridium APM dataset or it can be saved directly to the Meridium APM database.

  - If the data is saved as a dataset, that dataset can later be reloaded, reviewed, and then saved to the database.

  - When the data is saved to the database, the appropriate analysis calculations are performed, and the associated business rules are executed if the process was initiated from Calibration or Thickness Monitoring.

When loading data from a dataset, be sure to match up the correct device with the correct dataset. We recommend that you create a folder that will be used to store like-device datasets. The name of each dataset should indicate the device type, the direction (Send or Receive), and the type of data that is being used. Locate the dataset in the same folder for each device every time you perform a Send or Receive. To prevent errors, double-check the device type and device action (Send or Receive) associated with a dataset.

## Accessing the Devices Interface

Two Meridium APM modules, Thickness Monitoring and Calibration Management, have integrated the Devices functionality and provide preconfigured Start Page links, which you can use to access the Devices interface. In addition, as with all Meridium APM features, the Devices interface is accessible via a URL, which you can construct and place on any Home Page to provide quick access to Devices functionality.

Below we provide details on accessing Devices in Thickness Monitoring and Calibration Management. Note that you can also use any URL that you have configured to access devices in a similar way.

- **To access the Devices interface in Thickness Monitoring**, on the **Thickness Monitoring Functions** page, click the **Datalogger** link.

- **To access the Devices interface in Calibration**, on the **Calibration Management Functions** page, click the **Send to Calibration Data Collector** or **Receive from Calibration Data Collector** link.

  The **Select a Device and Device Properties** dialog box appears.

  **Note:** If you access the dialog box from the **Send to Calibration Data Collector** link, the **Send to Device** option button will be selected by default. If you use the **Receive from Calibration Data Collector** link, the **Receive from Device** option button will be selected by default. When you access the dialog box from Thickness Monitoring, the **Send to Device** option button is always selected by default.

## About the Select a Device and Properties Dialog Box

The **Select a Device and Properties** dialog box serves as the starting point of the Devices interface. From this dialog box, you can access various options related to devices. The **Device ID** list displays the name of the currently selected device. The last device that you used is selected by default, but you can choose a different device, if desired.

Below the list, a pair of option buttons appears. You can select the option that corresponds to the action that you want to perform: **Send to Device** or **Receive from Device**.

If you click the **Show Advanced Options** link, four additional links appear:

- **Edit Device:** Displays the **Manage Device** window, where you can modify the settings for the selected device.

- **New Device:** Displays the **Manage Device** window, where you can create a new device.

- **Delete Device:** After asking for confirmation, deletes the selected device.

- **Manage Mappings:** Displays the **Manage Device Mappings** window, where you can manage the mappings for a given type of device. This link is enabled only after at least one device has been defined.

**Note:** The **Show Advanced Options** link is enabled only if you are a Super User or a member of the **MI Devices Administrators** Security Group.

# Managing Devices

### Adding a New Device

To add a new device, you must be a Super User or a member of the MI Devices Administrators Security Group and have the appropriate family-level security privileges.

**To add a new device:**

1. Access the **Select a Device and Properties** dialog box.

2. Click the **Show Advanced Options** link.

   Four additional links appear.

3. Click the **New Device** link.

   The **Manage Device** window appears.

4. Configure the device properties as desired.

5. Click the **Save** button.

   The new device is saved to the database.

6. Click the **Close** button to close the **Manage Device** window.

### Editing an Existing Device

**To edit an existing device:**

1. Access the **Select a Device and Properties** dialog box.

2. In the **Device ID** list, select the device that you want to edit.

3. Click the **Show Advanced Options** link.

   Four additional links appear.

4. Click the **Edit Device** link.

   The **Manage Device** window appears, displaying the current settings for the device.

5. Configure the device properties as desired.

6. Click the **Save** button.

   Your changes are saved to the database.

7. Click the **Close** button to close the **Manage Device** window.

### Configuring Device Properties on the Manage Device Window

The **Manage Device** window displays all the properties associated with a given device.

For any device, you can configure the following properties:

- **Device ID:** The name of the device. For each device, this value is required and must be unique.

- **Device Type:** The type of device, which you can select from the options in the list. The available device types are hard-coded into the system and represent the types of devices supported by Meridium APM. The type of device that is selected determines whether the **Data Source**, **User ID**, and **Password** fields are enabled or disabled. If you select a Device Type, then type a value in the **Data Source** field, and then change the Device Type, the value you typed in the **Data Source** field will be removed. This is a required field.

- **Data Source:** The name of the data source associated with the source data. When using a device such as Microsoft Excel, Access, ODBC, or text, you will need to define where the source data resides. For example, in the case of ODBC, this would be the name of the ODBC data source as configured in the ODBC Data Source Administrator. In the case of a text file, you would specify the directory where the text file is located, and in the other cases, you would specify the location of the Microsoft Excel Spreadsheet or Access Database file.

  You can click the **Browse** button to search for the data source location. If you select a Microsoft Excel, Access, or text file, the **Browse** button will display a Windows browser. If you select an ODBC data source, the **Browse** button will display the **ODBC Datasources** dialog box, where you can select the appropriate data source.

- **User ID:** The user ID for the data source described above. This value may or may not be required, depending on which data source you selected.

- **Password:** The password associated with the specified user ID. This value may or may not be required, depending on which data source you selected.

- **Send Settings:**

  - **Send to Device Query:** The query that will be used to define the set of data, or values, that will be available to send to the device. You can click the **Browse** button to find and select the desired query. To select this query, it must already be configured and be stored in a Catalog folder for which you have View permissions. Note that as long as the query is stored in a Public folder, users of the Devices functionality will be able to execute the query without having explicit permissions to the Catalog folder.

- **Send to Device Contents Description:** A description of the type of data that you will be sending to the device.

- **Send to Device Contents Family:** The family associated with the information that will be sent to the device. The families that appear in the list are determined by the **Send** query that you selected.

  **IMPORTANT:** Specifying this family is *crucial* when the **Send** query contains a **Many** relationship. For example, consider a **Send** query that selects information from the Equipment, Functional Location, and Task families and where a Functional Location record can be linked to many Task records. If you select the Task family as the **Send to Device Contents Family**, *each* Task record will be listed on the **Send to Device** dialog box, with the Functional Location record data repeated for each Task record. On the other hand, if you select the Functional Location family as the **Send to Device Contents Family**, then each Functional Location record will be listed only once, even though many Task records may be linked to it.

- **Receive Settings:**

  - **Receive from Device Query:** The query that will be used to define the set of data or values that will be available to receive from the device. You can click the **Browse** button to find and select the desired query. To select this query, it must already be configured and be stored in a Catalog folder for which you have View permissions. Note that as long as the query is stored in a Public folder, users of the Devices functionality will be able to execute the query without having explicit permissions to the Catalog folder.

  - **Receive from Device Contents Description:** A description of the type of data that you will be receiving from the device.

  - **Receive from Device Contents Family:** The family associated with the information that will be received from the device. The families that appear in the list are determined by the **Receive** query that you selected.

**Note:** If you change the device query for a device that already has mappings, you will need to modify the mappings manually to correspond to the new query.

**Deleting a Device**

> **IMPORTANT:** Before you delete a device, you should delete any mappings that are linked exclusively to that device.

**To delete a device:**

1. Access the **Select a Device and Properties** dialog box.

2. In the **Device ID** list, select the device that you want to delete.

3. Click the **Show Advanced Options** link.

   Four additional links appear.

4. Click the **Delete Device** link.

   A confirmation message appears, asking if you really want to delete the selected device.

5. Click the **Yes** button.

   The device is deleted from the database.

# Device Mappings

**Accessing the Manage Device Mappings Window**

The **Manage Device Mappings** window is where you can manage all the aspects of device mappings. Note that to manage device mappings, you must be a Super User or a member of the MI Devices Administrators Security Group. Note that the Meridium APM product is shipped with some preconfigured devices and device mappings.

You can access the **Manage Device Mappings** window in two ways:

- Access the **Select a Device and Properties** dialog box, select the desired device, click the **Show Advanced Options** link, and then click the **Manage Mappings** link.

  -or-

- On the **Devices** page, which appears after you send or receive data, on the **Device Tasks** menu, click the **Manage Mappings** link.

**Aspects of the Manage Device Mappings Window**

The **Manage Device Mappings** window serves as the starting point for all the tasks that you can perform related to device mappings. The window consists of the following:

- **Device Type list box:** Displays the currently selected device. You can click the down arrow to view and manage the mappings for a different device. Note that this list displays *only* the device types for which at least one device has already been defined.

- **Mapping list:** Displays the mappings that are currently configured for the selected device type.

- **Four links, which appear at the bottom of the window:**

  - **Edit Mapping:** Displays the **Mapping** window, where you can edit the selected mapping.

  - **New Mapping:** Displays the Additional Information dialog box, where you can specify options to begin the process of creating a new mapping.

  - **Copy Mapping:** Creates a copy of the currently selected mapping. After you copy a mapping, you can modify it as desired.

  - **Delete Mapping:** After asking for confirmation, deletes the selected mapping.

The following image shows the **Manage Device Mappings** window as it appears after you select the Fluke 74x device.
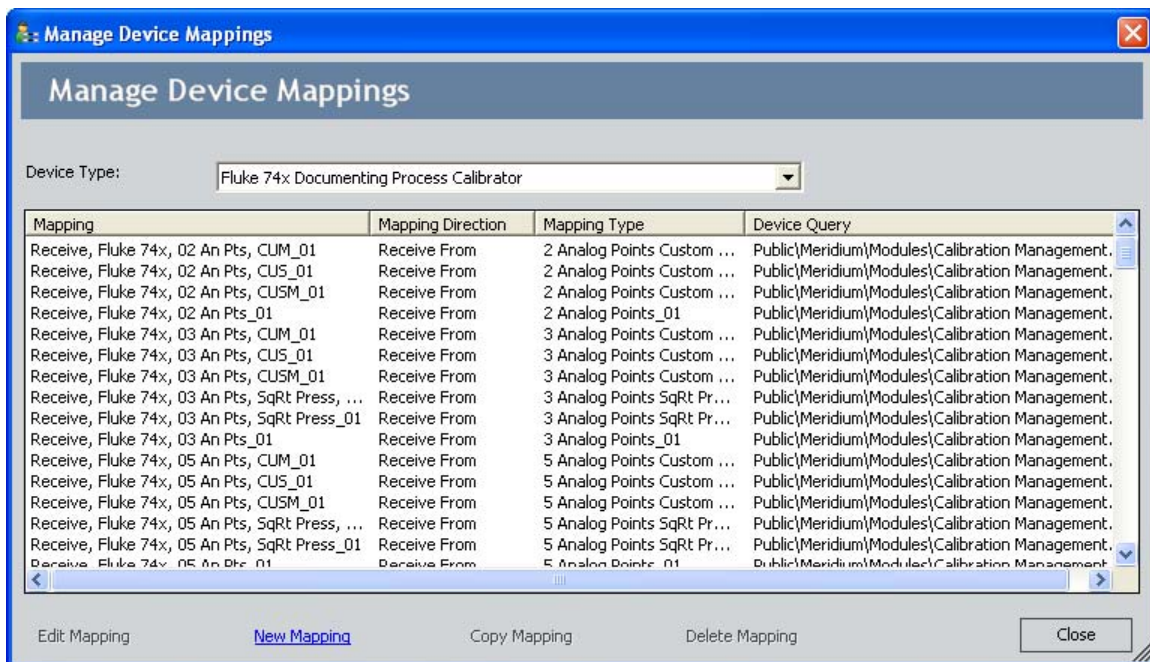
## Creating a New Device Mapping

To create a new device mapping, you must be Super User or a member of the MI Devices Administrators Security Group and have the appropriate family-level security privileges.
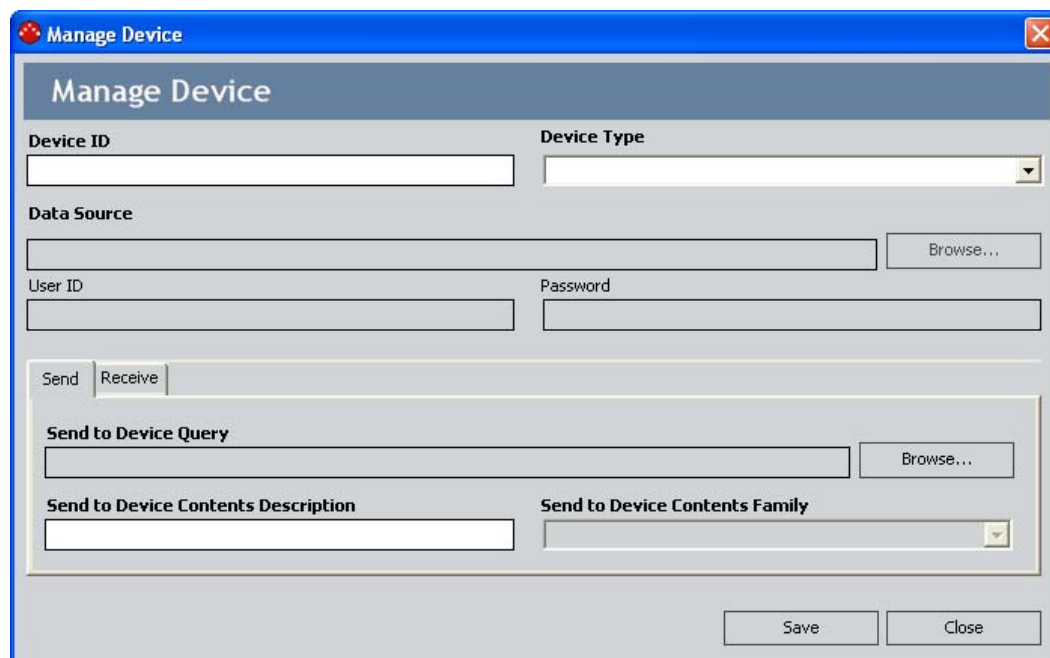
**To create a new device mapping:**

1. Access the **Manage Device Mappings** window.

2. Click the **New Mapping** link.

   **Hint:** Alternatively, you can select an existing mapping and click the **Copy Mapping** link to create a copy of a mapping that already exists. You can then modify the copy to create the new mapping.

   The **Additional Information** dialog box appears.

3. For the **Data Transfer Direction**, select the desired option: **Send to Device** or **Receive from Device**.

4. In the **Device Query** list, select the appropriate device query.

5. In the **Data Source** list, select the appropriate data source.

6. Click **OK**.

   The **Mapping** window appears.

7. Configuring the mapping settings as desired, and click the **Save** button.

   The mapping is saved to the database.

**Editing an Existing Mapping**

To edit an existing device mapping, you must be a Super User or a member of the MI Devices Administrators security group and you must have the appropriate family-level security privileges.

**To edit an existing device mapping:**

1. Access the **Manage Device Mappings** window.

2. In the list of mappings, select the mapping that you want to modify.

3.  Click the **Edit Mapping** link.

    The **Mapping** window appears, displaying the current settings for the selected mapping.

4.  Modify the mapping settings as desired, and click the **Save** button.

    Your changes are saved to the database. You can click the **Close** button to close the **Mapping** window.

**The Mapping Window**

**Configuring Mapping Properties on the Mapping Window**

There are two parts to configuring the properties of a mapping on the **Mapping** window:

*   Defining general settings on the **Mapping** tab.

*   Defining field mappings on the **Fields** tab.

**Defining General Settings on the Mapping Tab**

The **Mapping** tab of the **Mapping** window displays general properties related to the mapping, such as the ID and type.

On the **Mapping** tab, you can define the following properties for the selected mapping:

*   By selecting a device and linking it to a mapping, you are indicating that you want the mapping to be used when data is sent or received to or from the selected device. You can link a given device to multiple mappings and then via the Device Query, specify which mapping you want to use on a record-by-record basis. Before you can save a mapping, it must be linked to at least one device.

    To link a device to the current mapping, in the **Available Devices** field, select the desired device, and click the right arrow button to move the device to the **Selected Devices** field. You can also select multiple devices in the **Available Devices** field and click the double right arrow button to move the selected devices to the **Selected Devices** field.

> **Hint**: You can remove devices from the **Selected Devices** list by using the left arrow buttons.

- In the **Device Query** field, make sure that the correct query is selected. Note that this field is read-only.

- In the **Device Query Families** list, you can specify the following:

    - **Meridium APM Family**: A list of all the families that serve as a source of data in the Device Query. The **Fields** tab will display the fields that are defined for these families. This field is read only.

    - **Is Many Relationship**: A flag which indicates whether or not each family can potentially participate in a **Many** relationship. When this option is selected, you can specify the **Max Link Count**. This field is read only.

    - **Max Link Count**: For every non-Device Content family for which the **Is Many Relationship** check box is selected, the number of instances that should be considered for this mapping. This is necessary because, in theory, millions of links might exist. By setting this value, you are indicating a finite number of links that are created so that the specified number of placeholders for every field in that family can be created.

    - **Action**: The action that should be performed when data received from a device are saved to the Meridium APM database (**Locate**, **Insert**, **Update**, **Insert or Update**, and **None**). Note that you must select something other than **Locate** for at least one family before you will be allowed to save the mapping. Additionally, since this setting is related only to Receive mappings, this column is disabled when you are configuring a Send mapping.

- **Mapping ID:** The unique ID for the mapping that describes its purpose. It is used to identify the mapping in the list of available mappings on the **Manage Device Mapping** window and should reflect the type of mapping that is selected in the **Mapping Type** field. This is a required field.

- **Mapping Type:** The configuration that will be used by the device for the data that is being received by the device or being sent from the device. You can click the down arrow in the **Mapping Type** field to display a list of mapping types for the selected device. This is a required field.

**Defining Field Mappings on the Fields Tab**

The **Fields** tab of the **Mappings** window lets you map fields in the Meridium APM database to fields using by the data collection device. The list displays the fields that are currently mapped.

**Note:** When creating a new mapping, you can view the **Fields** tab only after you have completed all the required information on the **Mapping** tab.

**To add a new field mapping:**

1. Click the **Add Field Mapping** button to add a blank row to the list.

   -or-

   Right-click the list, and choose **Add Field Mapping**.

2. In the **Meridium APM Field** column, select the desired family and field.

3. In the **Device Field** column, select the device field that corresponds to the family field that you selected in the **Meridium APM Field** column.

4. Select the **Key** check box if the field is a "key" field.

   **Note:** Key fields are used to determine whether or not a record already exists in the Meridium APM database. If the record being loaded already exists, the existing record will be updated. If the record does not exist, it will be added.

**To delete a field mapping:**

- Select the row that you want to delete, and then click the **Remove Mapping** button.

   -or-

   Right-click the row that you want to delete, and then click **Remove Field Mapping**.

**To view the details of a mapped field:**

- Select the row for which you want to view details, and then click the **Show Details** button.

  -or-

  Right-click the row for which you want to view detail, and then click **Show Field Mapping Details**.

  The **Mapping Field Properties** dialog box appears.

  The **Mapping Field Properties** dialog box displays the following read-only information:

  - **Meridium APM Field:** The name of the field, as specified by the Caption defined for the field in Meridium APM.

  - **Meridium APM Field ID:** The ID of the field.

  - **Meridium APM Family:** The family to which the field belongs.

  - **Meridium APM Family Type:** The type of family to which the field belongs, including the entity, relationship, and special field. The special field could be a unit of measurement or inspection.

  - **Device Field:** The field name in the device.

  - **Device Field ID:** The field ID in the device.

  - **Device Datastore:** The datastore location for the field.

  - **Field Data Type:** The type of data that is included in the field (numeric, character, binary, etc.)

**To update the list of fields to include additional fields generated by changes made to the Max Link Count column in the Meridium APM Query Families grid on the Mapping tab:**

- Click the **Load Mapping Fields** button.
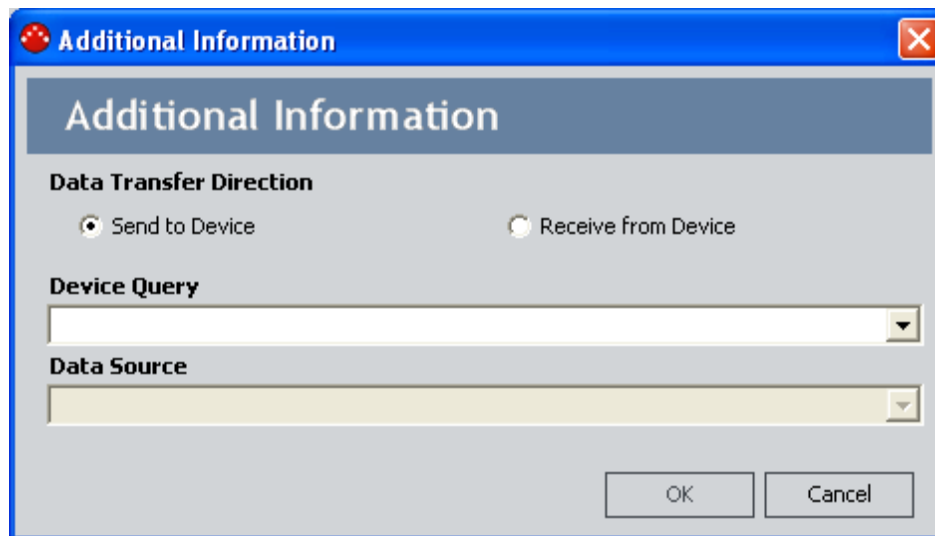
Deleting a Mapping

To delete an existing device mapping, you must be a Super User or a member of the MI Devices Administrators Security Group and you must have the appropriate family-level security privileges.

**To delete an existing device mapping:**

1. Access the **Manage Device Mappings** window.

2. In the list of mappings, select the mapping that you want to delete.

3. Click the **Delete Mapping** link.

   A confirmation message appears, asking if you really want to delete the mapping.

4. Click the **Yes** button.

   The mapping is deleted from the database.

# Sending and Receiving Data

Sending Data to a Device

Before you attempt to send data to a device, you should make sure that the device has been properly configured.

**To send data to a device:**

1. Access the **Select a Device and Properties** dialog box.

2. If it is not already selected, select the **Send to Device** option.

3. Click **OK**.

   The system runs the Send query for the selected device. After the query runs, the **Devices** page appears, displaying a list of values that are available to be sent to the device.

Note: If the Send query for the device contains a prompt, before the **Devices** page appears, a dialog box will be displayed, where you must supply values for the prompt parameters.

If an appropriate device mapping could not be found for a given row of data, a message will appear, and that row will be disabled so that you cannot send it to the device.

4. In the **Send?** column for each row of data that you want to send, select the check box. For data that you do not want to send to the device, clear the **Send** check box.

Note: Alternatively, if you want to send all the data to the device, right-click the list, and choose **Select All Records**. Note that choosing **Deselect All Records** clears all your selections.

5. On the **Device Tasks** menu, click the **Send Data** link.

The system prompts you to check that the device is connected.

6. Click the **Yes** button to continue. Note that if you click the **Yes** button and the device is not actually connected, an error message will appear.

The system sends the data to the selected device, validates the send action, and presents a status message notifying you that the send action has been completed.

Note: If you click the **Send Data** link but the system cannot send the data, then the system displays a warning message and the failed records.

### Receiving Data from a Device

Note: If you send an item to the DMS2 or DMS Go/DMS Go+ device that contains more than 32 characters, the item name is truncated to the first 32 characters it receives by the device. When you receive this same item from the device, if you attempt to save the results, an error appears because the truncated item name cannot be found. To avoid this error, edit the item name in the **TML Asset ID** column on the **Devices** page before saving the results.

**To receive data from a device:**

1. Access the **Select a Device and Properties** dialog box.

2. If it is not already selected, select the **Receive from Device** option.

3. Click **OK**.

   The **Devices** page appears, displaying a blank grid.

4. On the **Device Tasks** menu, click the **Receive Data** link.

   The system prompts you to check that the device is connected.

5. Click the **Yes** button to verify that the device is connected and ready to send data to the Meridium APM database. Note that if you click the **Yes** button and the device is not actually connected, an error message will appear.

   The system displays a list of datapoints on the **Devices** page. At this point, you can save the received data to the Meridium APM database or as a Meridium APM dataset.

Note that *receiving* data simply imports the data from the device and displays it on the **Devices** page. After you have received data, you can save the data as a Meridium APM dataset or, if you have the appropriate permissions, save the data directly to the database.

**The Devices Page**

**Options Available from the Devices Page**

From the **Devices** page, you can access various options associated with devices. The **Devices** page offers two task menus, from which various options functions are available: **Device Tasks** and **Common Tasks**.

The **Device Tasks** menu on the **Devices** page contains the following links:

- **Send Data:** Sends data to the device.

- **Receive Data:** Receives data from the device.

- **Select Device:** Displays the **Select a Device and Properties** dialog box, where you can choose a different device to send or receive data.

- **Manage Mappings**: Displays the **Manage Device Mapping**s window, where you can manage the mappings associated with a given device.

- **Run Device Query:** Reruns the Device Query associated with the current device. This option is useful if the Device Query contains a prompt. You can click this link to rerun the query and supply different values. Note that this link is enabled only when you are performing a Send operation.

- **Baud:** Displays the current baud rate. You can click this link to change the baud rate.

- **Port**: Displays the port currently used by the device. You can click this link to change the port.

The **Common Tasks** menu on the **Devices** page contains the following links:

- **Load From Dataset**: Displays the **Open a Dataset** dialog box, where you can select a dataset from which to load data.

- **Save Data**: Commits the current data to the database. This option is available to you only if you are a Devices Administrator and is enabled only if the received list contains data that has been selected for saving. For details, see the section "Saving Received Data to the Database" in this chapter.

- **Save As Dataset**: Displays the **Save Results as Dataset** dialog box, which lets you save the current data as a dataset. This option is enabled only when data has been selected in the received list. For details, see the section "Saving Received Data as a Meridium APM Dataset" in this chapter.

   **Note:** The **Save?** check box in the list of received data lets you choose which specific data you want to save.

- **Help:** Displays the context-sensitive Help topic for the **Devices** page.

Changing the Baud for the Device

**To change the baud rate of a device:**

1. On the **Device Tasks** menu, click the **Baud** link.

   A list of options pops up.

2. Select the desired rate from the list. For example, if the Panametrics 38DL Plus has been configured to communicate at 9600 baud, select **9600** from the list.

   The baud rate changes as appropriate.

Changing the Port for the Device

**To change the port of a device:**

1. On the **Device Tasks** menu, click the **Port** link.

   A list of options pops up.

2. Select the desired port from the list.

   The port changes as appropriate.

Loading Data from a Dataset

From the **Devices** page, you can upload data from a Meridium APM dataset and then send it to the selected device or save it to the Meridium APM database.

**To load data from a Meridium APM dataset:**

1. On the **Devices** page, on the **Common Tasks** menu, click the **Load From Dataset** link.

   The **Open a Dataset** dialog box appears.

2. Navigate to the dataset that you want to load, and click the **Open** button.

The dataset is loaded, and the data appears on the **Devices** page.

**Saving Received Data**

Saving Received Data as a Meridium APM Dataset

After you receive data from a device, the received data is displayed in a list on the **Devices** page, from which you can save the data as a Meridium APM dataset.

**To save received data as a Meridium APM dataset:**

1. In the list of received data, select the **Save?** check box for each row of data that you want to flag for saving.

   Note that this selection does not affect which rows of data are actually included in the dataset. Regardless of your selection, ALL rows of received data will be saved to the dataset. In addition, your **Save?** designation will be saved with each row of data and will serve to indicate which rows you think are valid and should be saved to the database. When an administrative user later reviews the dataset, he or she can determine which information to commit to the database, based on your recommendation.

   **Hint:** If you want to flag all the received data, right-click the list, and choose **Select All Records**. Note that choosing **Deselect All Records** clears all your selections.

2. On the **Common Tasks** menu, click the **Save As Dataset** link.

   The **Save Results As Dataset** dialog box appears.

3. Navigate to the Catalog location where you want to save the dataset.

4. Type a name for the dataset and a description, if desired.

5. Click the **Save** button.

   The dataset is saved to the Catalog. If the save to dataset function is unsuccessful, an error message will appear, indicating that the data could not be saved. From the error message, you can access the error log.

Saving Received Data to the Database

After you receive data from a device, you can save the data directly to the database. Committing the data to the database actually updates all the associated records and tables with the received information. Any database actions that need to be taken as a result of the updated data will be performed by the system.

**Note:** Only Device Administrators and Devices Power Users can save data directly to the Meridium APM database.

**To save received data to the Meridium APM database:**

1. In the list of received data, select the **Save?** check box for each row of data that you want to save.

   **Hint:** If you want to save all the received data that is displayed, right-click the list, and choose **Select All Records**. Note that choosing **Deselect All Records** clears all your selections.

2. On the **Devices** page, on the **Common Tasks** menu, click the **Save Data** link.

   The data is saved to the database and any necessary actions are taken. If the save to database function is unsuccessful, an error message will appear, indicating that the data could not be saved. From the error message, you can access the error log.

Viewing the Error Log When the Save Is Unsuccessful

When you attempt to save received data to the Meridium APM database or as a dataset but the save is unsuccessful, an error message appears. The specific error message that you see may vary depending on the type of device you are using, whether all or some of the data failed to save, and whether you are saving the data to the database or as a dataset. Regardless of the text that appears, when you click **OK**, the **Devices Log** will appear, displaying a list of the data that could not be saved to the Meridium APM database.
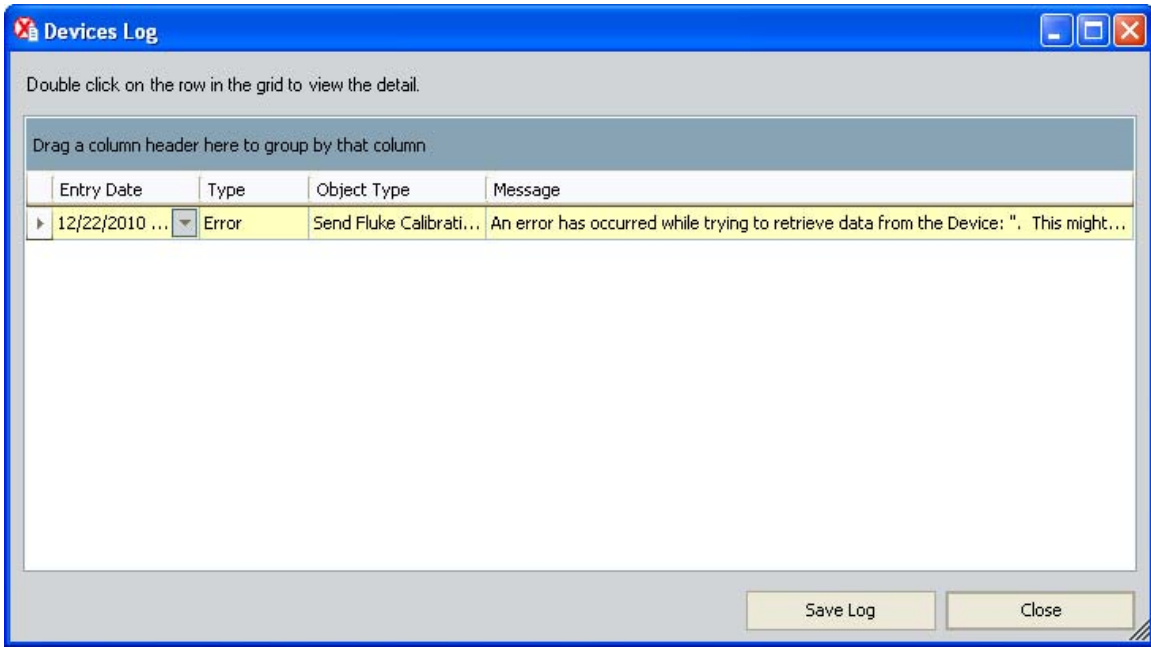
On the **Devices Log** dialog box, you can double-click any row in the grid to view the details of the error.

# URLs

**Parameters for the Devices URL**

The URL for accessing for Devices functionality, **meridium://Devices**, accepts the parameters described in the following table. Note that a link created from the path with no parameters opens the **Select a Device and Properties** dialog box.

| Parameter Name | Description | Accepted Value(s) | Notes |
|---|---|---|---|
| Action | Specifies the action you want to take: send or receive. | Send<br>Receive | None |

| Parameter Name | Description | Accepted Value(s) | Notes |
|---|---|---|---|
| **AllowGridEditOnReceive** | Disables the ability to edit the devices data when performing a Receive operation. | False | If this parameter is not specified, the ability to edit data will be enabled. Therefore, while True (enabled) is a valid value, you should need to use this parameter *only* for the purpose of disabling the functionality (False). |
| **AllowGridEditOnSend** | Disables the ability to edit the devices data when performing a Send operation. | False | If this parameter is not specified, the ability to edit devices data will be enabled. Therefore, while True (enabled) is a valid value, you should need to use this parameter only for the purpose of disabling the functionality (False). |

| Parameter Name | Description | Accepted Value(s) | Notes |
|---|---|---|---|
| **AllowSaveToDatasetOnReceive** | Disables the ability to save data to a Meridium APM dataset when performing a Receive operation. | False | If this parameter is not specified, the ability to save data as a dataset will be enabled. Therefore, while True (enabled) is a valid value, you should need to use this parameter only for the purpose of disabling the functionality (False). |
| **AllowSaveToDatasetOnSend** | Disables the ability to save data to a Meridium APM dataset when performing a Send operation. | False | If this parameter is not specified, the ability to save data will be enabled. Therefore, while True (enabled) is a valid value, you should need to use this parameter only for the purpose of disabling the functionality (False). |

| Parameter Name | Description | Accepted Value(s) | Notes |
|---|---|---|---|
| **AllowLoadFromDatasetOnReceive** | Disables the ability to load data from a Meridium APM dataset when performing a Receive operation. | False | If this parameter is not specified, the ability to load data from a dataset will be enabled. Therefore, while True (enabled) is a valid value, you should need to use this parameter only for the purpose of disabling the functionality (False). |
| **AllowLoadFromDatasetOnSend** | Disables the ability to load data from a Meridium APM dataset when performing a Send operation. | False | If this parameter is not specified, the ability to load data from a dataset will be enabled. Therefore, while True (enabled) is a valid value, you should need to use this parameter *only* for the purpose of disabling the functionality (False). |
| **Device ID** | Specifies the ID of the desired device. | Any valid Device ID. | None |

**Note:** The AllowGridEdit parameters (for both Send and Receive) are superseded by security. This means that even if this parameter is set to True, you must be a member of the MI Devices Power Users or MI Devices Administrators Security Group to edit grid data.

**Examples of the Devices URL**

- meridium://Devices**?Device=Fluke&Action=Send**

    Initiates a Send operation for the Fluke.

- meridium//Devices?Device=Fluke&Action=**Receive**

    Initiates a Receive operation for the Fluke.

- meridium//Devices?Device=Fluke&Action=Receive**&AllowGridEdit=False & AllowLoadFromDatasetOnSend=False**

    Links to the Send function for the Fluke and disables the edit grid data and Load from Dataset options.

# Event Builder

## About the Event Builder

The **Event Builder** is available in various places throughout the Meridium APM Framework application to facilitate the creation of Event records. Some Meridium APM modules, like Inspection Management give you access to the **Event Builder**, which takes you step-by-step through the process of building an Event record.

By using a URL, you can make the **Event Builder** available anywhere in the Meridium APM Framework application that supports the use of links. When you use a URL to launch the **Event Builder**, the screen of the builder that you see first will depend on which parameters were specified in the URL. For example, if the Entity Key is provided in the URL, the **Event Builder** will bypass the step where you select an Equipment record. Instead, the record with the provided Entity Key will be selected automatically in the **Event Builder**. Note that you can click the **Back** button to view previous pages in the **Event Builder** to see any selections that were passed in via the URL or that you explicitly selected.

**Note:** In addition to manually constructing an **Event Builder** URL, you can also create a URL using the **URL Builder**.

# Using the Event Builder

The following instructions provide details on using the **Event Builder** to create a new Event record. Note that these instructions include *all* steps presented by the **Event Builder** (e.g., if the **Event Builder** is launched from the base URL with no parameters passed in). Depending on how you access the **Event Builder**, your workflow may vary slightly. In these instructions, skip to the step that reflects the screen that you see when you first launch the **Event Builder**. Note that regardless of your point of entry, you can click the **Back** button to view previous pages in the **Event Builder** and see any selections that were passed in via the URL or that you selected.

**To create a new Event record using the Event Builder:**

1. Access the **Event Builder**.

   The **Event Builder** appears, displaying the **Welcome** screen.

2. Click the **Next** button.

   The **Event Builder** displays the **Equipment Selection** screen.

3. Enter search criteria to locate the desired Equipment record. You can perform a Simple search on the **Simple Search** tab, or you can perform an Advanced search on the **Advanced search** tab.

4. When you have finished entering search criteria, click the **Find Now** button.

   Your search results appear at the bottom of the **Equipment Selection** screen.

5. In the results list, select the row containing the desired record, and click the **Next** button.

   The **Event Builder** displays the **Event Selection** screen.
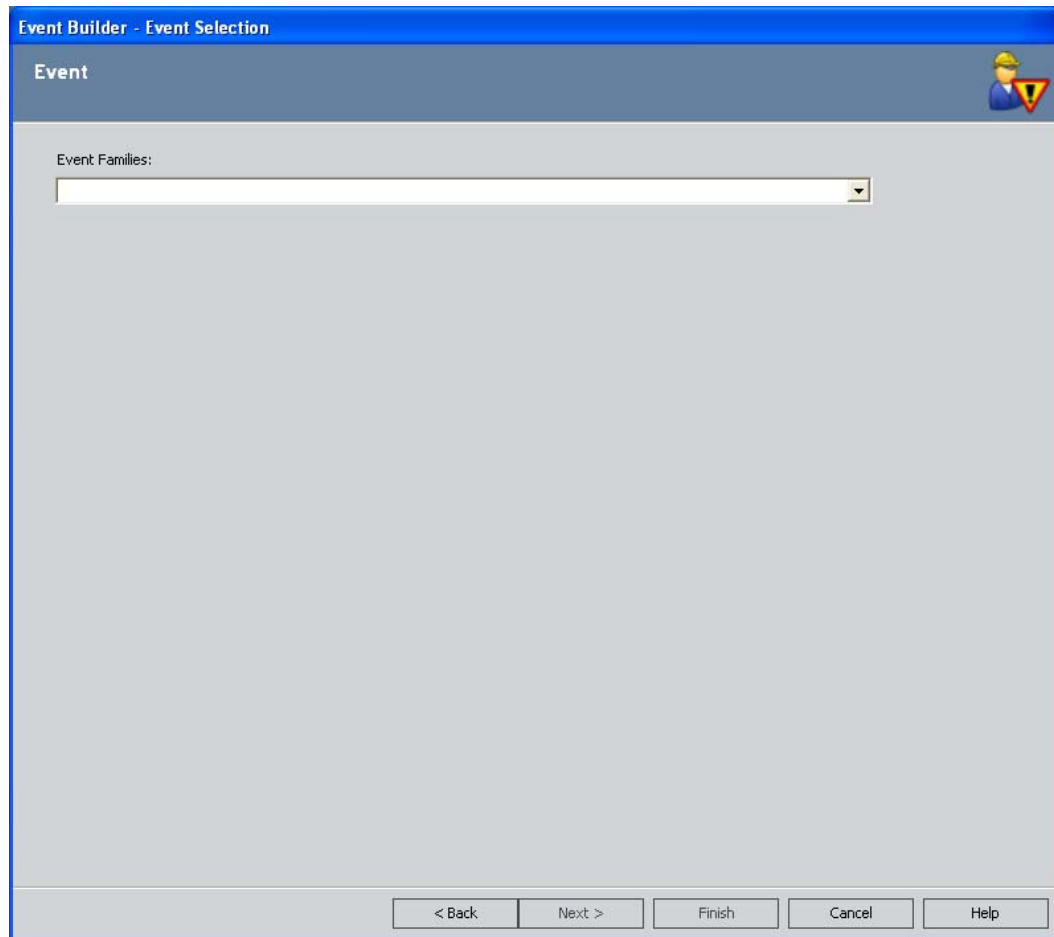
6. In the **Event Families** list, click the down arrow, and choose the desired Event family.

7. Click the **Next** button.

   The **Event Builder** displays the **Task(s) Selection** screen.
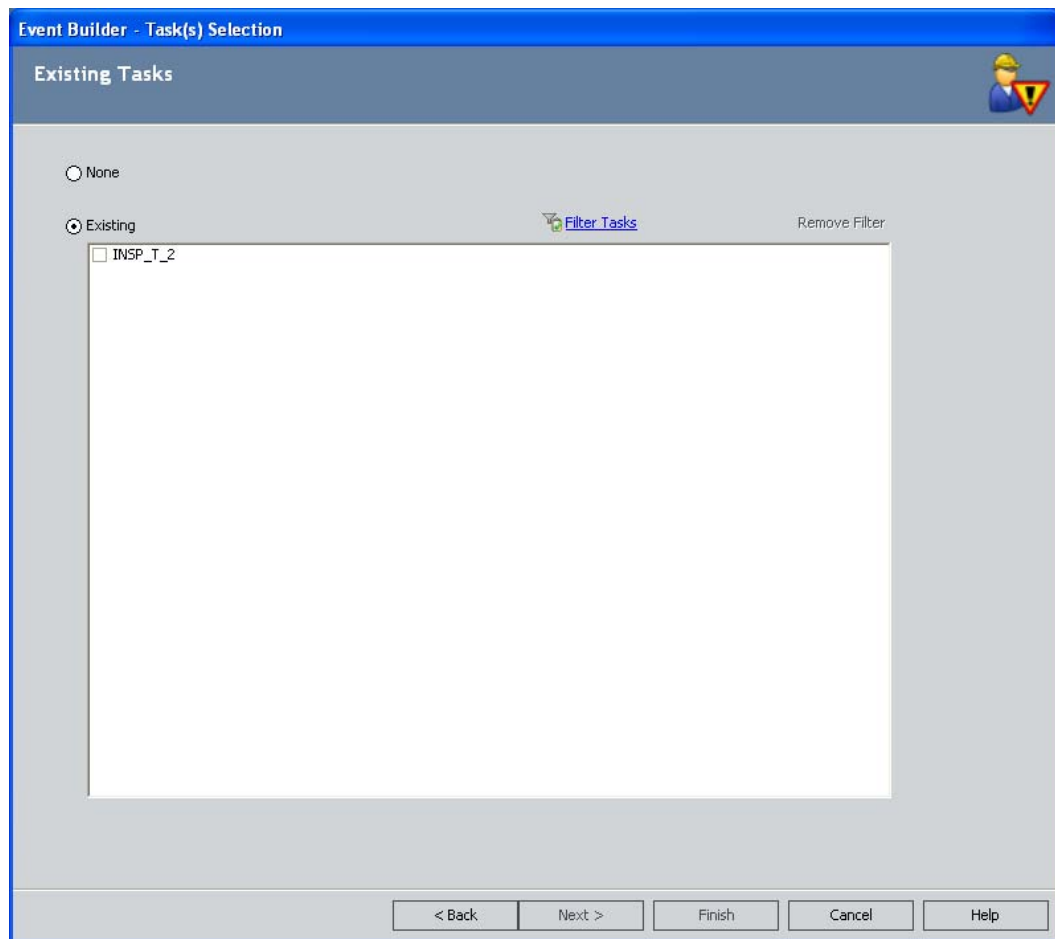
8.  If you do not want to link a Task record to link to the Event record, select the **None** option, and skip to step 10 of these instructions.

9.  If Task records are already linked to the selected Equipment record and you want to link the new Event record to one of those Task records, select the **Existing** option.

    The list of Task records that appears below the selection options becomes enabled. At this point, you can select the check box next to the Task record to which you want to link the new Event record.

10. Click the **Next** button.

    The **Event Datasheet** screen appears. If you chose not to link a Task record to the Event record, the datasheet is empty. If you chose to link the an existing Task record to the Event record, the datasheet is pre-populated with the appropriate information from the Task record.

11. Enter or modify the data as desired, and click the **Finish** button.

The Event record and its links to the selected Task and Equipment records are saved, and the Event record appears in the Record Manager.

# Accessing the URL Builder

Creating a Link to the Event Builder
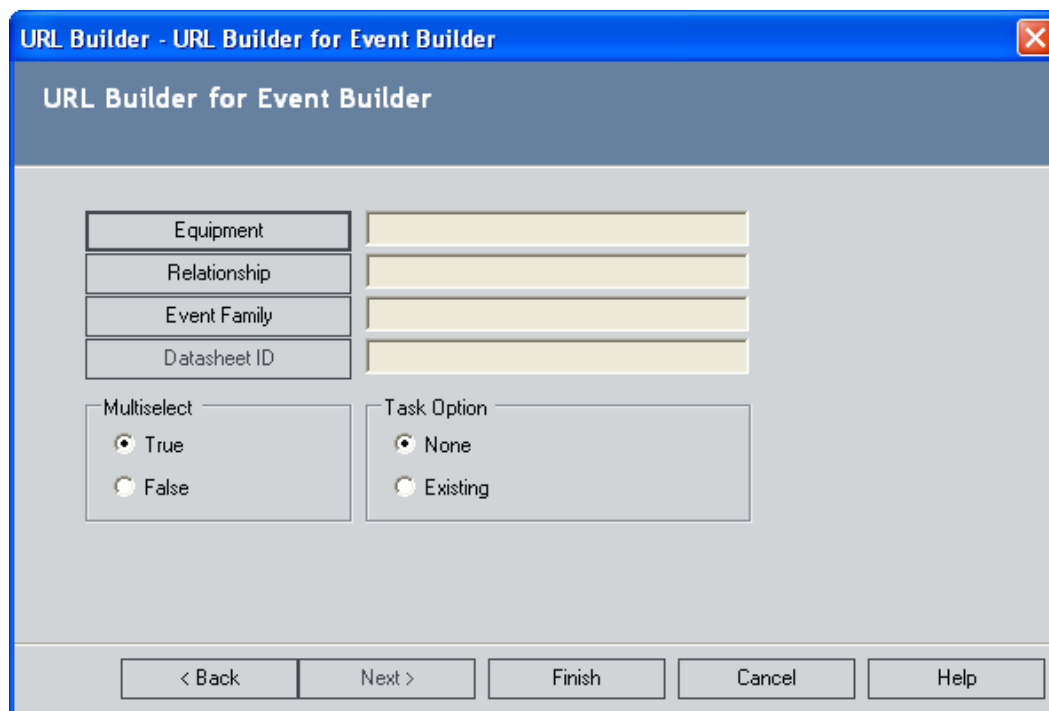
When you create a URL to launch the **Event Builder**, you can specify parameters that determine what information will be automatically supplied to the **Event Builder**. In this way, you can easily create an event that is specific to a given Equipment record, relationship, and event family. You can also determine which datasheet will be used by default.

These instructions assume that you have already accessed the **URL Builder** and have chosen to create an internal Meridium APM URL.

**To complete the steps in the URL Builder to create a link to the Event Builder:**

1. In the **URL Builder**, on the **Select URL** screen, select **EventBuilder** from the list, and click the **Next** button.

The **URL Builder for Event Builder** screen appears, displaying options that let you pass in specific parameters to the **Event Builder**.

All the parameters on this screen are optional. Without parameters, the **Event Builder** URL will launch the Welcome screen of the **Event Builder**, which will take you step-by-step through the process of creating an event. By passing in parameters, the **Event Builder** will skip any step for which information has already been supplied.

Note: At this point, you can click the **Finish** button in the **URL Builder** or complete as many of the following steps as desired.

2. Click the **Equipment** button.

   The **Find Items** page appears.

3. Perform a search to locate the piece of equipment for which to create the event.

4. In the results list, select the desired record, and click the **Open** button.

   The equipment field in the **URL Builder** is populated with the record that you selected.

5. On the **URL Builder for Event Builder** screen, click the **Relationship** button.

The **Select Family** dialog box appears.



6. Click the down arrow, and select the relationship family that will be used to relate the event to the Equipment record.

7. Click **OK**.

   The relationship field in the **URL Builder** is populated with the family that you selected.

8. Click the **Event Family** button.

   The **Select Family** dialog box appears.

9. Select the event that you want to use for creating the event, and click **OK**.

   The event family field in the **URL Builder** is populated with the family that you selected.

10. Click the **Datasheet ID** button.

   Note: This button is enabled only after you have selected an event family.

   The **Select Family** dialog box appears.

11. In the list, select the datasheet that you want to use in the **Event Builder**, and click **OK**.

   The datasheet field in the **URL Builder** is populated with the datasheet name that you selected.

12. If you want the user to be able to link the event to multiple tasks, set the **Multiselect** option to **True**. If not, set it to **False**.

13. In the **Task Options** section:

- If you want the **Task(s) Selection** screen of the **Event Builder** to default to **None**, select the **None** option.

- If you want the **Task(s) Selection** screen of the **Event Builder** to default to **Existing**, select the **Existing** option.

  **Note:** If you choose the **Existing** option, an additional field will appear at the bottom of the screen. Click the **Tasks** button search for a specific task that you want to associate with the event record. After you find the task, click the down arrow to select the task for inclusion in the URL.

14. On the **URL Builder for Event Builder** screen, click the **Finish** button.

Your URL is saved.

**Event Builder URLs**

**Parameters for the Event Builder URL**

The URL for the **Event Builder**, **meridium://EventBuilder**, accepts the parameters described in the following table. Note that a link created from the path alone will launch the **Event Builder**, which will walk you through the process of creating a new Event record.

| Parameter Name | Description | Accepted Value(s) | Notes |
|---|---|---|---|
| DatasheetID | Specifies the datasheet that will be used to display the specified record. | The ID of the datasheet that you want to use for entering event data. | This should be the ID of a datasheet that has been configured for the specified family. |

| Parameter Name | Description | Accepted Value(s) | Notes |
|---|---|---|---|
| **EquipmentEntityKey** | Specifies the Equipment or Functional Location record to which you want to link the specified record. | The Entity Key of the desired Equipment or Functional Location record. | None |
| **RelationshipFamilyKey** | The relationship that will be used to link the specified Equipment or Functional Location record to the specified record. | The Family Key of the desired relationship family. | If you omit the RelationshipFamilyKey parameter, the **Event Builder** will display the **Relationship Selection** screen, where you will need to specify the relationship that you want to use to link the Equipment or Functional Location record to a new Event record.<br><br>If you include the RelationshipFamilyKey parameter, the list of families will include *only* families that participate as successors to the selected Equipment or Functional Location family using the specified relationship family. |

| Parameter Name | Description | Accepted Value(s) | Notes |
|---|---|---|---|
| EventFamilyKey | Specifies the family in which to create the new record. | The Family Key of the desired family. | None |
| FieldIDs | Specifies values that will be used to populate certain fields in the specified record. | The values that will be used to populate the specified fields. | None |
| TaskFamilyID | Specifies the Task family whose records you want to see on the **Task(s) Selection** screen. | The family ID of the desired Task family. | None |
| Multiselect | Determines whether or not you can select multiple Task records to link to the new record. | True False | None |
| TaskEntityKey | Specifies the Task record to which you want to link the new record. | The Entity Key of the desired Task record. | To cause the specified record to be linked to multiple Task records, you can pass in more than one Entity Key, separating each with a comma. |

| Parameter Name | Description | Accepted Value(s) | Notes |
|---|---|---|---|
| **TaskOption** | Determines the default selection on the **Task(s) Selection** screen. | None Existing | • **None** causes the new Event record to be linked to no Task records.<br>• **Existing** displays a list of Task records that are linked to the selected Equipment or Functional Location record on the **Task(s) Selection** screen. When you select one or more Task records from the list, the new record will be linked to the selected Task record(s). |

When you use a URL to launch the **Event Builder**, your position in the builder will depend on which parameters were specified in the URL. For example, if the EquipmentEntityKey parameter is provided in the URL, the **Event Builder** will bypass the step where you have to select an Equipment or Functional Location record. Instead, the Equipment or Functional Location record with the provided Entity Key will be selected automatically in the **Event Builder**.

**Examples of the Event Builder URL**

- meridium://EventBuilder

    Launches the **Event Builder** and displays the **Welcome** screen.

- meridium://EventBuilder**?EquipmentEntityKey=123456**

    Launches the **Event Builder** and displays the **Relationship Selection** screen, where you can select the relationship family that relates the Equipment record with the Entity Key 123456 to the desired Inspection family.
- meridium://EventBuilder?EquipmentEntityKey=123456&**RelationshipFamilyKey=456789**

Launches the **Event Builder** and displays the **Event Selection** screen, where you can select the desired Calibration Event family. The Inspection Event record that is created will be linked to the record with the Entity Key 123456 through the relationship family with the Family Key 456789.

- meridium://EventBuilder?EquipmentEntityKey=123456&RelationshipFamilyKey=456789&**EventFamilyKey=159753**

Launches the **Event Builder** and displays the **Task(s) Selection** screen, where you can select the Task record to which you want the new Inspection record to be linked. The Inspection record that is created will be stored in the family with the Family Key 159753.

- meridium://EventBuilder?EquipmentEntityKey=123456&RelationshipFamilyKey=456789&**TaskFamilyID=MI_TASKINSP**

Launches the **Event Builder** and displays the **Task(s) Selection** screen, where you can select the Task record to which you want the new Calibration Event record to be linked. The Task records that appear will belong to the family with the ID MI_TASKINSP.

- meridium://EventBuilder?EquipmentEntityKey=123456&RelationshipFamilyKey=456789&EventFamilyKey=159753&**TaskOption=Existing&MultiSelect=True**

Launches the **Event Builder** and displays the **Task(s) Selection** screen, where you can select the Task record to which you want the new Inspection record to be linked. The **Existing** option is selected by default, and you can select multiple Task records to link to the Inspection record.

- meridium://EventBuilder?EquipmentEntityKey=123456&RelationshipFamilyKey=456789&**EventFamilyKey=159753**&MI_EVENT_SHRT_DSC_CHR=Calibration 01_01_2009

- Launches the **Event Builder** and displays the **Task(s) Selection** screen. After you select a Task record, the Calibration Event record that appears contains the value *Calibration 01_01_2009* in the field with the ID MI_EVENT_SHRT_DSC_CHR.

# Grids

## Introduction to Grids

Grids appear in various places throughout the Meridium APM applications to help organize the display of information. For example, when you run a query in the Meridium APM Framework application, the results are displayed in a grid.

**Note:** Although grids are used throughout Meridium APM applications, the most enhanced grid functionality is available in the Meridium APM Framework application. While *all* of the features described in this section of the documentation apply to grid functionality in the Meridium APM Framework application, *some* of the features described in this section apply to grid functionality in other Meridium APM applications.

A grid consists of columns and rows, which intersect to create cells. Each cell contains the data, which usually comes from records that are stored in the Meridium APM database.

You can think of a grid as a table. A table consists of columns (vertical) and rows (horizontal), and cells appear where the columns and the rows intersect.

The following image shows a grid in Meridium APM as it may appear when it is first accessed.

| Area Code | Actual Completion Date | Actual Contractor Labor Cost | Actual Contractor Labor Hours | Asset Location |
|---|---|---|---|---|
| 000 | 1/1/2001 12:00:00 AM | 0 | 0 | NORTH PUMP HOUSE WORK STATION . |
| 000 | 1/1/2001 12:00:00 AM | 0 | 0 | F-2000 (SOUTH) CELL NO 3 |
| 000 | 1/1/2001 12:00:00 AM | 0 | 0 | KERO MEROX S/STATION . |
| 000 | 1/1/2001 12:00:00 AM | 0 | 0 | Refinery |
| 000 | 1/1/2001 12:00:00 AM | 0 | 0 | Refinery |
| 000 | 1/1/2001 12:00:00 AM | 0 | 0 | Refinery |
| 000 | 1/1/2001 12:00:00 AM | 0 | 0 | Refinery |
| 000 | 1/1/2001 12:00:00 AM | 0 | 0 | Refinery |
| 000 | 1/1/2001 12:00:00 AM | 0 | 0 | F-2000 (SOUTH) NO 2 CELL |
| 000 | 1/1/2001 12:00:00 AM | 0 | 0 | TRANSPORT AIR RECEIVER 8x12 |
| 000 | 1/1/2001 12:00:00 AM | 0 | 0 | AIR COMPRESSOR K328 |

In most cases in the Meridium APM Framework application, each row in a grid represents an individual record. In some grids, if a column contains values from text fields, a down arrow will appear to the right of each cell, which you can click to display a dialog box that contains all the text in that cell. Depending on where the grid appears, you may have the option of entering data into the grid to modify values in an existing record. Some grids also allow you to create new records by adding new rows. You will know that you can add a new row if a

new blank row appears at the bottom of the grid. When you are viewing a grid where a blank row appears, you can type data in the cells in that row as desired.

In grids that allow you to select rows, you can:

- Select a single row by placing your cursor in the small box to the left of the first cell.

- Select multiple rows by using the Ctrl or SHIFT keys on your keyboard.

- Select all rows by using the Ctrl+A keys on your keyboard.

In most cases you can customize the *appearance* of the grid using various customization options.

On some pages, the changes that you make to the appearance of a grid will be saved automatically and used for displaying the grid the next time that you access it. For example, in Thickness Monitoring, if you sort a column in the grid on the **TM Measurement Data Entry** page, the next time that you view that grid, you will see the sort order that you applied. For details on where grid customizations will be saved automatically, see the documentation for that feature.

In addition to grid customization options that are saved automatically, in some grids, you have the option of manually saving the changes that you make.

# Customizing the Grid Layout

### About Customizing the Grid Layout

The *grid layout* refers to the structure of the grid itself, such as the columns that are displayed, the order in which they are displayed, and any grouping that has been applied. Specifically, to customize the grid layout, you can:

- Add or remove columns.

- Rearrange the columns.

- Adjust the width of the columns.

- Apply grouping.

- Sort the columns.

- Reset the grid layout.

These options are accessible from a shortcut menu that appears when you right-click in the grid, as shown in the following image.
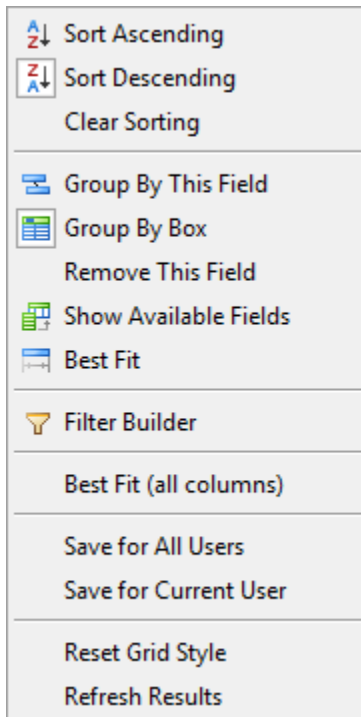


Depending on where you right-click the grid, the options that appear on the shortcut menu will vary. You will know that an option is selected when an outline appears around the icon to the left of the option. After you have modified the layout of a grid and achieved the desired appearance, you can save the grid layout, if desired.

Note: Some layout customization options may not be available in every grid.

Changing the Column Layout

Adding or Removing Columns

When a Meridium APM product or feature provides a grid that displays values that are stored in records in the database, the Meridium APM system provides a

default column arrangement, or group of field values that are displayed in the grid. You can modify this column arrangement by adding to or removing columns from the grid.

**To add a column to a grid:**

1.  Right-click any current column header, and click **Show Available Fields** on the shortcut menu.

    The **Available Fields** dialog box appears.

2.  Use the vertical scroll bars to view all the available fields. Or, click the bottom edge of the dialog box and drag it to expand the view of the fields.

3.  In the **Available Fields** dialog box, click the desired field, and then drag it to the column header in the grid.

    Before you release the mouse button, another column header is outlined to indicate that the selected field will be added to the grid to the *left* of the outlined field.

    After you release the mouse button, the column is added to the grid.

**To remove a column from a grid:**

1.  Click the column header, and drag it to an area outside of the grid until you see an X over the column header.

2.  Release the mouse button.

The column is removed from the grid.

## Rearranging the Order of Columns

**To change the order of the columns that are displayed in a grid:**

1.  Click the header of the column that you want to move.

2.  Drag the column header to the desired location in the grid.

The column appears in the selected location.

> **Note:** The placement of some columns is hard-coded to ensure the most logical display of these field values. These columns cannot be moved.

## Adjusting the Width of Columns

**To adjust the width of a single column width:**

* Pause on the column divider. When the double arrow appears, click the divider, and drag it to the right or left as desired.

  -or-

* Right-click the column header of the column whose width you want to adjust, and click **Best Fit**.

  The width of the selected column is adjusted automatically to allow the longest value in that column to be displayed.

**To adjust the widths of ALL columns:**

* Right-click any column header, and click **Best Fit (all columns)**.

  All column widths in the grid are adjusted to fit appropriately within the display area.

Applying Grouping to Grids

About Applying Grouping to Grids

You can group grids by using one of the following options:

- Grouping a grid by a field in the results.

- Creating multiple grouping levels.

- Expanding or collapsing a grouped list.

- Clearing grouped selections.

The Grouping Area

About the Grouping Area

When the **Group By Box** option is selected, a box appears above the column headers and displays the column by which the results are grouped or the text **Drag a column header here to group by that column** if the results are not yet grouped. Throughout this documentation, this area is referred to as the *grouping area*.

When you are viewing some grids, the grouping area is displayed by default. If the grouping area is not displayed, you can right-click a column header and click **Group By Box** to display it. If desired, you can also remove the grouping area.

Displaying the Grouping Area

**To display the grouping area:**

- Right-click a column header, and click **Group By Box**.

  The grouping area appears above the column headers.

Removing the Grouping Area

If desired, you can remove the grouping area that appears above a grid.

**To remove the grouping area:**

- Right-click a column header, and click the selected **Group By Box** option.

  The grouping area above the column headers is removed.

**Grouping Grids**

About Grouping a Grid

The way in which you group a grid will depend on whether or not the grouping area is displayed.

If the grouping area is displayed, you can drag and drop the desired column header to the group by box area. If the grouping area is not displayed, you will need to use the shortcut menu that appear when you right-click a column-header in the grid.

Grouping a Grid When the Grouping Area is Displayed

The following instructions assume that the **Group By Box** option is selected, which displays the grouping area above the grid.

**Note:** If the **Group By Box** option is not selected, when you drag a column where you see a large black X on top of the column header, the field will be removed from the grid completely. You can add it back to the grid using the **Show Available Fields** option.

**To group a grid when the grouping area is displayed:**

- Click the column header for the column by which you want to group the results, and drag it above the other column headers to the grouping area.

  The selected column header appears above the other column headers, and the results are grouped by that column. For example, the following figure shows an example of query results that have been grouped by Work Order Status Code.

You can click any plus sign (+) to expand the results and see the members of that group. You can ungroup the results by clicking the field and dragging it back down into the column header area.

Grouping a Grid When the Grouping Area is Not Displayed

**To group a grid by a column in the results when the grouping area is not displayed:**

1. Right-click the column header for the column that you want to use for grouping.

2. On the shortcut menu, click the **Group By This Field** option.

   The Meridium APM system groups the results by the selected column. For example, the following figure shows an example of grid results that have been grouped by Work Order Status Code.



After you have grouped the results, the grouping field appears above the other column headers. You can click any plus sign (+) to expand the results and see the items in that group. You can ungroup the results by clicking the column and dragging it back down into the column header area.

Note: If an Alias is not defined for one or more fields in a query, when you group the query results, counts do not appear in the results. To make sure that counts will appear, make sure that every field in the query design grid has an Alias.

Creating Multiple Grouping Levels

These instructions assume that you have already created the first level of grouping.

**To group a grid by more than one column:**

- Right-click the column header that you want to use as the second level of grouping, and click **Group By This Field**. Continue grouping the data until you have created all the necessary levels.

  As you select additional columns by which to group the results, they are added to the grouping indicators, which appear above the column headers. As you add grouping levels, the Meridium APM system generates a tree structure on the grid to allow you to view each level. The following image is an example of the tree structure of a grid grouped by *Activity Type* and *Request Type Code*.
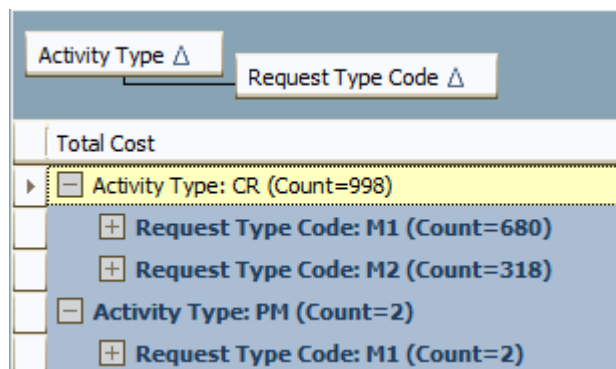


Expanding and Collapsing a Grouped Grid

If the results in a grid have been grouped, you can expand any grouping level by clicking the plus sign (+) located next to a collapsed level. After a level has been expanded, you can collapse it by clicking the minus sign (-).

Alternatively, you can right-click the area where the grouping indicators are displayed and click:

- **Full Expand:** To expand all of the groupings in the list so that you can select an item in the list.

- **Full Collapse:** To collapse all of the groupings in the list.

**Note:** If a grouped grid is collapsed and you print the grid, the printed copy will show the groups *expanded* rather than collapsed.

## Clearing Grouping Selections

**To remove any grouping that you have applied to a grid:**

- In the area that displays the grouping indicators above the column headers, right-click the column header that you want to remove, and click **Ungroup**.
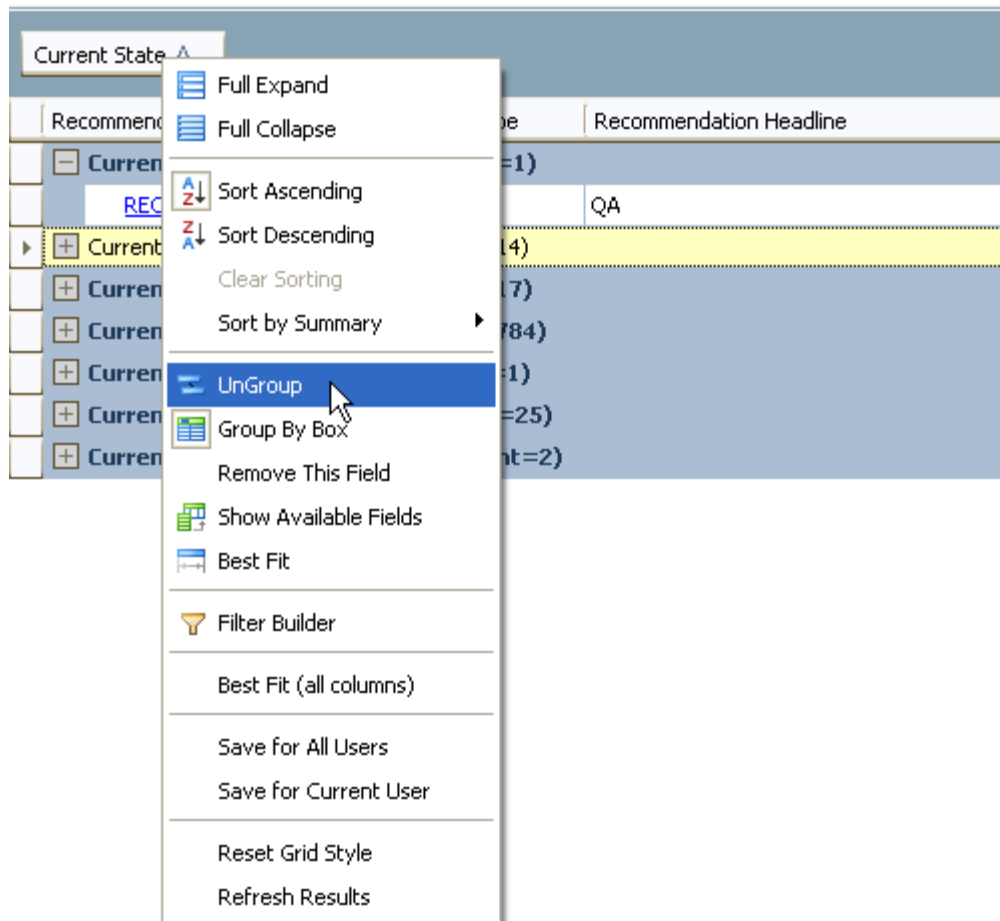


-or-

- In the area that displays the grouping indicators above the column headers, click the column that you want to remove, and drag it back down the column header.

Additionally, you can clear *all* grouping selections by right-clicking the area above the column headers and clicking **Clear Grouping**.
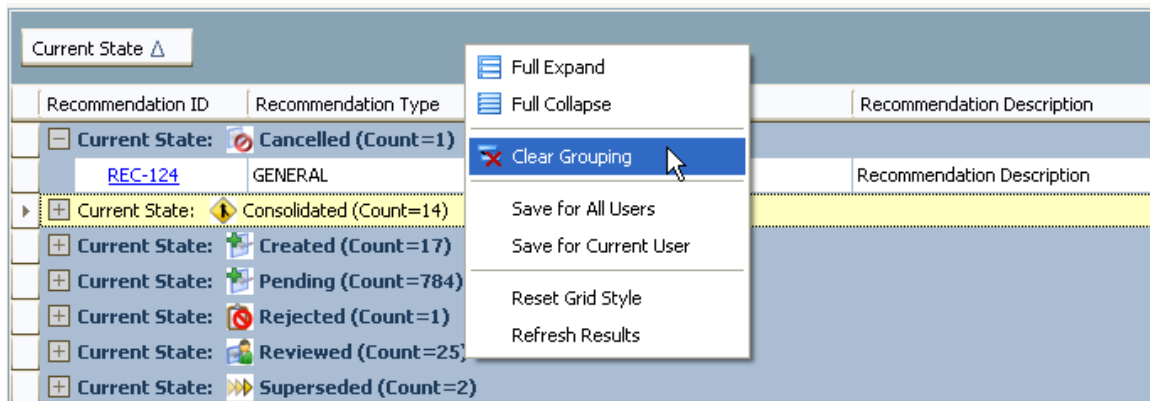


## Sorting a Grid According to the Number of Items in Each Group

After you group a grid by a field in the results, the grid displays a numeric value next to each grouping header to indicate the number of rows within that group. If desired, you can sort the results by these numeric values. For example, consider the following grid, which is grouped by Current State.



You can see that one item in the results is Cancelled, fourteen items in the results are Consolidated, and so on. You might want to sort the results by the number of items in each group in either ascending or descending order. Consider the following image, which displays the same grid where the results have been sorted in ascending order according to the number of items in each group.

**To sort a grouped grid according to the number of items in each group:**

1. Right-click the grouping field that appears above the column headers.

2. Point to **Sort by Summary**, and click:

   - **Count by - <Grouped Field> - Sort Ascending** to sort the results in ascending order.

     -or-

   - **Count by - <Grouped Field> - Sort Descending** to sort the results in descending order.

     …where **<Grouped Field>** is the field caption of the field by which the grid is grouped. Note that if the grid uses multiple levels of grouping, **<Grouped Field>** is the field caption of the *first* field by which the grid is grouped.

   The results are sorted.

   > **Hint:** To clear the sorting, you can right-click the grouping field and click **Clear Summary Sorting**.

**Sorting Data in a Grid**

Regardless of the default sorting that has been applied to a grid, you can re-sort the list by applying different sorting criteria. Sorting is available for columns that contain data from numeric, character, logical, and date fields. Sorting is not available on columns representing text fields.

**To sort the contents of a grid:**

1. Right-click the column heading for the field by which you want to sort the results.

   -or-

   If you want to sort by a field that you have used for grouping, right-click the field in the grouping area (above the column headers).

2. On the shortcut menu, click:

   - **Sort Ascending:** To resort the results in ascending, alphanumeric order.

   - **Sort Descending:** To re-sort the results in descending, alphanumeric order.

   The values are sorted appropriately.

**Hint:** You can also click the arrow button in the column header to toggle the sort order. When a down arrow is displayed in a column header, clicking the header will sort the items in the column in ascending order and the arrow will point upward. When an up arrow is displayed on a column header, clicking the header will sort the items in descending order, and the arrow will point downward.

**Resetting the Grid**

When you reset the grid, you remove customizations that have been applied and saved to the grid.

**Note:** After you reset the grid, the customizations that you were viewing before you reset the grid *cannot* be recovered.

**To reset the grid:**

- Right-click any column header, and click **Reset Grid Style**.

   The grid is reset. In most cases, the grid will be reset to the layout that you were viewing before you made any changes to it. In some cases, however, depending on the type of user that you are (Super User or non-

Super User), the type of grid that you are viewing, and the module that you are working in, the layout might be different than it was before you changed it.

In either case, after you reset the grid, you can make changes to it again.

**Applying Filters to Grids**

**About Applying Filters to Grids**

You can apply filters to grids using the following options:

* The basic filter.

* The Filter Editor.

**Note: You cannot filter a grid by a value in a text field.**

**Applying a Basic Filter**

**To apply a basic filter to a grid:**

1. In the column header of the column that you want to use for filtering, click the ▣ button. This is the right-most button. Note that the arrow to the left of this button indicates the sort order.

2. In the list that appears, select the desired filtering option. Choose from the following options:

    * **All:** Indicates that no filter is applied. You can select this option to remove any currently applied filters. Note that this option appears only *after* a filter has been applied to the column.

    * **Custom:** Allows you to use the Custom AutoFilter

    * **Blanks:** Filters the list to display only the items that do not have a value in the field represented by the selected column.

    * **Non-Blanks:** Filters the list to display only the items that DO have a value in the field represented by the selected column.

- **A value:** Filters the list to display only the items that contain the selected value in the field represented by the selected column.

> **Note:** If you are applying a filter to a column that displays a custom icon (e.g., the **Flag** column in the **Proposed Strategy** section on the **ASM - Asset Strategy Actions - [Strategy ID]** page), the icons will not be displayed. Instead, blank rows will appear, which you can click to filter the grid by a specific icon. You will not know from the blank rows, however, which row represents which icon.

**Filter Editor**

About the Filter Editor

In some grids, you can specify criteria using the Filter Editor feature to limit the results that are displayed.

Accessing the Filter Editor Window

**To access the Filter Editor window:**

- In the grid, right-click the column header that you want to use for filtering, and click **Filter Builder**.

  The **Filter Editor** window appears, displaying the available filtering conditions.

  Note that the first time that you access the **Filter Editor** window, a condition for the column that you right-clicked appears by default. You can modify the default condition or add new conditions to limit the list of results further.

Operators to Use When Filtering a Grid

The following table describes the available operators that you can use when filtering grid results.

| Purpose | Operator | Custom AutoFilter | Filter Editor | Example | Results |
|---|---|---|---|---|---|
| Returns results if the column displays an exact value. | Equals | Yes | Yes | Equals RCM | Returns results where the value in the selected column is *exactly* RCM. |
| Returns results if the column does not display a specified value. | Does not equal | Yes | Yes | Does not equal RCM | Returns results where value in the selected column is not RCM. |
| Returns results if the column displays a value that is greater than the specified value. | Is greater than | Yes | Yes | Is greater than 10 | Returns results where the value in the selected column is greater than 10.<br><br>The specified value must be numeric. If you specify a character value, an error message appears. |

| Purpose | Operator | Custom AutoFilter | Filter Editor | Example | Results |
|---------|----------|-------------------|---------------|---------|---------|
| Returns results if the column displays a value that is greater than or equal to the specified value. | Is greater than or equal to | Yes | Yes | Is greater than or equal to 10 | Returns results where the value in the selected column is greater than or equal to 10.<br><br>The specified value must be numeric. If you specify a character value, an error message appears. |
| Returns results if the column displays a value that is less than the specified value. | Is less than | Yes | Yes | Is less than 10 | Returns results where the value in the selected column is less than 10.<br><br>The specified value must be numeric. If you specify a character value, an error message appears. |

| Purpose | Operator | Custom AutoFilter | Filter Editor | Example | Results |
|---|---|---|---|---|---|
| Returns results if the column displays a value that is less than or equal to the specified value. | Is less than or equal to | Yes | Yes | Is less than or equal to 10 | Returns results where the value in the selected column is less than or equal to 10.<br><br>The specified value must be numeric. If you specify a character value, an error message appears. |

| Purpose | Operator | Custom AutoFilter | Filter Editor | Example | Results |
|---------|----------|-------------------|---------------|---------|---------|
| Returns results if the column displays a value that is between two specified values. | Is between | No | Yes | Is between 1/1/2000 and 1/1/2005 | Returns results where the date in the selected column is between January 1, 2000 and January 1, 2005.<br><br>If the selected column displays dates, then you must specify a date value. If the selected column displays numeric values, then you must specify a numeric value. Note that if you specify a character value where the column displays numeric values, no results will be displayed in the query when the filter is applied. |

| Purpose | Operator | Custom AutoFilter | Filter Editor | Example | Results |
|---|---|---|---|---|---|
| Returns results if the column displays a value that is not between two specified values. | Is not between | No | Yes | Is not between 1/1/2000 and 1/1/2005 | Returns results where the date in the selected column is not between January 1, 2000 and January 1, 2005.<br><br>If the selected column displays dates, then you must specify a date value. If the selected column displays numeric values, then you must specify a numeric value. Note that if you specify a character value where the column displays numeric values, no results will be displayed in the query when the filter is applied. |
| Returns results if the column displays a specified value *anywhere* in the text. | Contains | No | Yes | Contains R | Returns results where the value in the selected column contains the character R anywhere in the text. |

| Purpose | Operator | Custom AutoFilter | Filter Editor | Example | Results |
|---------|----------|-------------------|---------------|---------|---------|
| Returns results if the column does not display the specified value *anywhere* in the text. | Does not contain | No | Yes | Does not contain R | Returns results where the value in the selected column does not contain the character R anywhere in the text. |
| Returns results if the column displays a value that begins with the specified character(s). | Begins with | No | Yes | Begins with R | Returns results where the value in the selected column begins with the character R. |
| Returns results if the column displays a value that ends with the specified character(s). | Ends with | No | Yes | Ends with R | Returns results where the value in the selected column ends with the character R. |
| Returns results if the column displays a value where the specified character is located somewhere within the text. | Is like | Yes | Yes | Is like 34% | Returns results where the value in the selected column contains begins with the characters 34, followed by any combination of characters. |

| Purpose | Operator | Custom AutoFilter | Filter Editor | Example | Results |
|---------|----------|-------------------|---------------|---------|---------|
| Returns results if the column displays a value where the specified characters are not located anywhere within the text. | Is not like | Yes | Yes | Is not like 34% | Returns results where the value in the selected column does not begin with the characters 34. |
| Returns results if the column does not display any values. | Is blank | Yes | Yes | Is blank | Returns results where the selected column does not contain any values. Note that if you are using the Custom AutoFilter, this operator is labeled **Blanks**. |
| Return query results that contains any value in a selected column. | Is not blank | Yes | Yes | Is not blank | Returns results if the column displays any value. Note that if you are using the Custom AutoFilter, this operator is labeled **Non-Blanks**. |

| Purpose | Operator | Custom AutoFilter | Filter Editor | Example | Results |
|---------|----------|-------------------|---------------|---------|---------|
| Returns results if the column displays any of the specified values. | Is any of | No | Yes | Is any of (1/1/2000, 1/1/2001, 1/1/2002) | Returns results where the value in the selected column is January 1, 2000, January 1, 2001, or January 1, 2002. |
| Returns results if the column does not display any of the specified values. | Is none of | No | Yes | Is none of (1/1/2000, 1/1/2001, 1/1/2002) | Returns results where the value in the selected column is not January 1, 2000, January 1, 2001, or January 1, 2002. |
| Returns results if the column displays values that meet multiple specified conditions. | And | Yes | Yes | And<br>• Last Updated Equals January 1, 2000<br>• Updated By Does not equal Meridium APM Administrator | Returns results where the value in the Last Updated column is January 1, 2000 and the value in the Updated By column is not Meridium APM Administrator. |
| Returns results if the column displays values that meet one condition or another. | Or | Yes | Yes | Or<br>• Last Updated Equals January 1, 2000<br>• Last Updated Equals January 2, 2000 | Returns results where the value in the Last Updated column is January 1, 2000 or January 2, 2000. |

| Purpose | Operator | Custom AutoFilter | Filter Editor | Example | Results |
|---|---|---|---|---|---|
| Returns results if the column displays value that do not meet multiple specified conditions. | Not And | No | Yes | Not And<br>• Last Updated Equals January 1, 2000<br>• Updated by Equals Meridium APM Administrator | Returns results for any of the following situations:<br>• The date in the Last Updated column IS January 1, 2000 but the value in the Updated By column is not Meridium APM Administrator.<br>• The date in the Last Updated column is not January 1, 2000 but the value in the Updated By column IS Meridium APM Administrator.<br>• The date in the Last Updated column is not January 1, 2000 and the value in the Updated By column is not Meridium APM Administration. |

| Purpose | Operator | Custom AutoFilter | Filter Editor | Example | Results |
|---|---|---|---|---|---|
| Returns results if the column displays values that do not meet one condition or another. | Not Or | No | Yes | Not Or<br>• Last Updated Equals January 1, 2000<br>• Updated By Equals Meridium APM Administrator | Returns results were BOTH of the following statements are true:<br>• The date in the Last Updated column is anything *other than* January 1, 2000.<br>• The value in the Updated by column is anything *other than* Meridium APM Administrator. |

Adding a Filter Using the Filter Editor Window

**To apply filters using the Filter Editor window:**

1. Access the **Filter Editor** window.

   Note that the first time that you access the **Filter Editor** window, a condition appears by default.

2. To modify the default condition:

   • Select the column header value to which you want to apply criteria.

   • Select the desired operator.

   • Specifying the field value to which you want to apply the corresponding operator. Note that if the column header that you selected is an alphanumeric field, then the text **<enter a value>**

will appear in place of the corresponding field value. When you click the text **<enter a value>**, a text box will appear, where you can type the desired value. If the column header that you selected is a date field, then the text **<enter a value>** will become a Calendar when you click on it.

3. To add a new condition, click the  button to the right of the default **And** operator.

   A new condition appears below the default condition.

4. Modify the new condition by selecting the desired column header value, operator, and field value.

5. Repeat steps 3 and 4 for each condition that you want to add.

6. Click **OK**.

   The grid results are filtered based on the specified conditions.

Removing a Filter from the Filter Editor Window

**To remove a filter from the Filter Editor window:**

1. Access the **Filter Editor** window.

2. Click the  button to the right of the condition that you want to remove.

   -or-

   If you want to remove ALL conditions, click the first-level operator, and select the **Clear All** option.

   The condition(s) are removed from the **Filter Editor** window.

3. Click **OK**.

   The grid results are updated.

**Note:** You can also clear a filter from the grid by right-clicking the column header.

## Clearing a Filter

**To clear a filter that has been applied to a grid:**

- In the column header from which you want to clear a filter, click the ▾ button, and click **All**.

  -or-

- Right-click the column header in the column from which you want to clear a filter, and click **Clear Filter**.

## Saving Grid Customizations

### About Saving the Grid Layout

After you have customized the layout of a grid, you may be able to save the layout so that the next time you (or other users) access the grid, you (or they) will see that same layout. The option to save the grid layout is not available in all grids. You will know that you can save the layout when the save options appear on the shortcut menu (highlighted in red in the following image).
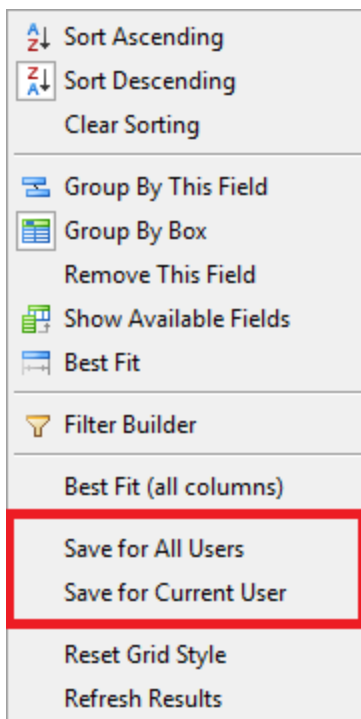


Two options are available for saving the grid layout:

- **Save for All Users:** Saves the current gird layout for ALL users (i.e., creates a Super User layout for the grid). This option appears only if you are a Super User.

- **Save for Current User:** Saves the current grid layout for you (i.e., creates a personal layout for the Security User who is current logged in). This option appears for ALL users.

Note: Saving the grid layout will save any layout customizations that have been defined. Filters will not be saved as part of the grid layout.

**Levels of Grid Layout Customization**

After a grid layout has been customized, that layout can be saved as a property of the grid so that it is used the next time the grid is displayed. The following levels of grid layout customization are available:

- **Default:** No Customization at all. You can think of the default layout as the layout that you would see if you created a query and ran it without making adjustments to the layout after the results were initially displayed (as a flat layout with columns and rows).

- **System Layout:** The customized layout that has been provided as a baseline property of the grid and delivered with the baseline Meridium APM product. If a system layout has been provided, it will override the default layout.

- **Super User Layout:** The customized layout that has been configured and saved by a Super User *for all users*. The Super User layout will override the default and system layouts.

- **Personal Layout:** The customized layout that has been configured and saved by a Security User *for that user*. The personal layout will override all other layouts (Super User, system, and default). In other words, when a personal layout has been saved, that user will see that layout whenever he or she views the grid.

You can think of these layers of layout customization as shown in the following image.
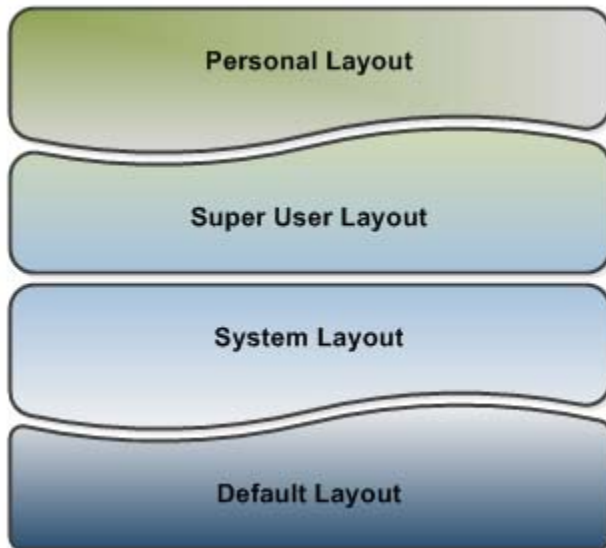
When a user views a grid, the *highest* level of customization will always be displayed.

- If a personal layout is available, the personal layout will be displayed.

- If a personal layout is not available but a Super User layout is available, the Super User layout will be displayed.

- And so on…

For grids with customized layouts, you can use the **Reset Grid Style** option on the shortcut menu to displays the next *lowest* level of customization available. For example, if when you are viewing a that has *both* a personal layout and a Super User layout, when you use the **Reset Grid Style** option, the Super User layout will be displayed.

### Saving a Customized Grid Layout for Yourself

After you customize the layout of a grid, you can save the customized grid layout for yourself, meaning that the next time you view that grid, you will see the layout that you last saved. The ability to save the grid layout is not available for all grids. You will know that you can save the grid layout if the **Save for Current User** option appears on the shortcut menu.

Note: Using the **Save for Current User** option will create a personal layout for the grid that will override all other layouts and will be displayed whenever you access the same grid.

**To save a customized grid layout for yourself:**

1. Right-click anywhere in the grid.

   The shortcut menu appears.

2. On the shortcut menu, click **Save for Current User**.

   The customized grid layout is saved so that the next time you view the grid, you will see those customizations.

### Saving a Customized Grid Layout for All Users

If you are logged in to the Meridium APM Framework application as a Super User, you can save a customized grid layout for yourself and other users. You will know that you can save the grid layout if the **Save for All Users** option appears on the shortcut menu.

**Note:** Using the **Save for All Users** option will create a Super User layout that will appear for any user who has not saved a personal layout for the same grid.

**To save a customized grid layout for all users:**

1. Right-click anywhere in the grid.

   The shortcut menu appears.

2. On the shortcut menu, click the **Save for All Users** option.

   The customized grid layout is saved so that it will be displayed to you and to users who have not previously saved their own customizations to the same grid.

### Refreshing Results Displayed in a Grid

If you want to refresh the *results* that are displayed in the grid to make sure that you are seeing the most current data available, you can do so from the shortcut menu.

Note that if you have made modifications to the grid by changing the results that are returned (e.g., you filtered the grid using the Filter Editor), refreshing the results will not undo these modifications.

**To refresh the results displayed in a grid:**

- Right-click any column header, and click **Refresh Results**.

  The Meridium APM system retrieves the most current data in the database and displays the results in the grid.

## Adding Rows to a Grid

The following instructions provide details on adding rows to a grid. Note that not all grids allow you to add rows (e.g., the grid that appears in the query results).

**To add a row to a grid:**

- In the last cell on the row where you are currently working, press the Tab key.

  -or-

- Click below the row that you are currently working in.

  A new blank row appears at the bottom of the grid.

# Data Structure

## Introduction to the Meridium APM Data Structure

Before you can begin working in Meridium APM, you must understand some fundamental concepts about how information is stored and organized in the Meridium APM database, including:

- What entity families and relationships families are and how they correspond to database tables.

- How families are organized to build a hierarchy.

- What records are, how they relate to families, and how they are stored in the database.

- What datasheets are and how they related to records.

- What data spreading is and how you can use it to streamline the construction of your data model.

## Families and Fields

### Families

### What Is a Family?

In Meridium APM, a *family* is an organizational unit that helps classify data in the database. Meridium APM uses two types of families: entity families and relationship families. Families serve to organize information within the database and to help end users locate and classify similar data.

Each Meridium APM family has a corresponding table in the database. Family tables are used to store all the data belonging to a given family, where each row in a family table corresponds to a record in that family.

Meridium APM provides many families, both entity families and relationship families, in the baseline Meridium APM database. In addition, you can create your own families. The power behind families is in their flexibility. You can create as many families as you need to categorize all of your records. In addition, you can assign families whatever names are appropriate for classifying the type of data that they will store for your organization.

## What Is the Family Hierarchy?

In Meridium APM, entity families can be organized into a hierarchy so that one family is defined as a subfamily of another family. By creating a hierarchy, you can enhance clarity.

When you look at the baseline Meridium APM database, you will see that some families are further divided into subfamilies. For example, the Recommendation family contains several subfamilies that define the types of Recommendation records that you can create.



As you customize your database, you will need to look at all of the different groupings of items that you will manage in Meridium APM. Then you need to divide these items and name each group, which will become your families. Next, you need to look for situations where one item is a type of another item. In some cases, you may want to create a family that helps form your hierarchy but to which you would not directly save records. In the end, you will probably have a number of families.

Consider an example where you create four families: Failure, Equipment Failure, Shutdown. These three families are distinctly different, but they also share some commonality: a shutdown is a type of equipment failure and equipment failure is a type of failure.

If you set up your hierarchy so that all of these families are stored at the root level along with all other families, there would be no connection between one family and another to organize the families logically. A better choice would be to set up families and subfamilies. The hierarchy would look like this:
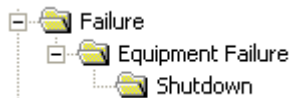


In this example, the Failure family is the root family of the Equipment Failure family, and the Equipment Failure family is the root family of the Shutdown family.

Each root level will be useful for defining data that is common to its sub-levels. In addition, the metadata is well ordered based on the type of data that is being collected. You will probably find it easier to organize your database on paper prior to creating it within the Configuration Manager, since it is not an easy task to change designations after the other metadata elements have been created.

## Entity Families and Relationship Families

Meridium APM uses two types of families: entity families and relationship families.

An *entity family* is an organizational unit that is used for classifying elements within your organization. Records belonging to entity families store information that is related to physical items (equipment, people, analyses, inspections, etc.) in your company or facility. For example, *Full Inspection* is an entity family that Meridium APM provides in the baseline database. An individual Full Inspection would be one entity belonging to that family. Each entity family has a corresponding entity family *table* in the Meridium APM database. Entity family records are what you view and manage in the Meridium APM Record Manager.

A *relationship family* corresponds to a database table that is used to connect two entity family tables. *Relationship definitions* can be defined for each relationship family to specify the entity families to which it relates. For

example, in the baseline Meridium APM database, the Has Reference Documents relationship family relates the Full Inspection entity family with the Reference Document entity family.

When two entity families have been related to one another through a relationship family, records within those entity families can be linked, meaning that a connection can be created between the two records. For example, a Full Inspection record might be linked to a Reference Document record that stores information about the item that was inspected. The link itself is defined by a record that is stored in the Has Reference Documents relationship family table.

# About Families Delivered with Read-Only Properties

Baseline families can be delivered with read-only properties such that you will be prevented from performing any of the following actions on the family:

- Modifying certain properties of the family.

- Customizing the family's rules.

- Creating new fields for the family.

- Customizing certain properties for the family's fields.

- Deleting the family's fields.

- Deleting the family.

In other words, families that are delivered in this way can be managed only by Meridium, Inc.

Note: Families that are delivered in this way exist to support specific workflows within a module or feature and are documented in the context of the module or feature they support.

In the Configuration Manager, when you select a family that has been delivered in this way, the properties that you cannot modify will be displayed as read-only in the interface. In addition, some options that allow you to customize the family or its fields will be disabled. The following table lists the UI elements that are disabled when you select a family that has been delivered with read-only properties.

| Location in the Configuration Manager | Interface Element |
|---|---|
| **Family Information** section on the right side of the **Meridium APM Configuration Manager** main window. | **ID** text box |
| **Physical Storage** section on the right side of the **Meridium APM Configuration Manager** main window. | • **Physical Table Name** text box<br>• **Physical Storage Location** text box<br>• **Physical Table Storage Parameters** text box<br>• **Database View Name** text box |
| **Tasks** section on the right side of the **Meridium APM Configuration Manager** main window. | **Delete Family** link |
| **Manage Family Fields** window | • **Create New Field** link<br>• **Delete Field(s)** link<br>• **Rules Wizard** link |
| **View/Edit Field Properties** window | • **Data Type** list<br>• **UTC** check box<br>• **Unit of Measure** list<br>• **Field ID** text box<br>• **Edit Length** text box<br>• **Number of Values per Field** text box<br>• **ID Field** check box<br>• **Spread to subfamilies** check box<br>• **Hyperlink Field** check box<br>• **Formula Field** check box<br>• **Keep History?** check box<br>• **Is Active?** check box |
| **View/Edit Field Properties** window | **Save As New** button |

In addition, while you can view the rule projects for a family, if you try to change those rules, a message will appear, indicating that you cannot modify the rules.

## About Families Managed by Product Modules

Baseline entity families can be delivered with their *Family Is Managed By Product Module* property set to *True* such that records in that family can be managed using only the module that the family supports. In other words, you

cannot use the Record Manager or Bulk Data Form to create, delete, or modify records in families with this property setting.

While you can *view* records in these families via the Record Manager and Bulk Data, the datasheet and the options that allow you to create or delete records will be disabled.

More specifically, in the Record Manager, the datasheet will be disabled, and a link will be displayed above the **Datasheet** list, which you can click to view that record within the module that the family supports. The text that appears for this link will vary for each record and is displayed in the format **<Record ID>** (**<Family Caption>**), where **<Record ID>** is the Record ID for the record and **<Family Caption>** is the family caption of the family to which the record belongs. For example, the following image shows the link that appears above the **Datasheet** list in the Record Manager when you are viewing an *RCM FMEA Failure Mode* record.



Likewise, in the Bulk Data Form, the grid will be disabled so that you cannot modify any of the values in the grid. A hyperlink is not displayed above the grid in the Bulk Data Form, however, because you are viewing multiple records at one time. If you want to open a given record in the module to which it belongs, you can open that record in the Record Manager first, and then click the hyperlink that is displayed above the datasheet to open the record in the corresponding module.

In addition, in both the Record Manager and the Bulk Data Form, the following links and buttons that appear on the **Datasheet** toolbar and **Common Tasks** menu will be disabled:

- **Delete**

- **Save**

- **New**

- **Save and New**

- **Copy**

Baseline families that are delivered with this property setting exist to support specific modules and are documented within the context of that module.

## About Families with Authentication Required

Families can be configured such that authentication is required to create or update records in that family. When authentication is required, Security Users will need to retype their password before they can save changes to records in that family. In this way, an *electronic signature* is provided for these changes, which indicates that the Security User is accountable for any actions recorded under that signature (i.e., changes to data).

To configure a family in this way, you can set the *Authentication Required to Insert or Update Records* family property to *True*. Note that setting this property to true for a parent family does not change this setting automatically for its subfamilies. After this property is set, the next time a Security User tries to save changes to an existing record or create a new record in that family, a dialog box will appear, prompting the Security User for their password. If the password that the Security User enters does not match the password stored for that Security User, a message will appear, indicating that the authentication failed, and the record will not be saved. The following image shows an example of what this dialog box looks like. Notice that the User ID value is read-only and populated automatically with the User ID of the Security User who is currently logged in.
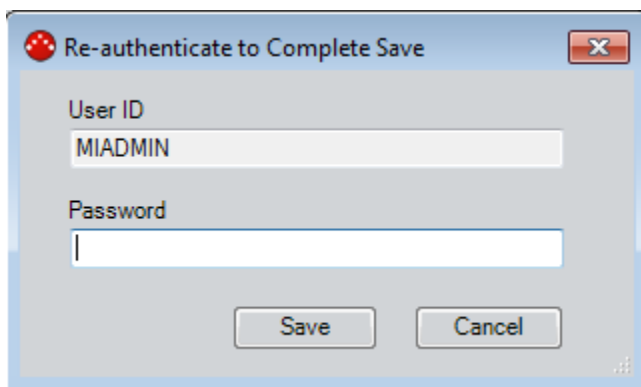


**Note:** If you create or modify multiple records from the same family and save them at the same time, the **Re-authenticate to Complete Save** dialog box will appear only one time so that you can authenticate all the records at once.

Revision history is also enabled automatically for families with this setting, and the following additional details are displayed on the **Field Change History** dialog box for the records in these families:

- **Record Created By:** The name of the Security User who created the record originally.

- **Record Created On:** The date and time on which the record was created originally.

The following image shows an example of what the **Field Change History** dialog box looks like for a family whose *Authentication Required to Insert or Update Records* property is set to *True*. A red outline has been added to this image to highlight the additional information that is displayed for records belonging to families that require authentication.
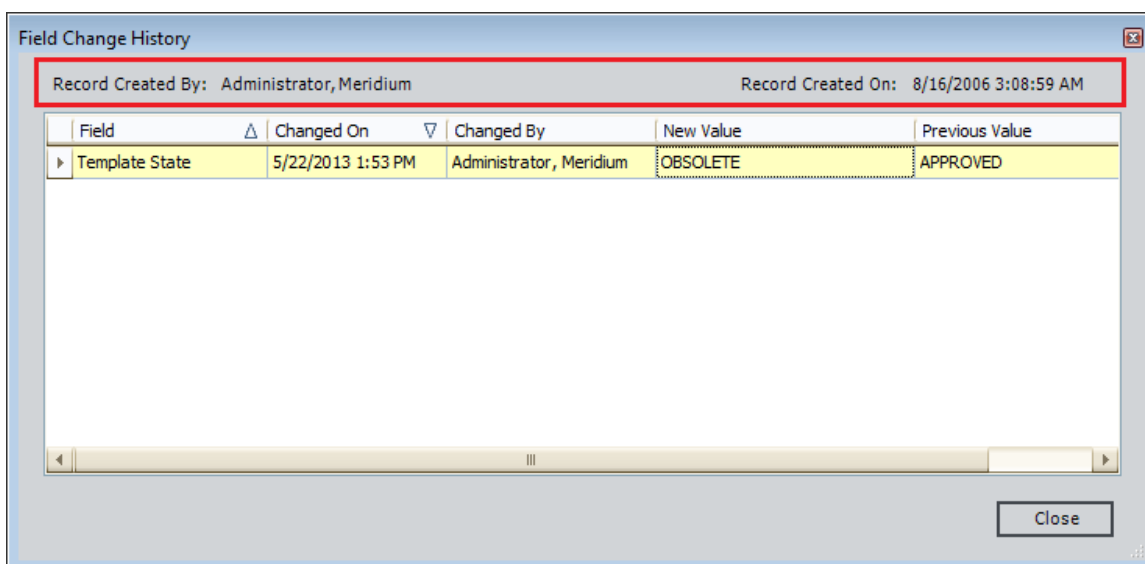


*No* baseline family is delivered with the Authentication Required to Insert or Update Records property setting set to *True*.

# Fields

## What Are Fields?

*Fields* represent the individual pieces of information that will be stored for records belonging to a given family. For example, records stored in the Full Inspection family will contain information related to full inspections. Therefore, the Full Inspection family contains fields that help define the inspection.

Each field that is defined for a family corresponds to a column in that family table. Any field that you define for a family can be displayed in a datasheet so that values can be displayed and collected via the Meridium APM Framework application or the Meridium APM Web Framework. Additionally, fields can be used in queries, graphs, reports, and other utilities to help you retrieve and display specific information about records in the database.

Field can store the following types of data:

- Letters and numbers (e.g., *Equipment* or *Equipment-123*).

- Numbers only.

- A Boolean value (i.e., true or false).

- Date and time values.

# What Are System Fields?

In addition to the fields that you define manually for each family, each record that you create will also contain *system fields*. System fields:

- Are identified by a field ID (i.e., you cannot define a field caption for them).

- Are managed automatically as you perform actions within the Meridium APM system.

- Cannot be modified or configured in the same way that family fields can be managed or configured (e.g., you cannot defined custom rules for them).

- Do not appear in many of the places where family fields appear (e.g., on datasheets).

- Can be included in queries.

- Are referenced throughout the Meridium APM product but in ways that most end users do not see (e.g., in rules and in URLs).

The following table provides a list and description of the system fields that exist for every record.

| Field ID | Description | Behavior/Usage |
|---|---|---|
| CONTENT_GUID | A *global unique identifier* that uniquely identifies a record across all databases. | This field is populated automatically with a system-generated value when a record is *instantiated* (i.e., when you initiate the record-creation process). Note that if you include this field in a query, when you run the query, values will not be displayed in the CONTENT_GUID column. |
| ENTY_CAPTION_TX | A field that stores a copy of the Record ID. | This field is updated when the ENTY_ID field is updated. |
| ENTY_ID | The Record ID of a given record. | The value in this field is controlled by the ID Template defined for a family. This field is populated automatically when a record is created and whenever one of the fields defined in the ID Template is modified. |
| ENTY_KEY | A value that uniquely identifies a record *within a given database*. | This field is populated automatically with a system-generated value the first time a record is *saved*. The ENTY_KEY field is widely using within URLs to provide a means for giving you direct access to the information associated with a specific entity. |
| FMLY_KEY | A value that identifies the family to which a record belongs. | This field is populated automatically when a record is first saved with the unique key value that identifies a family within a database. |

| Field ID | Description | Behavior/Usage |
|----------|-------------|----------------|
| LAST_UPBY_SEUS_KEY | A value that identifies the user who last updated the record. | This field is updated automatically whenever a record is modified. |
| LAST_UPDT_DT | A value that identifies the date that a record was last updated. | This field is updated automatically whenever a record is modified. |
| LOCK_SEQ_NBR | A value is internally by the Meridium APM system to indicate how many times a record has been modified. | This field is updated every time a record is modified. |

# Rules

In Meridium APM, *rules* consist of code that determines how records in the Meridium APM database will behave under specific conditions. Rule code is written in *Visual Basic.Net (VB.Net)*, a programming language that is compatible with the language in which the Meridium APM applications are written, allowing the Meridium APM rules to plug in to the Meridium APM software. In this way, you can specify that when certain actions are taken in Meridium APM, certain rules should be executed.

The purpose of writing rules for a family is to control how records in that family will behave when a user works with those records in the Meridium APM Framework application.

Rules can be defined:

- At the family level to specify how records within that family should behave.

- At the field level to specific how fields within records in a given family should behave.

# Data Spreading

## What Is Data Spreading?

Grouping families into hierarchies encourages the use of data spreading. Using data spreading, fields that are common to all families within a branch of the hierarchy can be defined on a family and then *spread* down to subfamilies. Fields that are specific only to one subfamily can be defined directly at the sublevel. Any fields that are defined for a family will be available for display at any sublevel. Note, however, that you should not over-use the data-spreading feature. The deeper a family exists in the hierarchy, the more time it takes when querying data from the family because the query must look at many family tables to gather all the information for generating the query results.

There are three main aspects of field spreading:

- **Metadata:** When a field is spread from one family to another, the metadata (i.e., Field Identification Properties) associated with the root family field is inherited by the subfamily field when the subfamily is created. In other words, the field properties at the target level match the field properties defined at the source level. Most of this information cannot be modified on the family *to which* the field has been spread. The Caption, Description, and Help Text can be modified. Additionally, the Special properties may be editable at the subfamily level, depending which option is selected.

- **Physical Tablespace:** Within the family hierarchy, a table will be created for each family, regardless of its position in the hierarchy. Similarly, a column will be created within a subfamily table for every field in that family, regardless of whether or not it has been defined directly within that family or inherited from a higher-level family. In other words, even fields that are created through spreading will have their own physical tablespace in each family in which they exist.

- **Rules:** For field-level rules, you have two options. Within the subfamily, you can choose to:

  - Inherit the rules that are defined for the source family. This is the default condition for spread fields and is indicated by the **Keep all properties of this field the same as they are in the Parent family** option in the Configuration Manager. When you accept this default selection, a code item will not be created for the field in

the subfamily. All rules will be defined in the source family code item and applied to the subfamily.

-or-

- ▪ Define rules directly within the subfamily by selecting the **Change the properties of this field for Child** option in the Configuration Manager application. When you select this option, a code item *will be created* for the field in the field in the subfamily. The rules for the subfamily field will be defined directly in the subfamily code item. Any rules that exist in the associated source family code item will not be applied to the subfamily.

> **Note:** If a subfamily code item exists for a spread field and you change the rules setting *back* to inherit from the source family, the existing subfamily code item will not be deleted or modified but will *no longer be used.* In this way, if you later decide to define rules at the subfamily level, any rules that previously existed will already be there for you to use or modify as desired.

There are two ways to spread fields:

- Within the properties of any family field, select the **Spread to subfamilies** check box. When you do so, ALL subfamilies created *under that family* will automatically inherit that field *when the subfamily is created.* Spread fields will not be inherited by subfamilies that existed *before* the **Spread to subfamilies** check box was selected.

- Within any subfamily, use the Field Chooser to select fields in higher-level families that you want to create at the subfamily level. This option is useful for spreading fields to subfamilies that existed before a spread field was created and for spreading fields only to *some* subfamilies.

After a field has been spread, *clearing* the Spread to subfamilies check box will prevent that field from being spread to additional families but will not remove the field from families to which it has already been spread. The metadata, physical tabelspace, and rules will continue to exist at the subfamily level until they are deleted manually. Un-spreading a field will, however, break the connection between the source field and the subfamily field, meaning that changes made to the source family field will not be applied at the subfamily level, even if the subfamily field originated through spreading.

# Examples of Data Spreading

Consider a family hierarchy that looks like this:
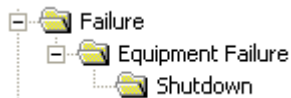


According to this hierarchy, you could add records for all of the shutdowns to the Shutdown family. You would need to record data for those shutdown records such as Failure ID, Failure Date, and Failure Comments. This data would be stored in the data fields. To provide data storage for this information, you could put all four data fields in the Shutdown family.

Now, consider a hierarchy that looks like this:
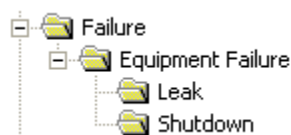


For Leak records assigned to the Leak family, you would need to record data such as Failure ID, Failure Date, Failure Comments, and Leak Substance. Note that three of these fields store the same type of data that you wanted to store for shutdowns. If the data fields are all on the Shutdown family, you would have to recreate these data fields for the Leak family. By using data spreading, however, you can create a streamlined database and avoid the duplication of effort.

To look at it in another way, Example A does not use data spreading. Example B uses data spreading:

**Example A: No Data Spreading Applied**

| Family | Fields |
|---|---|
| **Failure** | |
| Failure\**Equipment Failure** | |
| Failure\Equipment Failure\**Shutdown** | Failure ID<br>Failure Date<br>Failure Comments |

| Family | Fields |
|---|---|
| Failure\Equipment Failure\**Leak** | Failure ID<br>Failure Date<br>Failure Comments<br>Leak Substance |

**Example B: Data Spreading Applied**

| Family | Fields |
|---|---|
| **Failure** | Failure ID<br>Failure Date<br>Failure Comments |
| Failure\**Equipment Failure** | |
| Failure\Equipment Failure\**Shutdown** | |
| Failure\Equipment Failure\**Leak** | Leak Substance |

Notice that Example B, which uses data spreading, has only four fields as compared to the seven fields created for Example A. Note also that with Example B, there are no duplicate fields, whereas Example A has three duplicate fields: Failure ID, Failure Date, and Failure Comments. As you can see from this example, data spreading multiplied over hundreds of families can help to save administrative time that is required to create and maintain the data fields, and it can help limit the size of the physical database.

Note that in data spreading, only the data field definitions are spread to lower levels. Values themselves do not spread. For example, a Shutdown and a Leak can have different Failure IDs even though they both inherit the same Failure ID field from the Failure family.

# Relationship Definitions

## What Are Relationships Definitions?

A *relationship family* corresponds to a database table that is used to relate two entity family tables. A *relationship definition* is, for a given relationship

family, a rule that specifies which two entity families are related, which family is the predecessor, which family is the successor, and the cardinality of each. By setting up relationship definitions, you can define the various types and levels of connections that exist between entities. For example, a piece of equipment might be related to items such as:

- The location that contains it.

- The people who inspect and maintain it.

- The inspection and repair events performed on it.

- The workflows in which it participates.

Defining, tracking, and analyzing the relationships between entities is one of the most powerful tools in the Meridium APM system. After you have associated entity families with one another using relationship definitions, you can begin creating business rules that are based on those relationships. In this way, individual entities, each stored separately within the database can interact with, use information from, and even be updated based on changes made to other, related entities.

You can set up and maintain relationship definitions via the Meridium APM Configuration Manager. When deciding how many relationships to create, remember that too many relationships can be confusing to users and could create unnecessary system overhead. Too few relationships, on the other hand, will prevent you from defining them specifically enough to be useful to the end user.

## About Successors and Predecessors

Before you can create a relationship definition, you must first decide which two families will participate in the relationship. Next, you must decide which family will be the *predecessor* and which will be the *successor* in the relationship.

In many cases, the predecessor is the *single part* of the relationship equation and the successor is the *multiple part*. For example, if the relationship is Has Failure, and you determine that a piece of equipment, such as a pump, has a failure, then the pump experiencing the failure is the predecessor because there is one pump, whereas the failure is the successor because a pump might have many failures.

Another way to look at predecessors and successors is to consider that the predecessor comes before the successor. For example, using this guideline, a piece of equipment could be the predecessor and a repair could be the successor because the equipment was in place before it was repaired.

Note that these are only guidelines. Meridium APM will allow any type of setup that you feel best suits your needs.

# About Cardinality

Cardinality specifies for a particular relationship definition how many links can be created between records of the predecessor and successor families. Consider an example where the Has Maintenance relationship relates the Axial Compressor family to the Work Order family. Within this relationship definition, the cardinality would specify how many Work Order records could be linked to a given Axial Compressor record, and vice versa.

The following list provides descriptions of the cardinality rules that can be defined for successors and predecessors. For the purposes of our examples, assume that the Axial Compressor family is the predecessor and the Work Order family is the successor in the Has Maintenance relationship.

- **One and only one predecessor record can be linked to one and only one successor record.** For example, one and only one Axial Compressor record can be linked to one and only one Work Order record. Axial Compressor A can be linked to Work Order 1, but Axial Compressor A cannot be linked to any other Work Orders.

- **One and only one predecessor record can be linked to many successor records.** For example, one and only one Axial Compressor record can be linked to many Work Order records. Axial Compressor A can be linked to Work Order 1, Work Order 2, and Work Order 3, and so on.

- **Many predecessor records can be linked to one and only one successor record.** For example, many Axial Compressor records can be linked to one and only one Work Order record. Axial Compressor A and Axial Compressor B could be linked to Work Order 1.

- **Many predecessor records can be linked to many successor records.** For example, many Axial Compressor records can be linked to many Work Order records. Axial Compressor A and Axial Compressor B can be

linked to Work Order 1, and Axial Compressor A and Axial Compressor B can be linked to Work Order 2.

Depending on the entity families and the relationship family involved in the relationship definition, some cardinality options may not be logical for your implementation. Via the Configuration Manager, administrative users will configure the cardinality between entity families according to what makes sense for your company's workflow.

Based on the cardinality defined between entity families through a given relationship family, you will be limited to the number of links that you can create between records when working with the records in the Meridium APM Framework application or the Meridium APM Web Framework. For example, if your system is configured such that a Work Order record can be linked to only one piece of equipment, such as a Pump, you could create a link between Pump 101 and Work Order 1, but you could not link Work Order 1 to any other records. If you tried to do so, Meridium APM would generate an error. In this way, cardinality helps you maintain integrity in your database because it prevents you from creating relationships that should not exist.

**Note:** You can choose to allow only one link between the entities of the predecessor family and entities of the successor family *within a given relationship definition*. Multiple links may be allowed, however, if the predecessor or successor family participates in additional relationship definitions. For example, your system could be configured such that the each Work Order record can be linked to only ONE Equipment. If an additional relationship definition existed for the Work Order family and the Functional Location family, however, then a Work Order record could be linked to an Equipment record even if it was already linked to a Functional Location record.

Note that a given family can also act as the predecessor in one relationship and the successor in another. For example, the Equipment family is the successor in the Functional Location Has Equipment relationship and the successor in the Equipment Has Equipment relationship.

# Example of a Baseline Relationship Definition

The baseline Thickness Monitoring module includes, among others, the relationship definitions for the Has Measurements relationship family shown in the following image.

From the relationship definition that includes the Thickness Measurementfamily, you can see that:

- The Thickness Measurement Location family is related to the Thickness Measurement family.

- The Thickness Measurement Location family is the predecessor in the relationship definition, and the Thickness Measurement family is the successor.

- Zero or one Thickness Measurement Location records can be linked to zero or many Thickness Measurement records. This means that more than one Thickness Measurement Location record cannot be linked to the same Thickness Measurement record. One Thickness Measurement

Location record can, however, be linked to multiple Thickness Measurement records.

# About Relationship Data

One thing to consider when configuring relationships is whether or not information about the relationship will need to be stored. If so, fields can be defined for that relationship family, and a datasheet can be configured. Each time records are linked via the Meridium APM Framework application or the Meridium APM Web Framework, specific information about the link can be recorded in that datasheet.

For example, suppose a pipe is connected to a pump in your facility. You record various types of information for the pipe in a Pipe record and different information for the pump in a Pump record. But when you link the Pipe record to the Pump record, you need to store information specific to that connection, such as weld type and material.

Fields are defined at the relationship family level and are stored as columns in the relationship family table. Any relationship field that you define, therefore, will be available for any link between any predecessor and successor. So, you might need to create more specific relationship families if you plan to use relationship fields.

**Note:** When you store data about relationships, you increase the complexity of your system, which could potentially hinder the system's performance and the ease with which your system can be maintained.

# About Families Involved in Multiple Relationships

Each family can participate in numerous relationships. Consider that the Pressure Vessel family can be involved in the following relationships:

- An **Equipment Contains Sub-Equipment** relationship with the Shell family and the Nozzle family.

- An **Equipment Connects to Equipment** relationship with the Valve family.

- An **Equipment Has Inspections** and **Equipment Has Repairs** relationship with the Inspections and Repairs families.

# Records and Datasheets

## Records

### What Is a Record?

In the most general sense, a *record* is simply a row in a database table. Because Meridium APM uses various types of database tables, in Meridium APM, there are several types of records, including:

- Entity family records (i.e., records associated with a specific entity family and stored in one or more entity family tables).

- Relationship family records (i.e., records stored in relationship family tables).

Entity family records, which are the most common type of record, typically represent a physical, functional, or organizational element in your company or facility. For example, an Equipment record would store the information associated with a physical piece of machinery. A human resource record would store the information associated with a person.

**IMPORTANT:** In most cases, throughout the Meridium APM software and documentation, when we use the term *record* alone, we are referring to a record belonging to an entity family.

Because the Meridium APM system is flexible in the type of information it can track, and because you have the ability to define how detailed your database will be, a record can represent almost anything. Some other examples of the types of records that you can set up include:

- Planned and unplanned events (e.g., inspections, failures, shutdowns, maintenance requests, recommendations, and repairs).

- Datapoints.

- Measurement readings.

- Circuits.

- Tags and loops.

- Drawings.

- Processes.

Each record that is created is assigned a unique value, or key, that identifies it within the system and differentiates it from all other records in the database. When you access a record, Meridium APM takes the record key, searches the database, and retrieves the data associated with that key. This data is then displayed through the tool of your choice (e.g., Record Manager, graph, query, report, or module-specific user interface). Because each record has unique, identifying characteristics but belongs to a given family, you can track each individual piece of equipment in addition to tracking the equipment as an entire group.

# What Are Links?

A relationship family corresponds to a database table that is used to relate two entity family tables. Relationship definitions specify which entity families can be connected through that relationship for a given relationship family. A *link* is a relationship family *record* that stores the information relating two entity family records.

Consider an example where the Has Maintenance relationship family relates the Axial Compressor entity family to the Work Order entity family. If an Axial Compressor record exists in the database to identify a specific piece of equipment, and you create a Work Order record to store the information associated with the maintenance that was performed on that piece of equipment, you might want to relate the two entity family records to one another. You would do so by creating a *link* between the two entity family records.

When you link two entity family records together, Meridium APM creates a record in the appropriate relationship family table. The relationship family record, or link, contains:

- A key identifying the link itself.

- A value identifying the predecessor record.

- A value identifying the successor record.

The link may also contain other data if additional fields have been defined for the relationship family.

# About Data Spreading and Physical Record Storage

Data spreading adds another dimension to our definition of records with respect to physical data storage. In the most general terms, a record corresponds to a row in a database table. In a data model that does not use data spreading, this would mean that each record is stored in one row of one table, where the columns of that row contain all the information for the record.

In a data model that uses data spreading, however, the values for a single record are actually spread across multiple rows in multiple tables. Consider the following example, where spreading has been used.

| Family | Fields |
|---|---|
| **Failure** | Failure ID<br>Failure Date<br>Failure Comments |
| Failure\**Equipment Failure** | |
| Failure\Equipment Failure\**Shutdown** | |
| Failure\Equipment Failure\**Leak** | Leak Substance |

In this example, when you create a Leak record and define values for the Leak Substance, Failure Comments, Failure Date, and Failure ID fields, the *only* value that is actually stored in the Leak table is *Leak Substance*. The other three values will be stored in the family table where the fields are defined (i.e., where the physical columns exist): the Failure table.

Each of the tables will contain a physical row, or record. When you view a record belonging to the Leak family, you are actually viewing a composite record that consists of the record stored in the Leak table and the record stored in the Failure table.

Typically, it is not necessary to refer to each record individually as a distinct row in separate physical tables. Therefore, in cases where spreading has been used, we use the term *record* to refer to the *composite* record that has been created as a result of data spreading.

# How Are Records Uniquely Identified?

Each record in the Meridium APM database has a unique Entity Key that is stored in the ENTY_KEY field. The value in the ENTY_KEY field is unique *to a given database*. After you save a new record, it is assigned a unique Entity Key automatically. You cannot display an Entity Key on a datasheet, but you can find it by running a query and including the ENTY_KEY field. For example, if you wanted to see the Entity Key of PMP-4543, you could create a query similar to the one shown in the following image.

| Field | [Asset ID] | ENTY_KEY |
|---|---|---|
| Alias | Asset ID | ENTY_KEY |
| Table | [Pump] | [Pump] |
| Sort | | |
| Sort Index | | |
| Include | ✔ | ✔ |
| Display | ✔ | ✔ |
| Hyperlink | | |
| Criteria | 'PMP-4543' | |
| Or | | |

The results of the query might look something like this:

| Asset ID | ENTY_KEY |
|---|---|
| PMP-4543 | 2007378 |

Entity Keys are often required in URLs, so keep in mind that you can locate an Entity Key by running a query and displaying the ENTY_KEY field.

**Note:** All records also contain the system field CONTENT_GUID, which uniquely identifies a record across ALL databases. This field is populated automatically with a system-generated value when a record is *instantiated* (i.e., when you initiate the record-creation process).

# What is a Record ID?

Throughout the documentation, we refer to the value that exists in the ENTY_ID field on a datasheet as the *Record ID*. A Record ID can help you identify a record in the database. A Record ID is determined via the ID Template configuration in the Configuration Manager application. If an ID

Template has not been configured for a family, records created in those families will not have a Record ID.

While Record IDs are not required to be unique, if you set up your system such that you configure ID fields for all families and you enforce a policy of supplying unique values in all ID fields, the Record IDs of those records will be unique.

For example, consider the Record ID for Functional Location records, which is a concatenated value containing the *Functional Location* and *Functional Location Description*.

You cannot display a Record ID on a datasheet, but you can determine it by running a query and including the ENTY_ID field. For example, if you wanted to see the Record ID of the Functional Location record with the value *MRD-HOU-MING* in the Functional Location field, you could create a query similar to the one shown in the following image.

| Field | [Functional Location] | ENTY_ID |
|---|---|---|
| Alias | Functional Location | ENTY_ID |
| Table | [Functional Location] | [Functional Location] |
| Sort | | |
| Sort Index | | |
| Include | ☑ | ☑ |
| Display | ☑ | ☑ |
| Hyperlink | | |
| Criteria | 'MRD-HOU-MING' | |
| Or | | |

The results of the query might look something like this:

| Functional Location | ENTY_ID |
|---|---|
| ▶ MRD-HOU-MING | MRD-HOU-MING ~ Meridium Houston Mining |

While ENTY_ID is not displayed on a datasheet, the value that exists in this field is displayed throughout the Meridium APM Framework application interface. For example, when you perform a search for a record, the results section displays the Record IDs in the **Record ID** column.

In addition, when you look at records in the record hierarchy, you will see the Record ID at the record node level, as shown in the following image:
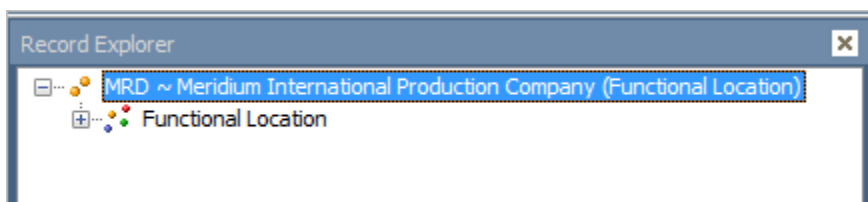


Record IDs are often required in URLs, so keep in mind that you can locate an Record ID by running a query and displaying the ENTY_ID field.

# Datasheets

## Overview of Datasheets

A datasheet is a customized view of fields assigned to a family. Datasheets organize the data stored in a record. Since all members of a specific family have common characteristics, the datasheet that is configured for a family applies to all the records that belong to the family. For example, all records in the Meridium General Recommendation family will use the Meridium General Recommendation datasheet. When you create a new record in the Record Manager or the Bulk Data Form, the datasheet that appears shows the specific data that is associated with a record. Most Meridium APM modules also display datasheets in customized screens that do not necessarily resemble the Record Manager or the Bulk Data Form.

Each entity family can be associated with multiple datasheets. Multiple datasheets can be useful in cases where different types of users need to view and enter different information into a single record. When you open a record, you will be able to select the desired datasheet if more than one datasheet has been configured. Because datasheets are completely configurable, it is up to

an administrative user to decide whether to create many datasheets to divide fields or just use one datasheet that contains all of the fields.

The Meridium APM system offers various types of datasheets so that you can customize the way users enter data into the system.

## About Multiple Datasheets

To allow flexibility in data entry and storage, Meridium APM lets you define more than one datasheet for a given family. For example, members of the Pump family may have many pieces of data that can be recorded for them (e.g., maintenance, engineering, reliability, cost, inspection, design, drawing, project, etc.). A datasheet containing all of these data fields would be very large and difficult to navigate.

To make data entry easier, an administrative user can choose to create subsets of the data based on specific purposes—engineering data in one datasheet, inspection data in another, cost data in a third, and so forth. When you access a record, regardless of whether you use the Record Manager, Bulk Data Form, or another method of viewing records, you can select the datasheet that represents your needs.

When more than one datasheet exists for a family, you will be able to select the desired datasheet when you create and view a record. The name of the currently selected datasheet appears at the top of any record you are viewing.

## About Field Rules in Datasheets

The field properties and rules that you define for family fields determine how fields will behave when users view them in datasheets in the Meridium APM Framework application or the Meridium APM Web Framework. For example, the Format rule determines how values will be formatted in the Meridium APM Framework application and the Meridium APM Web Framework.

If you have defined a rule for a field that will affect the way it appears or behaves in the Meridium APM Framework application and the Meridium APM Web Framework, you may want to test the field rule. To do so, follow this workflow:

**Step 1:** Configure the family field properties as desired.

**Step 2:** Add the field to the datasheet.

**Step 3:** Compile the family.

**Step 4:** Launch the Meridium APM Framework application or the Meridium APM Web Framework, and open a new datasheet for the family.

If you need to make additional changes to a field, repeat this workflow, but omit step 2. After you add the field to the datasheet, any changes you make to the field rule will be applied automatically to the datasheet.

# Putting It All Together: Families, Records, and Fields

The following explanation illustrates the connection between families, records, and fields. While the example is generic, the concept applies to Meridium APM families, family fields, and records.

**Note:** In this example, data spreading has not been used.

Consider a situation where employees who work for an employer will be stored in the Employee entity family. Various fields will be defined for the Employee family to create columns in the Employee table and store data for individual Employee records. The Employee family table might look something like this:

| Family ⟶ | Employee | | | |
|---|---|---|---|---|
| Fields ⟶ | **Employee ID** | **First Name** | **Last Name** | **Date of Birth** |
| | E-101 | John | Smith | 1/10/71 |
| | E-97 | Mary | Jones | 5/25/65 |
| Records | E-113 | Bob | Wray | 7/1/68 |
| | E-119 | Jane | Duncan | 2/12/59 |

Notice that the following fields are defined for the Employee family:

- Employee ID

- First Name

- Last Name

- Date of Birth

Four records belong to the Employee family and are stored as rows in the Employee table. Each record has a value in each field. The first record in the table defines the information for John Smith, the second record defines the information for Mary Jones, and so on. Each record has an ID, which is unique to the record and can be used for searching.

Because each employee has a certain number of years of service to the employer, the Employee family could be related to the Service family through the Has Service relationship family. The Service family, then, could contain fields such as Start Date and End Date. The Service family table might look similar to the following table.

| Service | | | |
|---------|---|---|---|
| Service ID | Employee ID | Start Date | End Date |
| S-101 | E-101 | 6/7/1980 | 12/15/2001 |
| S-97 | E-97 | 4/29/1980 | 1/1/1985 |
| S-113 | E-113 | 4/1/1981 | |
| S-119 | E-119 | 6/1/1981 | 7/15/1989 |

Family → (Service header row)
Fields → (Service ID, Employee ID, Start Date, End Date row)
Records → (the four data rows)

From the Service family, you can see that there are four records, each assigned a specific Service ID. The Employee ID field indicates the employee with which the record is associated, the Start Date field defines the date on which the employee began service, and the End Date field indicates the date on which the employee ended his or her service. Because the End Date field is empty for the employee defined by the Employee ID **E-113**, we can infer that he or she is the only one who remains with the company out of the four employees defined in the table.