ACCRUENT

ACCRUENT MERIDIAN

CONFIGURATION GUIDE

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Meridian Enterprise Introduction

The Meridian Enterprise product suite is an on-premises engineering document management system (EDMS) and asset lifecycle information management (ALIM) Accruent solution. Meridian Enterprise streamlines engineering-related business processes in specific industries including chemicals, pharmaceuticals, oil and gas, metals and mining, and utilities. Meridian helps your organization manage technical documents and drawings throughout its lifecycle, providing a centralized repository to store, organize, and control engineering documentation.

Meridian Enterprise includes:

- **PowerWeb**: Create and modify engineering data.
- **Explorer**: Search and retrieve engineering information.
- **Configurator**: Customize document types, workflow, roles, and other organizational procedures.
- **Administrator**: Manage users, licenses, and vaults.
- **Administration Console**: Manage users, licenses, jobs, repositories, and other settings.
- **Application Integration**: Streamline working with file-based applications by utilizing site cache and managing local workspace.
- **Microsoft Office link**: Synchronize metadata and references with Microsoft Office applications.
- **Autodesk links**: Synchronize metadata and references with AutoCAD family, Revit, and Inventor.
- **MicroStation link**: Synchronize metadata and references with MicroStation.

Meridian Enterprise supports regulatory compliance. it includes an FDA module to help your organization maintain the integrity and traceability of its documentation. The Meridian Asset Management module enhances, automates, and streamlines asset operations throughout their lifecycle by linking them with engineering content such as drawings and technical specifications.

Meridian Enterprise can integrate with Meridian Portal, a web application for internal and external collaboration in engineering projects. Contact your Accruent account representative for further information.

What's In This Guide

This guide describes the various areas of Meridian Enterprise Configurator and the tasks that each one performs. The Meridian Enterprise Configurator allows you to configure the vaults created with the Administrator utility. Configuration can be anything from adding database fields (properties) to defining a new property page, its layout, or which templates are allowed to be used. The major topics included in this guide are:

- High-level concepts employed by Meridian
- How to create each of the configurable object types in a vault
- How to configure the different workflow types
- How to create custom property pages, commands, views, and more
- How to set up vault security
- How to use VBScript to perform simple automation tasks
- How to configure the Meridian links to other applications
- How to successfully migrate existing data to a Meridian vault

> **Note:**
> The *Meridian Enterprise Administrator's Guide* describes Meridian server administration and how to use the Meridian client applications.

Who Should Read This Guide

This guide is intended for advanced Meridian users who are responsible for vault configuration and security. You should be familiar with:

- The Windows® operating system, including its use in a network environment
- All aspects of using Meridian from an end user's perspective
- How your organization uses and manages documents as it conducts business
- The practices and requirements of user groups who will use the system
- Basic document control methodologies such as revision control

Technical Support

Technical support for Accruent products is available from a variety of sources if you have an active support contract. Your first source of support is the authorized contacts designated by your company to participate in the support contract. They are the persons that are responsible for resolving problems with Accruent software before contacting outside sources of support. If your company works with a Accruent Partner, that partner is your second source of support. Accruent Partners are responsible for providing technical support to their customers in order to maintain their status as Accruent Partners. Accruent will assist the partner company, if necessary, to help resolve your problem. If your company is a direct Accruent customer, your authorized contacts may communicate directly with Accruent to resolve your problem.

Accruent Partners and direct customers have access to all of these Accruent technical support resources:

- Support Cases: Around the clock support issue entry, update, and status
- Meridian knowledge base: Continuously updated problem solutions, minor releases, updates, and how-to articles about advanced techniques
- Email notifications: Immediate alerts to support issue status changes
- Telephone support: Direct access to highly qualified software support engineers with extensive experience in Accruent products

The available support contract options, terms, and other details are described in documents that are available from your Accruent Partner.

Meridian Enterprise Configurator

The Meridian Enterprise Configurator is the tool Meridian System Administrators use to configure Meridian vaults. Configurator is installed as part of the **Administrator** components by the Meridian setup programs described in the *Installation* section in the *Meridian Enterprise Administrator's Guide*. Configurator can be installed on the Meridian server but is more convenient to install and use on System Administrators' computers so that vaults can be configured remotely.

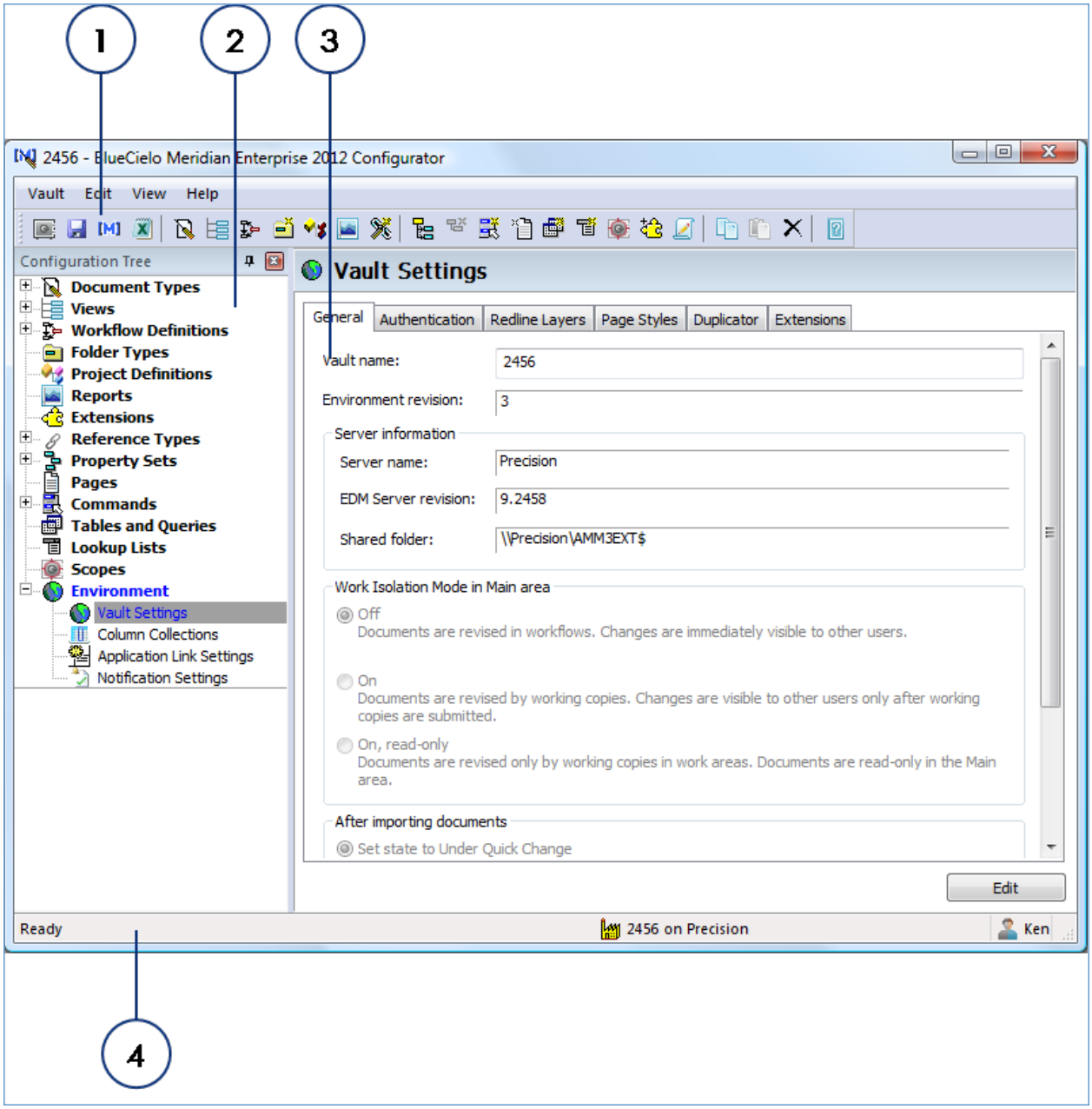
> **Important!**
> We recommend that access to the administration tools be secured by only installing them on the computers used by authorized System Administrators. For additional server security requirements, see the *Meridian Security Requirements* section in the *Meridian Enterprise Administrator's Guide*.

A vault's configuration data is stored within the vault itself. This makes the vault's configuration just as secure as the documents the vault contains. The Configurator acts as a client application to open and edit the configuration data in the same way that the Meridian client applications open and edit documents. The privilege to edit configuration data is granted with the **Change Configuration** privilege described in Security Roles and Vault privileges.

Vault configuration data can be exported from one vault and imported into another vault. This process can be useful to transfer configuration objects and options between vaults, as described in the sections below.

Configurator Window

The following figure identifies the various features of the Configurator window.



The following table describes each area of the Configurator window.

Configurator area descriptions

Number	Name	Description
1	Toolbar	Buttons for frequently used commands. May be moved, docked, and hidden.

Number	Name	Description
2	Configuration tree	Organizes the vault's configuration data and object types for easy access.
3	Property pages	Configuration data for the currently selected item in the configuration tree. The quantity and names of property pages vary with the currently selected item.
4	Status bar	Displays the current vault name, server name, user name, and status messages. Double-click the vault name to select a different vault. Double-click the user name to view your user info such as group membership, Windows account names, and email addresses. This information may only be edited by a System Administrator in the Administrator tool.

Edit Configuration Data

Important!
The ability to edit a vault's configuration is granted on a first-come, first-served basis. After a vault is opened by one Configurator session, if another Configurator session attempts to open the same vault simultaneously, only the first session will be allowed to save changes to the vault configuration.

To edit the configuration data for a specific object type:

1. Select the object in the configuration tree.

   The property pages for the selected object appear in the right pane.
2. Click **Edit**.

   This button is in the lower-right corner of the Configurator window.

   The properties become editable.
3. Click options or type values in the property pages.
4. Click **OK**.

   There is one exception when configuration data is not saved automatically; that is after editing event procedures, as described in *Create and Edit Event Procedures* in the *Meridian Enterprise VBScript API Reference*. You must explicitly save those changes by selecting **Save** on the **Vault** menu.

Custom Icons

Meridian Enterprise includes icons for all of the objects that it shows graphically, including folders and documents. Instead of these icons, you can configure custom icons.

You might want to configure custom icons for:

- Different folder types
- Documents in standard formats and that appear with the generic Windows file icon
- Showing the same icon for a document type regardless of the icon shown by different versions of the same program
- Programmatically changing icons based on user actions, document status, workflow states, or property values

Meridian Enterprise shows icons in numerous places in the system:

- Navigation views
- Folder and document property pages
- Application Integration
- **Show Revisions** dialog box
- **Find** and **Key Find** dialog boxes
- **Show Project Copy** dialog box
- Briefcase dialog boxes
- Reference Explorer

> **Note:**
> Custom icons are not supported by hybrid document parts.

Configure Custom Icons

To configure custom icons:

1. In an image editing program, create the following files depending on whether you want custom icons for documents, for folders, or for both:
   - `CustomDocumentImagesSmall.bmp` (16x16 pixels)
   - `CustomDocumentImagesLarge.bmp` (32x32 pixels)
   - `CustomFolderImagesSmall.bmp` (16x16 pixels)
   - `CustomFolderImagesLarge.bmp` (32x32 pixels)

You must create both a small icon file and a large icon file for each object type, documents or folders.

Each image file must be an image list bitmap that contains all of the icons of each object and icon size. For example, `CustomFolderImagesSmall.bmp` must contain all custom small icons for folders. The folder image lists should contain pairs of icons that show the same icon as both closed and open similar to the following figure (not all open state icons drawn for simplicity).

For more information about image lists, see About Image Lists on the MSDN website.

2. Place the image list files in the folder `C:\Program Files (x86)\Common Files\Cyco Shared` (64-bit computers) or `C:\Program Files\Common Files\Cyco Shared` (32-bit computers) of each client computer.

   Alternatively, you can place the files in a different location and specify the path to the files in the following (String) registry settings:

   On 32-bit computers:

   ```
   HKEY_LOCAL_MACHINE_\SOFTWARE\Cyco\AutoManager
   Meridian\CurrentVersion\CustomDocumentImagesLarge
   HKEY_LOCAL_MACHINE_\SOFTWARE\Cyco\AutoManager
   Meridian\CurrentVersion\CustomDocumentImagesSmall
   HKEY_LOCAL_MACHINE_\SOFTWARE\Cyco\AutoManager
   Meridian\CurrentVersion\CustomFolderImagesLarge
   HKEY_LOCAL_MACHINE_\SOFTWARE\Cyco\AutoManager
   Meridian\CurrentVersion\CustomFolderImagesSmall
   ```

   On 64-bit computers running 32-bit software:

   ```
   HKEY_LOCAL_MACHINE_\SOFTWARE\Wow6432Node\Cyco\AutoManager
   Meridian\CurrentVersion\CustomDocumentImagesLarge
   HKEY_LOCAL_MACHINE_\SOFTWARE\Wow6432Node\Cyco\AutoManager
   Meridian\CurrentVersion\CustomDocumentImagesSmall
   HKEY_LOCAL_MACHINE_\SOFTWARE\Wow6432Node\Cyco\AutoManager
   Meridian\CurrentVersion\CustomFolderImagesLarge
   HKEY_LOCAL_MACHINE_\SOFTWARE\Wow6432Node\Cyco\AutoManager
   Meridian\CurrentVersion\CustomFolderImagesSmall
   ```

   Or you can set the path to the location in the **%CYCOSHARED%** environment variable.

3. If you want the custom icons to appear in PowerWeb , create a separate set of icon files in the `IMG` folder on the PowerWeb server.

   By default, it is located at `C:\inetpub\AMM\Img`.

   The icon images should be 16x16 pixels in size and each contain one icon. The files must be saved in the GIF format.

You must create two files for each custom folder icon, one file showing a closed folder and a second file showing an open folder. The names of the files must conform to the following syntax where *<ImageListIndex>* is the index (one-based) of the corresponding icon in the image lists created in step 1 and where *<ImageState>* is the letter o for the open icon and the letter c for the closed icon: `nav_icon_<ImageListIndex+38>_<ImageState>.gif` . For example, the PowerWeb equivalents of the first (image list index 1) custom folder icon created in step 1 would be `nav_icon_39_o.gif` (1+38, open) and `nav_icon_39_c.gif` (1+38, closed).

You must create one file for each custom document icon. The names of the files must conform to the following syntax where *<ImageListIndex>* is the index (zero-based) of the corresponding icon in the image lists created in step 1: `ci_<ImageListIndex>.gif`. For example, the PowerWeb equivalent of the first custom document icon (image list index 0) created in step 1 would be `ci_0.gif`.

4. Select the custom icons in Configurator for the folder types and folder levels that you want to use the icons as described in the following topics.

   Your custom icons will appear in the icon lists after the built-in icons.

   - Creating the initial Field-Path definition
   - Creating and editing folder types
   - Configuring the levels of a view

5. Create custom script to set the **AMFSObjectPropertySet._ICONINDEX** property of documents to the index number (zero-based) of the corresponding icons in the image lists.

   For more information about working with script, see *Effects Of Custom Scripting* in the *Meridian Enterprise VBScript API Reference*.

Set Custom Icons for Individual Documents

To manually set the custom icons for individual documents:

1. In PowerUser, select a file for which you want to set a custom icon.
2. On the **Document** property page of the document, click the document icon in the upper-left corner of the page.

   The **Advanced Document Information** dialog box appears.

3. In the **File/Folder** property set, double-click the **Icon Index** row.

   The **Change Icon Index** dialog box appears.

4. Click the custom icon in the **Select icon** list.

   Click **Reset** to select the default icon.

5. Click **OK**.

Export Configuration Data

Exporting vault configuration data is useful for several purposes:

- To create a backup of the configuration data before making major configuration changes or to re-create a vault's configuration.
- To use vault objects and options from one vault in another vault, for example, to create development or training vaults that are identical to a production vault.
- To send to Accruent technical support staff or a Accruent Partner for troubleshooting. The recipient can quickly re-create the vault without documents.

To export vault configuration data:

1. In Configurator, on the **Vault** menu, select **Export Configuration**.

   The **Export Vault Configuration** dialog box appears. The **Progress** area of the dialog box lists all of the vault configuration object types that will be exported.
2. Choose between two options:
   - Type the path and file name to which to save the configuration data in **Export to**.
   - Click **Browse** and select a destination.

     By default, the file will be saved with the same name as the vault from which it was made.

     > **Note:**
     > Save the file in the vault's `Backup` folder where it can be backed up with the vault's backup files. The configuration file can also be created automatically during normal vault backups as described in *Prepare For Backups* in the *Meridian Enterprise Administrator's Guide*.
3. Click **Start** to begin the export.

   A check mark appears next to each object in the **Progress** area of the dialog box as that object type is exported to the specified file.
4. Click **Details** to see the names of each object that was exported or to read error messages.
5. Click **Close**.

Import Configuration Data

You might want to import vault configuration data to:

- Restore a vault's configuration to the state it was before you made configuration changes
- Use vault objects or options from a different vault to avoid re-creating them manually.

Note:
Ensure that no users are connected to the vault. Importing vault configuration data while the vault is active can cause errors and potential data loss.

Import Vault Configuration Data

To import vault configuration data:

1. In Configurator, on the **Vault** menu, select **Import Configuration**.

   The **Import Vault Configuration** dialog box appears. The **Progress** area of the dialog lists all of the vault configuration object types that can be imported. By default, all objects are selected.

2. Choose between two options:
   - Type the path and file name of the configuration file you want to import in **Import from**.
   - Click **Browse** and select a file.
3. Clear the check marks next to the object types that you do not want to import.
4. Click **Start** to begin the import.

   A check mark appears next to each object in the **Progress** area of the dialog that is imported from the specified file.
5. Click **Details** to see the names of each object that was imported or to read error messages.
6. Click **Close**.

Property definitions

If you import property definitions to an existing vault, the properties will not exist for the objects that use those properties until the next time that the objects are edited. Then the property will be assigned to the object and the new value (if any, including empty) saved. Under most circumstances, this is transparent and is not a cause for concern. However, it should be considered under the following circumstances:

- **Navigation views and searches that include the new property.**

  Because folders or documents will not yet have a value (even empty) for the property, those objects will not appear in such a view or search.
- **Updating data outside of Meridian**, for example, title block or file property updates.

  Do not assume that a new property added to a document type is empty and will clear an existing title block or file property value.

.NET extensions

If the configuration that you are importing refers to .NET extensions (Meridian Asset Management Module 2010 or higher extensions, for example), the error **No binary file is available to install extension** may appear. If this occurs, register the extensions manually as described in Register Custom Interface Extensions.

Deleted items

Just as documents that are deleted from a vault are not permanently removed and can be restored, objects (for example, document types and properties) and references (for example, extensions applied to document types) that are deleted in Configurator are not permanently removed from the vault. The deleted items are exported to the configuration (.met) file and will be added as undeleted items to the destination vault when the configuration file is imported. You must manually delete the items in the destination vault.

Security roles

By default, all security roles are granted all privileges to tables that are imported to a vault's configuration. To restrict the security privileges for a table, see Create And Edit Tables.

Workflow definitions

Importing workflow definitions will update existing workflow definitions in a vault only if:

- There are no active workflows that use the workflow definition.

  Release the workflows first.
- There are no document types to which the workflow definition has been applied.

  Remove the workflow definitions from the document types first.

Hotspots

Hotspot configuration from the configuration file replaces the current hotspot configuration.

Language Support

Meridian Enterprise supports different languages to enable global collaboration with Accruent products in the following ways:

- It can be installed with its user interface localized in the languages listed in the *Languages* article in the *Meridian Enterprise Supported Software* document.
- Documentation is available in several different languages from your Accruent Partner.
- It supports installation on any language version of the supported operating systems and any selected system locale.
- Its interfaces with other systems communicate in Unicode, if available.
- Vault data is stored in Unicode format regardless of where the data is stored.

> **Note:**
> An exception is the **Name** property of configuration objects (property definitions, property pages, views, and so on) in a vault. This property is used internally by Meridian Enterprise and is not visible to end users. The corresponding **Display Name** property is visible to end users.
>
> **Name** property values are permanent once set, but the **Display Name** property can be changed. The **Display Name** property can contain double-byte characters (for example, Japanese) and should be used for localized names. The (internal) **Name** property can only contain ASCII characters and cannot be empty.

When entering a **Display Name** value, if it contains ASCII characters, the **Name** property defaults automatically to the same value. But if a **Display Name** value contains double-byte language characters, the default **Name** value is not set and must be typed manually using ASCII characters.

Meridian Enterprise Script Editor

The Meridian Enterprise Script Editor is a simple text editor for entering VBScript code. The code you create is saved in your Meridian vault configuration. Configuration expressions are saved as individual code blocks, and the Meridian event procedures code is saved as one code block.

The Meridian Enterprise Script Editor can help you to build correct VBScript code by listing all available objects, functions, and constants for easy selection. As you enter VBScript code in the code pane, the Meridian Enterprise Script Editor constantly monitors the syntax of your code. When the current code is correct, the status bar displays **Script is valid**. If the syntax of the current code is incorrect, the status bar displays the error and the location of the error so that you can easily correct it.

If you are entering a configuration expression, when you are finished entering code, you can test the code by clicking the **Evaluate the expression** button . The Meridian Enterprise Script Editor will evaluate the expression and display the result so that you can confirm that the result is what you expect.

We include many examples of code that can be implemented in the VBScript Editor in our documentation. If you need assistance with your implementation, reach out to your Accruent representative.

Edit VBScript Code

Not all options described below will be available in every instance of the VBScript Editor. Learn more about the VBScript Editor user interface below.

To edit a code block:

1. Open the VBScript Editor.

   You can do this in one of three ways:

   - Click the **Edit Events** button in the toolbar at the top of the Configurator screen.
   - Click the **Edit Events** button next to the place in the Configurator where the code block is applied.
   - Click the **Meridian Enterprise Script Editor** button next to a place where configuration expressions can be applied.

2. To enable syntax coloring, select the **Use syntax coloring** check box.

   This check box appears at the bottom of the Script Editor pane. The performance of loading large scripts can be improved by disabling this option.

3. To enable the out-of-the-box script validation functionality, select the **Use validation** check box.

This check box appears at the bottom of the Script Editor pane. When this check box is selected and the current code is correct, the status bar displays **Script is valid**. If the syntax of the current code is incorrect, the status bar displays the error and the location of the error so that you can easily correct it.

4. Use the editor to write your custom code.
   - To add an object to your code:
     a. Select the object from the **Object Browser** menu.

        The Script Editor enters the object name in the editing pane.

     b. To delineate a subclass of the current object, type a period after the object name.

        The Script Editor displays a popup list of the current object's properties and methods for you to select.

     c. If you want to use an object method:
        i. Select a method name from the list.
        ii. Type an open parenthesis.

            The editor shows a tooltip in the code pane of all required and optional parameters to assist you.

        iii. Provide values for any parameters that you want to use.
        iv. Ensure that all required parameters are specified.
        v. Type a close parentheses.
        vi. Repeat as necessary.
   - To add an event or function to your code, select it from the **Events and Procedures** menu.

   We include many examples of code that can be implemented in the VBScript Editor in our documentation. If you need assistance with your implementation, reach out to your Accruent representative.

5. To test a configuration expression, click the **Evaluate the expression** button .

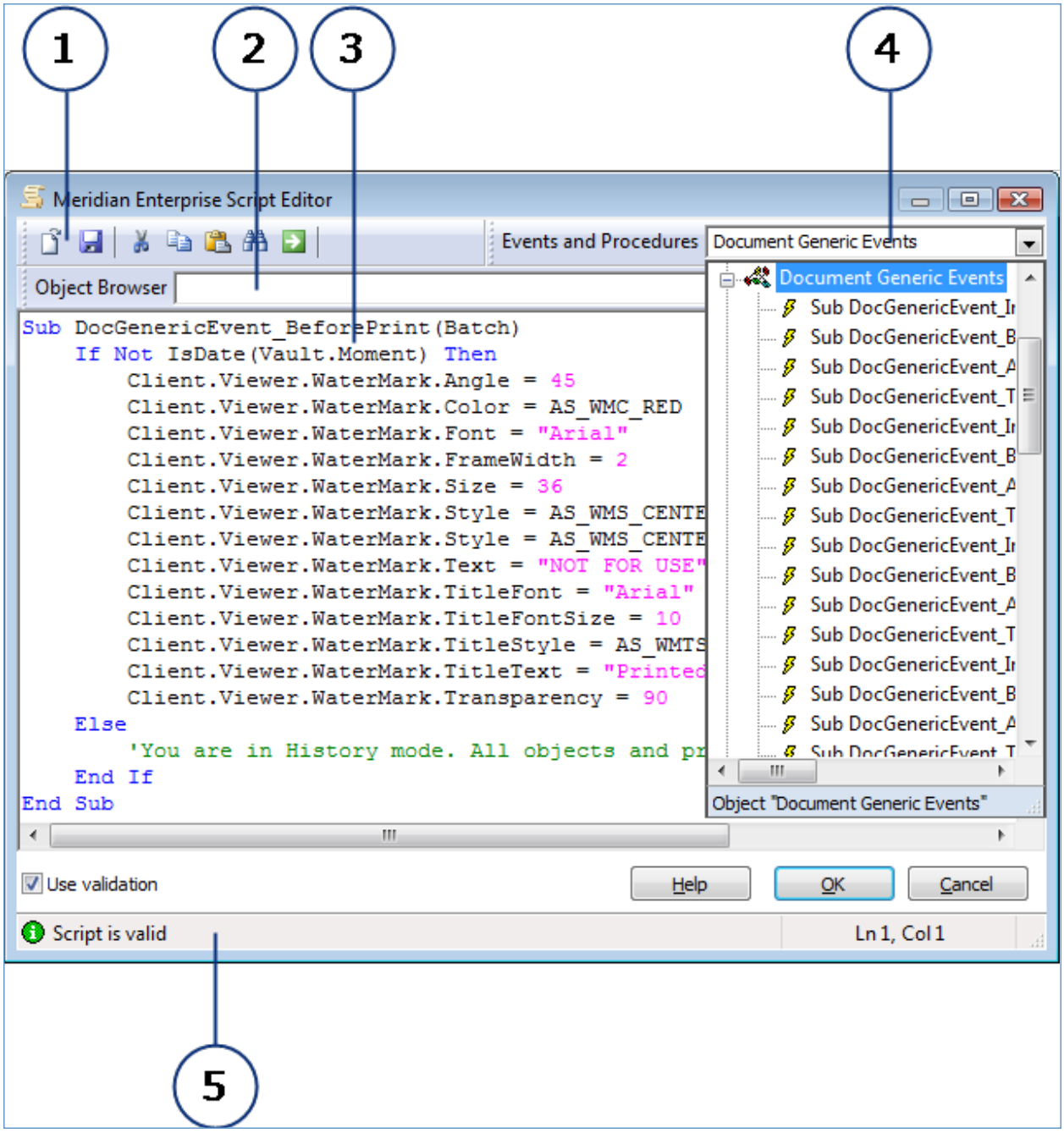
   This button only appears in the Script Editor for configuration expressions. See the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference Guide* to learn more about configuration expressions.

   The Meridian Enterprise Script Editor will evaluate the expression and display the result so that you can confirm that the result is what you expect.

6. Once you are satisfied with your code, click **OK**.

User Interface

The following diagram and tables are used to describe the VBScript Editor user interface.



The Meridian Enterprise Script Editor is composed of several elements described in the following table.

Features of the VBScript editor

Number	Name	Description
1	Toolbar	Contains buttons for transferring text with the Clipboard and searching code for text.
2	Object Browser	Displays a tree view of the VBScript built-in functions and constants, and the Meridian objects, properties, methods, functions, and constants. For information about the Meridian objects, see *Meridian Object Model* in the *Meridian Enterprise VBScript API Reference Guide*. For information about the Meridian functions, see *Meridian functions* in the *Meridian Enterprise VBScript API Reference Guide*.
3	Code pane	The area for entering VBScript code.
4	Events and Procedures	Displays a tree view of the Meridian events and any custom functions that have been defined. For information about the Meridian events, see *Meridian event procedures* in the *Meridian Enterprise VBScript API Reference Guide*. This view is only available when editing the Meridian events, as described in *Create and Edit Event Procedures* in the *Meridian Enterprise VBScript API Reference Guide*.
5	Status bar	Displays indicators for the current script's validity (if the **Use validation** option is enabled) and the current cursor position. The performance of loading large scripts can be improved by disabling **Use syntax coloring** option.

The commands for each icon on the toolbar are described in the following table.

Toolbar icons

Icon	Shortcut	Description
	Ctrl + O	Load a file from disk to completely replace the current code block. Available only when editing the Meridian events, as described in *Create and Edit Event Procedures* in the *Meridian Enterprise VBScript API Reference Guide*.
	Ctrl + S F12	Save the current contents of the editor to a file on disk. The default file name that is calculated includes the current date. Available only when editing the Meridian events, as described in *Create and Edit Event Procedures* in the *Meridian Enterprise VBScript API Reference Guide*.
	Ctrl + X	Cut the selected text to the Clipboard.
	Ctrl + C	Copy the selected text to the Clipboard.

Icon	Shortcut	Description
	Ctrl + V	Paste text from the Clipboard.
	Ctrl + F	Find specific text in the current code block. Available only when editing the Meridian events, as described in *Create and Edit Event Procedures* in the *Meridian Enterprise VBScript API Reference Guide*.
	Ctrl + G	Go to a specific line number in the current code block.
		Evaluates a configuration expression and displays the result so that you can confirm that the result is what you expect. This button only appears in the Script Editor for configuration expressions. See the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference Guide* to learn more about configuration expressions.

Advanced Project Workflow Module

The Meridian Advanced Project Workflow Module establishes a project structure for managing engineering content work-in-progress. Master documents are available for maintenance and operations in an as-built area, while working copies are made in project areas. The Meridian Advanced Project Workflow Module also allows you to manage multiple concurrent projects that share documents. It provides a way to merge design changes into a new version of the master document in a controlled manner and lets you handle small changes as well as complex capital projects based on pre-configured projects and workflow templates. Its advanced tools let you control and monitor project progress.

Vaults

The vault is the primary object of a Meridian system and where the documents and other objects that Meridian manages reside. Its configuration determines many aspects of how the system will function. The information about vault documents, as opposed to the information contained within documents, is stored in a database.

For Meridian, the database format is invisible to the user. The vault looks and behaves the same whether it uses the Hypertrieve, SQL Server, or Oracle database engine. Meridian allows for multiple active vaults so that, for example, different departments can have their own vaults to store documents. This can be more efficient than using a single large vault because it allows each vault to have different document-naming conventions, folder structures, and workflows that may be unique to each department. By using multiple vaults, each department can retain its own standards and procedures, rather than conforming to a single vault configuration that attempts to meet the needs of all departments.

Vaults are created and maintained with the Meridian Enterprise Administrator tool as described in the *Meridian Enterprise Administrator's Guide*.

The key element to creating and configuring vaults is planning. You should create a detailed specification of all types of documents to be stored in a vault, and the rules that will apply to each individual document type. This up-front work will save you many hours when you actually start to configure the system. The following topics describe the major aspects of a vault's configuration.

Vault History

Besides being able to manage released documents and the changes being made to them, Meridian is able to retain all previous revisions of documents that are changed within a vault. This makes the revisions available to users for reference or to revert back to if a released document is unsuitable. Users may also open a vault at a specific moment in the past and view the vault's contents as it existed at that time.

Revision history can be enabled or cleared for the whole vault and is set when the vault is created. It cannot be reconfigured later, although documents in history can be periodically archived or removed as described in *Run the Vault Archive Wizard* in the *Meridian Enterprise Administrator's Guide*.

Configure Vault Settings

The settings of a vault determine some of its basic functionality that applies to all documents within the vault, regardless of their document type. The entire configuration of a vault is also known as its *environment*.

1. In Configurator, expand **Environment** in the configuration tree and select **Vault Settings**.

   The vault's settings appear in property pages in the right pane.

2. Choose one or more of the following options.

   There a large number of settings you can configure. Review the table below to determine which documentation is relevant to the task you want to accomplish.

Tab	Task	Article
General	Configure basic options about the vault Set initial state of documents after import Use document type security Use renditions	Configure General Vault Settings
Authentication	Configure authentication Configure e-signature authentication	Configure Authentication
Redline Layers	Create and edit redline layers used to organize user annotations	Create And Edit Redline Layers
Page Styles	Customize elements of property pages	Edit Page Styles
Assemblies	Configure rules for releasing an assembly document Configure Copy/Derive with References options	Configure the Assembly Options
Extensions	Apply custom user interface extensions to a vault	Apply Extensions To a Vault

Tab	Task	Article
Settings	Apply custom settings using a text editor. Create and link to a custom JavaScript module for PowerWeb.	Settings tab - Vault Settings Create a Custom JavaScript Module in PowerWeb
Enterprise Server	Configure a vault for Publisher	Configure a Vault For Publisher
AMM Settings	Define proxy tags Define relationships between documents and proxy tags Define references between documents and proxy tags	Configure the Document To Tag Relationships
AMM Configurations	Not applicable	The **AMM Configurations** pages is obsolete and provided for backward compatibility with legacy systems only.

Configure General Vault Settings

The **General** tab is where you can configure several basic vault settings such as the vault name and server information. On this tab, you can also set the initial state of documents after import and configure whether you want to use document type security or renditions.

1. In Configurator, expand **Environment** in the configuration tree and select **Vault Settings**.

   The vault's settings appear in property pages in the right pane.
2. On the **General** page, the properties in the following table are read-only and cannot be edited in Configurator.
3. Click **Edit**.
4. On the **General** page, click options or type values using the descriptions in the following table.

Vault general options

Option	Description
Vault name	The name of the vault as it appears to users. Read-only.
Environment revision	The revision number of the vault's configuration data. This property can be useful for tracking and documenting changes that are made to the vault's configuration. Read-only.
Server name	The name of the computer where the Accruent EDM Server service is running. Read-only.
EDM Server revision	The revision number of the Accruent EDM Server service software. Read-only.
Shared folder	The name of the share on the server where user interface extensions are stored. Read-only.
After importing documents	Select an option for the initial state of documents after they have been imported into the vault. **Set state to Under Quick Change**: The documents must be released from the Quick Change workflow before their status is Released. **Set state to Unchanged**: The documents are not in a workflow. The Unchanged status is equivalent to Released except that it does not result from a workflow. **Set state to Under Change**: The documents must be released from their document type workflow before their status is Released. This setting impacts the Import hybrid components as parts of the hybrid document type setting.

Option	Description
Use document type security	Select this option to restrict user access to specific document types. For information on security roles, see Security Roles. This setting affects the options available for the Document type availability setting.
Use renditions	Enable this option if documents in this vault will be rendered or published by Publisher. This option enables the rendition features in the client applications. This setting impacts the Generate renditions after the following transitions setting and the Update rendition setting. To specify the default file extension of documents to import as renditions of existing documents during drag-and-drop operations, set the **DefaultRenditionExtension** setting to the file extension, for example, **.pdf**. This setting can be configured in the **[Vault]** section of the **Application Integration** settings as described in Configure Managed Change.

5. Click **OK**.

Configure Authentication

By default, Meridian Enterprise identifies a user by single sign-on (the current user's Windows account name) and does not prompt the user to log on when they open a vault. Meridian also supports explicit authentication to open a vault with any Meridian Enterprise client application including Application Integration, the application links, and Local Workspace actions.

When authentication is required, users are shown the **Open Vault** dialog. The user must type the same Windows account name and password as the account currently logged on to Windows. Authentication only succeeds if the credentials match. If so configured, failure to correctly type the credentials within the allowed number of attempts will prevent the user from opening any vault until the correct credentials are typed.

> **Note:**
> Enabling operating system authentication requires that the audit log also be enabled to log the authentication results. The audit log can be stored in a database separate from Meridian Enterprise as described in *Configure the Audit Log Connection* in the *Meridian Enterprise Administrator's Guide*. If your environment also includes Meridian Enterprise Server, the audit log can also be stored in its database as described in the *Configure the connection to Meridian Enterprise Server* article in the *Meridian Enterprise Administrator's Guide*.

To configure a vault's authentication settings:

1. In Configurator, expand **Environment** in the configuration tree and select **Vault Settings**.

   The vault's settings appear in property pages in the right pane.
2. Click the **Authentication** tab.

   The current authentication options are shown.
3. Click **Edit**.
4. Click options or type values using the descriptions in the following table.
5. Click **OK**.

Authentication options

Option	Description
Authenticate logon credentials with the operating system	Authenticates the user's credentials with the operating system to authorize opening the current vault. **Note:** If this option is enabled after a vault has already been published as a web location for PowerWeb, access will be denied to users until the vault is republished as a PowerWeb location.

Option	Description
Logon retries	The number of authentication attempts to allow users before locking their account.
Lock user when all retries have failed	Locks the user's account to prevent further access to documents. The identity of the user or their credentials should then be verified by a System Administrator. The account must be unlocked using Meridian Enterprise Administrator or the Meridian Enterprise Server Administration Console tools.
Default domain name	The Windows domain within which the users of this vault should be authenticated. If this option is left blank, users must enter the domain name when they enter their user name, for example, **MYDOMAIN\MyName**.
Remember user name	Retains the user name (but not the password) for subsequent authentication requests.
Use electronic signatures on workflow transitions	Requires electronic signatures when workflow transitions are performed for which signatures have been enabled as described in Configure Document Type Workflowand Configure Transition Authorization.
Show reason page	If enabled, shows a dialog box when documents are electronically signed that contains configurable disclaimer text and prompts the user to select a reason why they are signing the documents.
This lookup list	The name of an existing lookup list from which to show the reasons for signing.
This expression	A VBScript expression that returns an array of reason strings to show for signing. **Note:** The expression should not reference document or folder objects because the dialog box is shown only once for the entire batch of documents even if only one is selected and it is shown before the selection is processed. The vault object is available but provides properties and methods that are of limited value in this scenario.
Disclaimer	Text to show in the dialog box, for example: By entering your user ID and password, you are verifying this document's content and properties congruent with your responsibilities. As such, you have reviewed and are approving the document for it's intended use.
Remember user name for batches of electronic signatures	Retains the user name (but not the password) for each electronic signature required by a batch of documents.

Option	Description
Use SiteCache Client to check electronic signatures	If selected, the user will be prompted to authenticate via Windows before their electronic signature will be applied. If the user has disabled site cache mode, they will be unable to complete the workflow transition.

Important!

If the **Authenticate logon credentials with the operating system** option is enabled, the vault is published as a PowerWeb location, and the website is configured with **Basic authentication**, unauthorized user access to the vault cannot be prevented completely. We do not recommend using that authentication method and recommend that it be set to **Windows integrated authentication** instead.

Create And Edit Redline Layers

The redline layers of a vault allow users to organize their annotations for faster identification when they redline documents in the Meridian client applications. Each layer can have a different name and color that can be used to distinguish between additions, deletions, moves, departments, priority, or any other designation you want to give them.

> **Note:**
> - New vaults are created with one redline layer by default named **Exchange**. If no other redline layers are created, all redlines will be on this layer.
> - The layers you configure in this task are only the default layers that will be available for new documents that are created in Meridian.
> - If a document that contains layers other than these layers is imported into the vault, those redlines will be available.
> - If you delete a layer from the configuration, it does not delete the layer in any documents that use that layer for redlines.

To create and edit redline layers:

1. In Configurator, expand **Environment** in the configuration tree and select **Vault Settings**.

   The vault's settings appear in property pages in the right pane.
2. Click the **Redline Layers** tab.

   The current redline layers are shown.
3. Click **Edit**.
4. Choose one of the following options:
   - To add a redline layer:
     a. Click **Add**.

        The **New Redline Layer** dialog box appears.
     b. Proceed to step 5.
   - To edit a redline layer:
     a. Select the layer in **Available redline layers**.
     b. Select or type options in **Layer details**.
     c. Proceed to step 5.
   - To delete a redline layer:

a. Select the layer in **Available redline layers**.
b. Click **Remove**.

5. Type a name for the layer and click **OK**.

   A new layer is added to **Available redline layers**.
6. Type an optional description in **Description**.
7. Select a color for the layer from **Default color**.

   > **Note:**
   > Users can override a layer's default color by selecting a different color.
8. Click **OK**.

Edit Page Styles

The options on the **Page Styles** page determine how the different elements of property pages will appear. All property pages in the Meridian client applications will use these settings unless they are overridden by the page's own settings, as described in Edit a Property Page.

To edit page styles:

1. In Configurator, expand **Environment** in the configuration tree and select **Vault Settings**.

   The vault's settings appear in property pages in the right pane.
2. Click the **Page Styles** tab.

   The current page style options are shown.
3. Click **Edit**.
4. Select the item that you want to edit from **Page elements**.

   Its current style settings are shown.
5. Select style options from **Font**, **Size**, **Color**, and **Background color** to meet your requirements.

   The corresponding changes appear in the **Preview** area of the page.
6. Click **OK**.

Configure the Assembly Options

Meridian can enforce rules that determine the status of subassembly and part documents when Meridian releases an assembly document that references the other documents. You can also configure a default destination folder where you want the copies of assemblies to be created.

To configure the assembly options:

1. In Configurator, expand **Environment** in the configuration tree and select **Vault Settings**.

   The vault's settings appear in property pages in the right pane.
2. Click the **Assemblies** tab.

   The options and their current settings are shown.
3. Click **Edit**.
4. Click options or type values using the descriptions in the following table.
5. Click **OK**.

Assembly options

Option	Description
Releasing an assembly document	Select the option that best matches your typical business process: • Select **Releases the assembly document and all its references** if subassemblies and parts are not referenced by other assemblies. • Select **Releases the assembly document only** if subassemblies and parts are referenced by other assemblies. This option affects only the reference types that are created by the CAD application links. This setting is also affected by the **Duplicator Default Action** setting of each document type as described in Create And Edit Document Types and by the configuration of the reference types as described in Create And Edit Reference Types.
Copy/Derive with references options	To force all assembly copies to a default folder: 1. Select **Do not show Select Folder dialog before copying**. 2. Click **Browse** and select a destination folder in the vault.

Apply Extensions To a Vault

Custom user interface extensions can be applied to a vault's configuration. These extensions may act upon custom properties used by the vault or provide configuration options. Any property pages included in the extension will appear in Configurator as property pages of the **Vault Settings** branch of the configuration tree.

> **Note:**
> The extensions that you want to apply to a folder type must already be registered in the vault configuration. For more information on registering extensions, see Register Custom Interface Extensions.

To apply extensions to a vault:

1. In Configurator, expand **Environment** in the configuration tree and select **Vault Settings**.

   The vault's settings appear in property pages in the right pane.
2. Click the **Extensions** tab.

   The current vault extensions are shown.
3. Click **Edit**.
4. Click options or type values using the descriptions in the following table.
5. Click **OK**.

Vault extension options

Button	Description
Add	To apply a Visual Basic user interface extension to this vault, click the **Add** button, select a custom extension, and click **OK**.
Remove	To remove a custom user interface extension from the vault, select the extension in the list and click the **Remove** button. **Note:** Do not remove the extensions named **Vault Stored Property Definition Collections Extension** or **Vault Extension**. They are included with all Meridian systems and required.
Up and Down	Click the **Up** and **Down** buttons to arrange the order of the extensions in the list. Their order determines the order in which their property pages display in Configurator, from left to right.

Customize Vault Settings

The **Settings** tab of your **Vault Settings** allows you to customize your configuration using a text editor. Settings should use the same hierarchical structure and syntax as the pages in the **Application Link Settings** group of the **Environment** branch. This means that settings should be grouped into sections that are defined like **[*<SECTIONNAME>*]**. The settings can be read with the VBScript **Vault.Option** property as described in the *Vault Object* article in the *Meridian Enterprise VBScript API Reference*. The settings can only be edited using Meridian Enterprise Configurator.

Configure Your Settings

To configure your vault's settings:

1. In Configurator, expand **Environment** in the configuration tree and select **Vault Settings**.

   The vault's settings appear in property pages in the right pane.
2. Select the **Settings** tab.
3. Click **Edit**.

   The **Settings** tab becomes editable.
4. Make your changes.
5. Click **Apply**.

Create Custom JavaScript Module for PowerWeb

Create a Custom JavaScript Module in PowerWeb

Add event listeners to PowerWeb and kick off custom code when an event is triggered. You can also disable user interface controls in PowerWeb when the module is active and re-enable controls when it is appropriate.

You can link to a custom JavaScript module for PowerWeb on the **Settings** tab of your vault settings. The following sections describe how to create the link, and the functions and events you can use when building your custom JavaScript module.

In the custom JavaScript module, you can use the JavaScript API to implement the functionality you want use. An example use case for using this API could be if you wanted to extend the PowerWeb user interface by adding external pages. In external pages, you have more freedom to develop customized functionality and user interfaces integrated with PowerWeb.

With this API, you can synchronize elements of the PowerWeb UI with actions the user is performing in your external page. For instance, with this functionality you can prevent a user from confirming a wizard before all required data is entered in the external page. For more information about external pages, see Configure External Pages.

The custom JavaScript module must be accessible to users through the same credentials they use to access PowerWeb. If you host the module on the Meridian PowerWeb IIS server, we recommend placing it in a subfolder of the PowerWeb script directory, by default in `C:\inetpub\AMM\Src`. Then, reference it using the Meridian URL.

For example, you can store the custom module in C:\inetpub\AMM\Src\custom\ and, in Configurator, set the **CustomURL** as `https://<domain>/Meridian/Src/custom/`.

Add Link to Custom JavaScript Module for PowerWeb

1. In Configurator, expand **Environment** in the configuration tree and select **Vault Settings**.

   The vault's settings appear in property pages in the right pane.
2. Select the **Settings** tab.
3. Click **Edit**.

   The **Settings** tab becomes editable.
4. Add the following code to your settings:

```
[PowerWeb]
CustomURL = http://yourpage.com/
VaultConnectionScript = Script.js
```

The **CustomURL** can either be an absolute URL or a relative path starting from the root of the webserver hosting PowerWeb. This URL should be where you have hosted the assets that you will use in your implementation, such as the JavaScript file and any additional files, such as images.

The **VaultConnectionScript** is the name of the script that will be loaded in the PowerWeb session. This is setting is specific to the current vault. If you want to implement a different script for another vault, you must do so in that vault's settings. Depending on the logic of your implementation, this script may simply contain event listeners and functions which will trigger functions under certain circumstances, or it may load other JavaScript libraries to support your application.

After the PowerWeb page loads, the function is executed.

5. Click **Apply**.

JavaScript API

JavaScript API

In the custom JavaScript module introduced in the 2022 release, you can use the JavaScript API to implement custom functionality in PowerWeb. An example use case for using this API could be if you wanted to extend the PowerWeb user interface by adding external pages. In external pages, you have more freedom to develop customized functionality and user interfaces integrated with PowerWeb.

With this API, you can synchronize elements of the PowerWeb UI with actions the user is performing in your external page. For instance, with this functionality you can prevent a user from confirming a wizard before all required data is entered in the external page. For more information about external pages, see Configure External Pages.

In this article, we describe the functions and events that are available in the JavaScript API.

The instructions of this article about the context menu apply to Chrome and Edge in native mode, for which the context menu is built from the structure of the ribbon:

1. The first level of the context menu contains all ribbon names.
2. The second level contains all section names.
3. The third level contains all commands in the section, including commands in drop-down lists.

For Internet Explorer and Edge in IE mode, the context menu is built in the same way as in previous releases.

Functions

The following functions can be called in a custom JavaScript module. The Custom JavaScript API is stored in the `window.top.document.customAPI` object, so to apply these methods you should use this example:

```
var meridianDoc = window.top.document;
meridianDoc.customAPI.AddRibbon('NewRibbonTab', 'Project');
```

setCommandStatus

Sets the status of a command in both the ribbon and context menu.

Syntax

```
customAPI.setCommandStatus (cmdId, status)
```

Parameters

Name	Description
cmdId	The ID of the command
Status	Can be set to "Active", "Disabled", or "Hidden"

addRibbon

Adds an empty ribbon to the ribbon menu and a top-level item in the context menu. Returns node of the new tab.

Syntax

```
customAPI.addRibbon (displayNameRibbon, afterRibbonId)
```

Parameters

Name	Description
displayNameRibbon	The label of the ribbon
afterRibbonId	The name of the ribbon that comes before the ribbon created by this function.

addRibbonSection

Adds a section to a ribbon tab and a second-level item to the context menu. Returns node of the new section.

Syntax

```
customAPI.addRibbonSection (ribbonTabId, displayNameSection,
afterSectionId)
```

Parameters

Name	Description
ribbonTabId	The ID of the ribbon the section is being added to
displayNameSection	The label of the section
afterSectionId	Enter the name of the section that should come before this section. Leave empty if the position is not important.

addRibbonCommand

Adds a command to a section in the ribbon and a command to the second-level item in the context menu. Returns node with added command.

Syntax

```
customAPI.addRibbonCommand (tabName, sectionName, displayName,
afterCommandName, commandType, displayCommandId, pathIcon)
```

Parameters

Name	Description
tabName	The name of the ribbon tab where you want to add the command.
sectionName	The name of the section in the ribbon tab the command is being added to.
displayName	The name of the command.
afterCommandName	Enter **null** if the command will be the first command in the section or if its position is not important. Enter the **ID** of the previous command if the new command needs to be after another command.
commandType	Enter one of three values: • 0: Lookup list command This is a drop-down list that does not have a default command. • 1: Simple command • 2: Drop-down list with default command
displayCommandId	The command ID.
pathIcon	The path of the icon displayed next to the command.

addSubCommand

Adds a command to the drop-down menu of a command in the ribbon and context menu. Returns node with new command.

Syntax

```
customAPI.addSubCommand (afterCmdId, displayName, displayCmdId,
pathIcon)
```

Parameters

Name	Description
afterCmdId	The name of the command that comes before this command in the drop-down menu.
displayName	The label of the command.
displayCmdId	ID of the new command.
pathIcon	The path of the icon displayed next to the command.

Enable or disable UI controls in PowerWeb

In some cases when your custom JavaScript displays a dialog, all PowerWeb user interface controls need to be disabled to prevent the user from unexpectedly executing another command, selecting another document, or changing the View, Scope, or Vault. There are two functions to support this use case:

```
customAPI.disableAllUIcontrols ()
```

Disables all user interface controls in PowerWeb.

```
customAPI.restoreAllUIcontrols ()
```

Restores the status of all user interface controls to their previous status.

Events

The following events can be used in a custom JavaScript module. For these events, use the following syntax:

```
<element>.addEventListener ("bc:<EventName>", function(event){});
```

ChangeEditMode

Occurs when the user clicks the **Edit**, **OK**, **Apply**, or **Cancel** buttons in the property page. You can cancel the command by using `event.preventDefault()`.

Syntax

```
<element>.addEventListener ("bc:ChangeEditMode", function(event){});
```

This event stores the following parameters in an event object:

Parameters

Name	Description
event.oid	Item ID of the current document
event.ButtonName	Button Name. Value can be set to “Edit”, “OK”, “Apply” or “Cancel”.

ChangeScope

Occurs when the user selects another scope.

Syntax

```
<element>.addEventListener ("bc:ChangeScope", function(event){});
```

This event stores the following parameters in an event object:

Parameters

Name	Description
event.ctxForCustomApi.scope	Name of the selected scope

Context

Occurs when the user selects another view, refreshes page, switches between vaults, and so on. This event is also fired for the changeView event.

The object `event.ctxForCustomApi` stores contextual data when an object is created. This means that you can refer to these parameters to get the corresponding values, as you can in the table see below.

Syntax

```
<element>.addEventListener ("bc:Context", function(event){});
```

This event stores the following parameters in an event object:

Parameters

Name	Description
event.ctxForCustomApi.view_displayname	Name of the selected view
event.ctxForCustomApi.view_oid	View OID
event.ctxForCustomApi.vault_displayname	Vault displayname
event.ctxForCustomApi.vault_oid	Vault OID
event.ctxForCustomApi.baseline_context	Baseline info
event.ctxForCustomApi.baseline_displayname	Baseline displayname

CommandSelected

Occurs when the user selects the command in the ribbon or context menu. You can cancel the command by using `event.preventDefault()`.

Syntax

```
<element>.addEventListener ("bc:CommandSelected", function(event){});
```

This event stores the following parameters in an event object:

Parameters

Name	Description
event.oid	Item ID of the current document or folder. If the command is applied to the search result, this value is null.
event.checkboxList	List of item IDs selected with a check box.
event.CommandName	Name of the command.

CommandSubmitted

Occurs when the command has been sent to the web server.

Syntax

```
<element>.addEventListener ("bc:CommandSubmitted", function(event)
{});
```

This event stores the following parameters in an event object:

Parameters

Name	Description
event.oid	Item ID of the current document or folder. If the command is applied to the search result, this value is null.
event.checkboxList	List of item IDs selected with a check box.
event.CommandName	Name of the command.

DeselectItem

Occurs when the user deselects the check box of an item in a list.

Syntax

```
<element>.addEventListener ("bc:DeselectItem", function(event){});
```

This event stores the following parameters in an event object:

Parameters

Name	Description
event.oid	Item ID of the current document

SelectItem

Occurs when the user selects an item in a list or selects the check box of an item in a list.

Syntax

```
<element>.addEventListener ("bc:SelectItem", function(event){});
```

This event stores the following parameters in an event object:

Parameters

Name	Description
event.oid	Item ID of the current document
event.checkboxClicked	Check box status (true or false)

SelectPane

Occurs when the user selects a pane.

Syntax

```
<element>.addEventListener ("bc:SelectPane", function(event){});
```

This event stores the following parameters in an event object:

Parameters

Name	Description
event.ctxForCustomApi.oid	Item ID of the current document
event.ctxForCustomApi.viewName	Name of the selected pane. Value can be set to “Properties”, “Rendition”, “Revisions”, “References” , “ProjectCopies“ or “Workflow”.

SelectTab

Occurs when the user selects a property tab.

Syntax

```
<element>.addEventListener ("bc:SelectTab", function(event){});
```

This event stores the following parameters in an event object:

Parameters

Name	Description
event.ctxForCustomApi.oid	Item ID of the current document
event.ctxForCustomApi.pageName	Name of the selected property tab.

Configure a Vault For Publisher

After the Publisher components have been installed during Meridian Enterprise Server setup, the vaults that will serve as source or destination systems must be configured.

See our Document Synchronization Methods Overview to learn about the three methods you can use to synchronize document contents, title blocks, and references with PowerWeb.

To configure the Meridian Enterprise application server:

1. In the Meridian Enterprise Administrator, click **EDM Server** in the left pane.

   The active vaults are listed in the right pane.
2. Select the vault that you want to configure in the right pane.
3. On the **Action** menu, select **Properties**.

   The vault's **Properties** dialog box appears.
4. Click the **Advanced Features** tab.

   The **Advanced Features** page appears.
5. Select **Enable Publisher extension**.
6. Click **OK**.
7. In Meridian Enterprise Configurator, expand **Environment** in the configuration tree and select **Vault Settings**.

   The vault's configuration pages appear.
8. Click the **Enterprise Server** tab.

   The Publisher configuration options appear.
9. Click **Edit**.

   The page becomes editable.
10. Click options or type values using the descriptions in the following table.
11. Click **OK**.
12. Grant the privileges described in Security Permission Descriptions to the Meridian Enterprise roles that you want to allow to use the publishing commands.

    For more information on granting security privileges, see Manage Security Roles.

Publisher configuration options

Option	Description
Prevent duplicate registration	Ignores new publishing tasks for documents for which publishing tasks already exist in the queue. This option is not available if the Publisher database is hosted by an Oracle server. If enabled, **Fail the whole batch operation when any duplicate is found** will cause the publishing job to be revoked if duplicate documents are detected within a batch submitted using the VBScript methods of the **MeridianQueue** object described in *Registering Programmatically Without the Task Server* in the *Meridian Enterprise Server Administrator's Guide*.
Synchronize rendition lookup lists	Populates the **Rendition Page Pen Table**, **Rendition Page Size**, and **Rendition Page XOD Resolution** lookup lists with values retrieved from the Meridian Enterprise Server computer. The lookup lists are described in the following table.

Option	Description
Publisher Jobs	Select the names of publishing jobs to use for the following tasks: • **Create rendition**: Publishing job used for the **Update Rendition** action • **Write title block properties**: Publishing job used for the **Properties to File** action • **Read title block properties**: Publishing job used for the **Properties from File** action • **Synchronize references**: Publishing job used for the **References from File** action To learn more about each of these actions, see the following articles in the *Meridian Enterprise User's Guide*: • *Update Renditions* • *Synchronize File Properties* • *Synchronize References* To learn more about publishing jobs and how to configure them, see the *Publishing Jobs* section in the *Meridian Enterprise Server Administrator's Guide*. If the **Create rendition** publishing job occurs too close in time to one of the other publishing job types, a conflict can arise where one or more jobs are trying to access the same file. This may result in the rendition failing, or the rendition may not include updated title blocks or references. To ensure the title block is updated before a rendition is created, on your rendering profile, ensure that the **Update title blocks before rendering** setting is selected. To learn how to configure this setting, see the appropriate rendering profile article in *Rendering Profiles* in the *Meridian Enterprise Server Administrator's Guide*. If a file is locked during rendering, you may see an error message in the rendition process log that starts with the phrase, "no storage available". To avoid issues with a locked file preventing a rendition from being generated, increase the values of the following settings in the **C:\ProgramData\BlueCieloECM\EnterpriseServices\PublishingCapability.dat** file: • **RetryWriteRendition**: Number of times that Publisher will retry a rendition before the rendition fails • **WaitWriteRendition**: Number of seconds that Publisher will wait before a retry is attempted These settings only take effect when a file is locked, and they should not impact overall system performance. To learn more about the settings in the **PublishingCapability.dat** file, see the *PublishingCapability.dat* article in the *Meridian Enterprise Server Administrator's Guide*.

The rendition lookup lists provide values for the properties in the **Rendition Properties** property set and appear on the **Rendition** property page in the Meridian Enterprise client applications. The **Rendition** property page appears when the **Use renditions** option has been enabled for the vault

in the Meridian Enterprise PowerUser client. The lookup list values may be modified to meet specific requirements.

Rendition property set lookup lists

Name	Description
Rendition Page Color	Color depths to render to: **Color** or **Black and white**.
Rendition Page Layout	Views available within the source documents to render.
Rendition Page Orientation	Orientations of the page to render to: **Landscape** or **Portrait**.
Rendition Page Pen Table	Pen settings filenames to apply to the renditions. Applicable only if the publishing job is configured to use pen settings. Filenames are those that are available on the computer. The location of these files depends on which rendering application you use. • The Teigha files are stored in: `C:\Program Files\BC-Meridian\BC Enterprise\Teigha.net`
Rendition Page Size	Sizes of the pages to render to. Values are retrieved from the printing settings of the Meridian Enterprise Server computer when the **PublishDocumentUIExtension** extension is configured. The Microsoft default page sizes may not include the page sizes that your users need. In that scenario, you will need to set up custom page sizes on the Enterprise Server and Publisher machines. The process for setting up custom page sizes depends on which Windows features have been installed on the Servers. Our experts recommend using a tool such as Microsoft's **Print Management Console**, which is available as an optional feature for Windows. Learn how to use the Microsoft Print Management Console to add custom page sizes.
Rendition Page XOD Resolution	Resolutions at which to render documents. Lower values may lack sufficient clarity. Higher values may cause slower viewing. These values are retrieved from the rendering profile that resides in Meridian Enterprise Server when the **Synchronize rendition lookup lists** option described above is enabled. If this lookup list is empty after synchronization, scan the rendering profile as described in the *Create and edit a rendering profile* article in the *Meridian Enterprise Server Administrator's Guide* and then run the synchronization job again to repopulate the list with values.

In VBScript, use the **User.HasPrivilege** method with the **Can Publish** privilege to verify whether a user should be allowed to publish a particular document.

Create Custom Page Sizes for Meridian Enterprise

The default Microsoft page sizes may not include the page sizes that your users need. In that scenario, you will need to set up custom page sizes on the Enterprise Server and Publisher machines.

The process for setting up custom page sizes depends on which Windows features have been installed on the Servers. Our experts recommend using a tool such as **Print Management**, which is available as an optional feature for Windows.

Enable Print Management Console

To enable the **Print Management Console**:

1. Navigate to **Start** > **Settings** > **Apps** > **Optional features** > **Add a feature**.
2. Select **Print Management Console**.
3. Click **Install**.

   Once installation is complete, you can access the **Print Management Console** from the **Start** menu.

Create Custom Page Sizes

To create custom page sizes:

1. Open the **Print Management Console**.
2. Expand **Print Servers** and expand the name of the server you want to configure.

   You will need to do this process for your Enterprise Server and Publisher machines.
3. Right-click **Forms** and select **Manage Forms** from the menu that opens.

   The **Printer Server Properties** window opens.
4. Select **Create a new form**.

   The fields in the window become editable.
5. Enter the name of the page size you want to create in **Form name**.

   > **Important!**
   > The Meridian Enterprise Configurator is case-sensitive, so you will need to enter the name of the page size in Configurator exactly as how it is written in the **Form name** field.
6. Enter the dimensions of your custom page size.
7. Click **Save Form**.

8. Click **Close**.

   Your page size appears in the **Forms** section of the **Print Management Console**. To view the full list of page sizes, click **Forms** in the menu.

Add Custom Page Sizes to Configurator

You may want to remove unnecessary page sizes so that your users do not select one that is incorrect.

To add the custom page sizes you created to the Configurator:

1. In Configurator, expand **Lookup Lists** in the configuration tree to display the existing lookup lists.
2. Select the **Rendition Page Size** lookup list.

   This lookup list is automatically created when the Publisher module is enabled for the vault. The values are populated automatically the first time you connect the vault to a rendition job.
3. Click **Edit**.
4. Click the **Entries** tab.

   The existing page sizes are shown.
5. Choose between two options:
   - To add a custom page size:
     a. Click **Add Entry**.

        The **Add lookup list entry** dialog opens.
     b. Enter the name of the page size.

        The Configurator is case-sensitive, so you will need to enter the name of the page size exactly as how it was entered in the Create Custom Page Sizes procedures above.
     c. Click **OK**.
   - To remove a custom page size, click **Remove Entry**.

     The entry is removed.
6. Click **Apply**.

   Your changes are saved.

Configure Hotspot Navigation

You can configure Meridian to show a dialog that lists the vault objects that are referenced by the linked document or object. If a hotspot is linked to another document, the dialog will show the linked document's name and the objects that are linked to that document. Conversely, if a hotspot is linked to an object, the dialog will show the linked object's name and the documents that are linked to that object. This can be useful if users typically want to navigate beyond the object that is linked to the hotspot.

If the user does not have access to the folder that contains linked documents, they will be shown an **Access denied** error message.

Hotspots can be created manually or automatically from AutoCAD attribute tag names. Learn more about how to create hotspots in our Hotspots Overview.

1. In Configurator, expand **Environment** in the configuration tree and select **Application Link Settings**.

   The settings for each application link appear in property pages in the right pane.

2. Click **Application Integration**.

   The **Application Integration** settings page appears in the right pane.

3. Click **Edit**.

   To export the settings file to your computer, click the **Export** button. This can be useful if you want to edit the file in another text editor. You can then copy your changes to the Clipboard and paste them into Configurator.

4. Locate the section of the file titled **[Hotspots]** and locate the **Action** setting.

   If the **[Hotspots]** section or **Action** setting do not yet exit, create them at the bottom of the file as in the following example. The value of the **Action** setting determines what Meridian does when a user clicks a hotspot.

   ```
   [Hotspots]
   Action=SelectionDialog
   ```

5. Edit the value of **Action** using the descriptions in the following table.
6. Click **OK**.

Hotspot navigation actions

Option	Description
Goto	Immediately select the document or asset object (Meridian Asset Management Module only) that is linked to the hotspot.
SelectionDialog	Display a dialog that shows the name of the document or asset object to which the hotspot is linked and lists the objects that are linked to that document or asset object.

Configure Column Layouts

Most views in the Meridian client applications where columns of document properties are displayed can be configured. You can configure which columns are displayed and in what order. This is useful because users will want to see different properties in some views than others.

To configure column layouts:

1. In Configurator, expand **Environment** in the configuration tree and select **Column Collections**.

   The vault's settings appear in property pages in the right pane.
2. Click one of the tabs listed in the table below.

   The current column layout is shown.
3. Click **Edit**.
4. To add a property to the layout:
   a. Select a property from **Available columns** or **From folder of type**.
   b. Click the right arrow button to add it to the **Displayed columns** list.

      Adding folder type properties to the **Displayed columns** list is required to make the properties searchable in the client applications.
5. To remove a property from the **Displayed columns** list, select the property and click the left arrow button .
6. After you have selected the appropriate properties, use the up arrow button and down arrow button to arrange the order of the properties in the **Displayed columns** list.

   Their order determines the order in which they will appear in the view, from left to right.
7. Click **OK**.

   A property added to the **Displayed columns** list will remain assigned to the column layout even after the property set is unassigned from any document or folder types as described in Create And Edit Custom Property Sets. Unassigning it merely makes it unavailable for being added to a column layout from that moment on, it does not remove it from any assigned column layouts. To remove it from a layout, you must explicitly remove it as described in step 5.

Each view can be configured using a different property page, as described in the following table.

Configurable column layouts

Page	Description
Folders View Columns	Columns shown in the **Explorer** navigation view.
Search Result Columns	Columns shown in the results of the **Find documents** command.
Folder Search Result Columns	Columns shown in the results of the **Find folders** command.
Preferred for Search	Default properties listed in the **Property** drop-down list on the **More Criteria** page in the **Find** dialog for users without the **Advanced Document Properties** privilege. Users with the privilege may select from all defined properties. If empty, any user may select from all defined properties regardless of the privilege. Select properties in the **From folder of type** list to make those folder properties searchable.
Project Copies Columns	Columns shown in the **Reference Explorer** by the **Show Project Copies** command.
Revisions Dialog Columns	Columns shown in the **Revisions** dialog of a document.
Archive Columns	Properties output by the **Vault Archive Wizard** in the Meridian Enterprise Administrator.
References Dialog Columns	Columns shown in the **Select Documents** dialog when creating a reference to a document.
Create Project Copy Columns	Columns shown in the **Select Project** dialog when you create a Project Copy in case the ProjectsFolderTree setting is set to 0. If ProjectsFolderTree is set to 0 and this collection is empty, the path to the project folder shows.
Set Property Value	Properties shown by the **Set Property Value** command. If empty, custom properties that are enabled for scripting and rendition properties are shown by default. Functionality of the command is determined by the **Set Property Value** and **Advanced Set Property Value** privileges described in Vault Privileges.

Field-Path Definition

The folder structure of a vault can be created and maintained manually just like folders in a normal file system. Alternatively, the vault can be configured with a Field-Path definition to specify key document properties that determine the folder structure of the vault. Each level of the Field-Path definition can represent a different property. The Field-Path definition can be any number of levels deep, although we recommend a practical limit of four or five levels. More levels make vault navigation tedious and time-consuming for users.

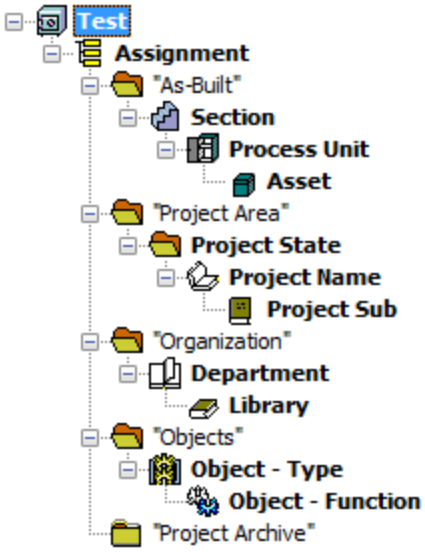
Configuring the Field-Path definition creates an automatic, consistent storage structure that has the following advantages:

- Folder names and levels can conform to your organization's existing standards.
- Folder duplication is prevented.
- If the value of a document property in the Field-Path definition changes, the document will be moved to the correct folder automatically.
- If a document is moved manually, its Field-Path definition properties will be updated accordingly.
- If a document is imported into a folder, its Field-Path definition properties will be automatically set to reflect its location within the vault.

A Field-Path definition can be composed of two types of folders, levels and branches. A *level* uses the values of a property for the folder names created at the selected level of the Field-Path definition, as described above. There can be many different folder names at that level, each determined by user input or property assignments.

A *branch* uses one of a predefined set of values as its folder name. Branches stem from a *branch root* that specifies the property for which the branch folder names become the only valid values. A branch also terminates the level-based folder structure to that point and a different level-based folder structure can begin at the next level.

For example, the following figure shows a Field-Path definition composed of both levels and branches. The property names of levels are indicated in **bold** text. Folder names surrounded in quotes (“”) indicate predefined branches that, in effect, are a lookup list for the **Assignment** property that is the branch root. Notice that the folder structure below each branch defines a different sequence of properties (levels). A Field-Path definition composed only of levels would only have a single sequence of properties to which all documents would have to conform. Branches provide greater flexibility, allowing different document sets to be stored in different folder structures in the same vault.



> **Note:**
> Even with a Field-Path definition configured, any user that has the **Create Child Folder** privilege can create unmanaged folders. That is, subfolders of the lowest folder that is controlled by the Field-Path definition. Creating such folders may cause expected results such as documents that automatically move to the nearest Field-Path definition-controlled folder after creation or after editing document properties. We recommend avoiding the use of unmanaged folders in a vault with a Field-Path definition.

Configuring the Field-Path definition is described in the following topics.

Create the Initial Field-Path Definition

Creating an initial Field-Path definition maps key document properties to specific levels in the folder structure of a vault. The values of these properties are then used to create new folders as necessary to store the documents as they are created or imported.

The properties that you want to use in the Field-Path definition must already exist. For information on creating properties, see Create And Edit Custom Properties.

Changing the initial Field-Path definition of a vault with existing documents requires that all documents be in a released state before they can be moved to new locations. This may not be practical and you should consider using the **Change Definition** command described in Change the Field-Path Definition instead.

> **Important!**
> Changing the initial Field-Path definition of a vault with many existing documents requires that Meridian recalculate the path of every document and possibly move the document, which can take a long time in a large vault. For these reasons, this task should only be performed during non-production hours when no users are connected to the vault.

To create the Field-Path definition:

1. In Configurator, on the **Vault** menu, point to **Field-Path** and then click **Define Initial Definition**.

   A dialog box opens, asking you to confirm your choice.

2. Click **Yes**.

   The **Define Initial Definition** dialog box appears showing the current Field-Path folder structure.

3. In the folder structure, click an existing level below which you want to add a new level or branch and then click the **New Level** button .

   The **Add Level** dialog box appears.

4. In the **Property** list, click the name of an existing property to control the names of the folders created at the selected level of the vault.

   Each property may be used more than once in the Field-Path definition.

5. Click a level type, either **Normal level** or **Branch root**.

6. Click **OK**.

   If you selected **Normal level** in the **Add Level** dialog, a new level is added to **Current folder structure** and the property's name appears as the default in the **Property** list.

7. Click options or type values using the descriptions in the following table.

If you selected **Branch root** in the **Add Level** dialog, the **Branches for <*PropertyName*>** dialog box appears.

a. Type branch names in **Add branch** and click the **Add** button to add them to the list of predefined folder names.

   These names will be used for the subfolders that are created within the branch root property that you selected in step 4.

   Click the **Remove** button to remove a branch name.

   Click the **Rename** button to rename a branch name.

b. When you are finished adding branch names, click **Close** .

   The specified branches appear below the branch root in **Current folder structure**.

c. Select each new branch and then select the folder types that may be created by users at that level.

Field-Path level options

Option	Description
Property	If necessary, select a different property to assign to the selected level.
Default folder type	Select the default folder type for this level. This option is cleared when a branch root is selected.
Applied folder types	Select the folder types that may be selected by users for new folders they create manually at this level. This option is cleared when a branch root is selected.
Icon	Select an icon to display for the folders at this level. This option is cleared when a branch root is selected.

8. Use the buttons on the toolbar to add and arrange additional levels and branches to create the desired folder structure.

   The buttons are described in the following table.

Define Initial Definition dialog toolbar buttons

Icon	Description
	Refreshes the **Current folder structure** view
	Adds a new branch or level

Icon	Description
	Moves the selected level up or down within the Field-Path definition
	Deletes the selected level from the Field-Path definition

9. Click **OK**.

   A dialog box opens, asking you to confirm your choice.

10. Click **Yes**.

    The new Field-Path definition is saved and existing documents are moved to new locations, if necessary.

Change the Field-Path Definition

Changing an existing Field-Path definition allows you to remap or unmap properties from the existing folders of a vault.

After importing a large number of documents into a vault from an organized folder structure, use this command to map properties to the imported folder levels. This will set the corresponding properties for the imported documents and cause new documents to conform to the same Field-Path definition.

> **Important!**
> Changing an existing Field-Path definition of a vault with many existing documents can take a long time in a large vault. For these reasons, this task should only be performed during non-production hours when no users are connected to the vault.

To change the Field-Path definition:

1. In Configurator, on the **Vault** menu, point to **Field-Path** and then select **Change Definition**.

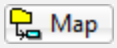
   The **Change Field-Path Definition** dialog box appears, showing the existing folder structure of the vault and the mapped properties.
2. Select a folder level in **Current folder structure**.

   Its corresponding property is highlighted in **Properties**, its icon appears in the **Icon** list, and if it is a branch level, the **Branch level** option is selected.
3. Use the buttons on the toolbar to edit the folder structure.

   The buttons are described in the following table.
4. To set a default folder type to be created at specific levels in the folder structure:
   - Select the folder level that you want to configure.
   - Select the folder type in **Default folder type**.
5. Click **OK**.

Change Field-Path Definition dialog buttons

Icon	Description
	Refreshes the **Current folder structure** view.
	Creates a new subfolder of the selected folder. This folder will be mapped to the corresponding level or branch of the current Field-Path definition.
	Deletes the selected folder.

Icon	Description
	Changes the folder type of the selected folder.
	Adds a new property, as described in Create And Edit Custom Properties.
	Select an unmapped folder, then select a property from **Properties**, and then click this button to map the selected folder to the selected property.
	Select a mapped folder and click this button to remove the current property mapping of the folder. A confirmation dialog box appears. Click **Yes** to proceed.

Import Documents To a Vault

There are three methods for importing documents to a vault:

- Drag and drop in the Meridian client applications as described in the *Import Files Using Drag And Drop* article in the *Meridian Enterprise User's Guide*

  > **Note:**
  > Because this action will create a new revision and the document must be in a released state, this command must be customized to place the document in the correct state of a workflow according to your organization's business process for this action. You can do this in the **DocGenericEvent_BeforeReplaceContent** event as described in the *Document Generic Events* article in the *Meridian Enterprise VBScript API Reference*. If the command is not customized, an **Access is denied** error will result and the action will fail.

- With the **Document Import Tool** as described in the *Document Import Tool* article in the *Meridian Enterprise User's Guide*
- With the **Database Import Wizard** in the Configurator

The **Database Import Wizard** is described in the following topics.

The **Database Import Wizard** is a powerful way to import large numbers of documents into a vault more conveniently than with drag and drop. It works like the **Document Import Tool** available to users in PowerUser, but the **Database Import Wizard** is slightly more powerful.

With the **Database Import Wizard**, you can:

- Import any number of documents from various locations using a single data file
- Import property data from standard ODBC-compatible data files
- Let the import run unattended while you do other things
- Import multiple hybrid document files into a single hybrid document
- Import renditions to be attached to native content
- Import data from CAD drawing title blocks
- Import entire assemblies or subassemblies while maintaining references
- Populate the properties of imported documents from the data file or with fixed values
- Import multiple revisions as a single document in a vault
- Save different combinations of import options as templates for reuse later
- Monitor import progress and statistics

Configuring these options correctly takes a little time, but the settings can be saved to configuration files and reused for similar import projects.

Before you begin to import documents, we recommend that you read and understand all of the topics in this section completely. Then analyze and document your organization's requirements for each of the above items. This plan will help you to complete the **Database Import Wizard** with minimal effort. The quality of the import results will be only as good as the quality of the data you import. Import mistakes are much easier to avoid than they are to correct.

Configuring and running the **Database Import Wizard** is described in the following topics.

Create an Import Source Database

The success or failure of an import performed by the **Database Import Wizard** is very often determined by the quality of the source database. Creating an accurate and powerful source database doesn't require a computer science degree. You can create one in an application you probably already know, just by being prepared, being organized, and paying close attention to details. After you've created a working source database, you can reuse the basic structure of the file over and over again for future imports just by changing the data.

The source database must include a field that contains the paths to the files to be imported so that the metadata and document content can be associated with the same document in the vault. Document metadata cannot be imported to existing documents in a vault.

Following are guidelines and suggestions for creating a source database for the **Database Import Wizard**:

- Choose the file format you know best.

  Practically any ODBC data file will work equally well with the **Database Import Wizard**; there are few advantages of any one over another. The important thing is to be able to easily create the necessary data structure in the file and type document metadata.

  Importing from a Microsoft Excel worksheet is limited to 256 columns. If your source data includes more than 256 properties, choose a different file format.

  If you regularly import documents from other departments, divisions, or external business partners, you might be able to get them to create the source database for you if you give them these guidelines, especially if they have the document data readily available and you do not.

  Alternatively, you might have to accept their document data in whatever format you can get from them and then convert or clean up the data yourself into a format usable by the **Database Import Wizard**.

- The source database must include fields with the following document metadata at a minimum, in order to successfully import documents into a vault:
  - **Path**: To the source file to be imported. Select this field for the **Path field** option in the **Database Import Wizard**, as described in Import Documents From a Database.

    This path should be relative to the computer that will be running the **Database Import Wizard**. Use URLs to specify paths on other computers rather than mapped drive letters that may not exist or match.

    Any files not found in this location will not be imported, so this field is the most important of all. Confirm that every file exists before you start an import.
  - **File name**: In addition to the full path to the file in the preceding field.

This value will be used to assign the document's name in the vault. If you can, use a query inside your application to create this data for you if you don't have it in a separate field already.

Select this field to initialize the **Name** property in the **Database Import Wizard**, as described in Initialize Document Properties.

- **Revision number**: This is another critical piece of metadata. Without it, Meridian will assign the first revision number calculated by the revision number options of the destination document type to your imported documents.

  This number may be lower than the actual revision number of the document. Without accurate revision numbers, you can never fully trust the documents to be accurate.

  For information on the fields required to correctly assign revision numbers, see Import Revisions.

  All revision numbers should be either a number or a letter. If the source database contains a mixture of numbers and letters in the same field, either make them all numbers or letters, change the column type to Text, or consider the workarounds described in Mixed data types in Excel column.

- **Document type**: This field is less critical than the others listed here because the document type of a document can be changed later, although you don't want to have to change the type of many documents. Without this field, Meridian will assign the vault's default document type to imported documents.

  This is a necessary field if you want to import a mix of document types in the same batch.

  For more information on the data required to assign document types, see Assign Document Types To Imported Files.

- If you have additional metadata, or you can make it from other fields or sources, you will be glad if you import it so that it is available for reference and searching in Meridian. Additional data cannot be imported to existing documents later. Optional, but important, metadata fields include:

  - **Status**: The workflow state of the documents being imported.

    Set this field to values that can be assigned to the **Status** property (**Under Change**, **Released**, **Retired**, **In Review**, and so on) as described in Initialize Document Properties.

  - **Created by/Modified by**: These fields can either be operating system file data or data maintained in another data file. Either way, knowing who created and/or modified the document last will be valuable.

    Select these fields to initialize properties as described in Initialize Document Properties.

- If you have any other legacy metadata about the documents being imported, take time to carefully consider every piece.

  Any data that will help identify documents should be a candidate for import. Numbers, names, codes, document titles, departments, comments, sizes, and so on can all be valuable when it comes time to search for and revise the imported documents with confidence.

  Select these fields to initialize properties as described in Initialize Document Properties.

Consult a database expert within your organization to help you create the best possible source database. He or she may be able to save you a lot of time and effort and help produce a better result. When the documents are in the vault, the metadata will be more difficult to change.

Import Documents From a Database

This article discusses how to use the **Database Import Wizard** to import documents and their metadata into Meridian Enterprise.

Notes about Performance

- The time that it takes to import documents is affected by many factors. For the best performance, we recommend that the source database and document files reside on the Meridian server. After the import is complete and has been accepted, the source data can be deleted. To estimate the time required, perform a test import with a subset of the data and extrapolate the results.
- Perform large imports after business hours so that server performance is maintained for production work. Importing thousands of documents with the **Database Import Wizard** can cause delays that are unacceptable to system users.
- To improve the performance of the server during large imports, temporarily configure the following settings as described in the *Meridian Enterprise Administrator's Guide*. Remember to restore the settings when the import is complete.
    - Depending on the version of Windows, set **Processor scheduling** or **Application response** setting to **Programs** or **Applications** respectively, as described in the *Configure Application Response* article.
    - Increase the value of the **MaximumLogSize** setting of the vault to a value that will prevent snapshots from being made during the import, which will delay completion. This setting is described in the *Configure the MaximumLogSize Setting* article.
    - Increase the value of the **MinimumSnapshotInterval** setting of the vault to a value that will prevent snapshots from being made during the import, which will delay completion. This setting is described in the *Configure the MinimumSnapShotInterval Setting* article.

Important! Before You Get Started

- Before attempting a large import, back up the vault first. That way, if the import does not go as planned, you can reverse the import easily by restoring the backup. Deleting incorrectly imported documents does not reclaim vault database storage space. For information on backing up vaults, see the *Backups And Recovery* section of the *Meridian Enterprise Administrator's Guide*.

- After files have been imported to a vault, document properties that were not explicitly set during the import (from title blocks, default property assignments, and so on) contain no values. Those properties will not be synchronized *to* the imported content files by the Meridian application links. This is by design to prevent overwriting existing values.

  The properties can be synchronized *from* the imported content files. Such properties must be set in the vault to an explicit value at least once before the properties will be synchronized to the content files.
- Before importing files with external references, such AutoCAD drawings and Autodesk Inventor assemblies, all external reference files must be fully resolved or they must be located in the same folder as the main file. Unresolved external references files will prevent the creation of the required Meridian references.
- Before you import many documents into a vault, we recommend that you finish all vault configuration. Some configuration changes can be very time-consuming when the vault is populated by a large number of documents. This is especially true for the Field-Path definition. We recommend that you import documents into folders that were created using the Field-Path definition that you have configured.

Database Import Wizard

To import documents and their metadata with the **Database Import Wizard**:

1. Create a source database that contains metadata about the documents that you want to import, as described in Create an Import Source Database.
2. In Configurator, on the **Vault** menu, select **Import from a Database**.

   The **Database Import Wizard** appears.
3. Click **Next**.

   The **Configuration File** page appears.
4. To use an existing **Database Import Wizard** configuration file:
   - Select it from the list, OR
   - Click **Browse,** select the file, and click **Open**.
5. Choose one of the following options:
   - If the configuration file is complete and correct, click **Start Import** to begin the import immediately.
   - Click **Resume** to continue a previous import.
   - To configure a new import, click **Next**.

     The **Database** page appears.
6. Click options or type values using the descriptions in the following table.

Database options

Option	Description
Select the database to import from	Click **Browse**, select a database file type from the list, select the database that contains the document metadata that you want to import, and click **Open**. **Note:** If the source database is a Microsoft Excel worksheet, you must specify the cells that contain the data to import as a named range in the worksheet. You will select this range in the **Select Table** dialog in the next step. If you don't create a range, the **Database Import Wizard** cannot determine the data to import. For more information on naming a range in Excel, refer to the Excel documentation. For information about importing other types of tables from Excel, see the description of the **ShowAllTablesImportDB** registry value in the HKEY_CURRENT_USER\Software\Cyco\AutoManager Meridian\CurrentVersion\Client\Settings article in the *Meridian Enterprise Administrator's Guide* .
Show ODBC driver setup dialog	Allows you to configure an ODBC connection to the database, if one is not available already.

Depending on the data source you selected, the **Select Table** dialog might appear.

7. If so, select the table (or Excel range) that contains the data that you want to import and click **OK**.

   The **File Path Field** page appears.

8. Select a field in the source database from **Path field** that contains the path to the files that you want to import.
9. Click **Next**.

   The **Document types** page appears.

10. Assign document types, as described in Assign Document Types To Imported Files and click **Next**.

    The **External References** page appears.

11. If you want the **Database Import Wizard** to attempt to resolve external references after the import has completed, select **Resolve external references**.

    Resolving references creates a Meridian reference between the documents.

12. Click **Next**.

    The **Initialize Properties** page appears.

> **Note:**
> If CAD external references will be resolved during import, the native application may need to be installed on the computer where the **Database Import Wizard** is run. This is true for all CAD applications except AutoCAD.

13. Select options to initialize properties as described in Initialize Document Properties and click **Next**.

    The **Title Block Fields** page appears.

14. Select **Import title block data** if the information in CAD drawing title blocks is more complete or accurate than the data in the source database.

    The title block data will overwrite data imported from the source database. The document types assigned to documents with title blocks must be configured to exchange title block data, as described in Configure Standard Title Block Synchronization.

15. Click **Next**.

    The **Rendition file path field** page appears.

16. Select **Add the rendition file to the document** if the source database contains a field that contains the paths to separate rendition files that you want to import to the vault.

17. Select that field from the list.

    The rendition files will be imported to the vault and associated with the documents that are created.

18. Click **Next**.

    The **Exclusions** page appears.

19. Select options to exclude certain documents from being imported, as described in Exclude Documents From Import and click **Next**.

    The **Revisions** page appears.

20. Select options to import document revisions, as described in Import Revisions and click **Next**.

    The **Tree Structure** dialog box appears.

21. Select an option to specify whether or not the drive letter of the path of the source documents should be used to create the top-level folder of the documents' paths in the vault, and click **Next**.

    The **Final Settings** page appears.

22. Click options or type values using the descriptions in the following table.

Document import options

Option	Description
Create a log file during import	Creates a log file in the location specified in **Log file name**. Type a fully qualified file name of your choice. We recommend that you save the file in the vault folder. The log file will contain the information about the success or failure of the import of every document in the source database. You can use this log file to identify and troubleshoot documents that did not import correctly. The file is also useful as a record of the origin of documents in the vault for auditing purposes.
Add timestamp to the log records	Appends the time (accurate to 3-digit milliseconds) to the date of every record.
Save import configuration file as	Saves the **Database Import Wizard** options you have selected for this import. Type a fully qualified file name of your choice. We recommend that you save the file in the vault's `Backup` folder so that it can be backed up. This file can be loaded in step 4 to repeat or resume a previous import. Use a saved configuration file as a template for similar imports. After loading the file in step 4, you can modify previously selected options as necessary and save the results as a different configuration file.
Unattended operation	Imports documents without stopping for import errors. This option is useful if you want to import many files and will not monitor the import to respond to import errors. Any errors that are encountered will be noted in the log file specified above.

23. Click **Next**.

    The final page appears.

24. Click **Finish**.

    The import begins and a progress dialog box appears showing statistics, as described in Monitor the Import Progress.

    If you need to cancel the import for any reason, it can be completed later by loading the same configuration file in step 4 and resuming the import in step 5.

25. When the import is finished, use a Meridian client application to verify the results by checking the following for a representative sample of documents in the vault:

    - Name and location (Field-Path definition) in the vault
    - Document content is present and viewable
    - Correct property values, especially for the properties described in Create an Import Source Database.

- Document revisions
- Hybrid documents
- Meridian references were created during the import for external references, if applicable

26. If you chose to create a log file in step 22, review the log file for errors.

Assign Document Types To Imported Files

Assigning document types to imported files ensures that the documents are correctly classified in the vault. The **Document Types** page in the **Database Import Wizard** allows you to select specific conditions under which documents in the source database are assigned to different document types.

To assign document types to imported files:

1. On the **Document Types** page in the **Database Import Wizard**, select a document type from **Document type**.
2. Specify options that determine which files in the source database will be assigned the selected document type.

   Use the descriptions in the following table.
3. Repeat steps 1 and 2 for each document type that you want to import.

Document type options

Option	Description
File extension is one of	Select this option and type a file extension that matches the files to import.
Database field	Select a field from the field list, select an option from the criteria list, and type a value in the text box. The options that you specify will determine which files get assigned to the selected document type.
Expression is True	Select this option and type a VBScript expression to calculate the files to import. Type a VBScript expression or click the Meridian Enterprise Script Editor button to build a VBScript expression. For information on using VBScript for configuration expressions including their limitations, see the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference*.
Import hybrid components as parts of the hybrid document type	Select this option if the documents that match the criteria you have already selected are hybrid document parts. This option is only enabled if the selected document type is configured as a hybrid document type. **Note:** The document that will be the main part of a hybrid document must be in a released state so that other documents can be attached during the import as hybrid parts. The status of imported documents is determined by the **After importing documents** option described in Configure General Vault Settings unless the **Status** property is initialized, as described in Initialize Document Properties.

Option	Description
Database field that identifies parts of a hybrid document	Select a field from the list that has the same value for all parts of a hybrid document. For example, if all of the parts of a hybrid drawing have the same file name but different extensions, select the field that contains the file names.

Initialize Document Properties

When you initialize the properties of imported documents, this sets the property values using metadata in the source database. You can map the source database fields to document properties one at a time or, if the field names in the source database match the document properties, you can have the wizard map them for you automatically. The same is true if the source database (CSV file and INI mapping file) was originally created by the **Vault Archive Wizard** as described in the *Vault Archive Wizard Results* article in the *Meridian Enterprise Administrator's Guide*. When the properties are mapped automatically, you can also modify individual property mappings to meet specific requirements.

> **Note:**
> To map properties automatically to the output of the **Vault Archive Wizard**, the destination vault must be configured with the same property sets, property names, and data types as the source vault. This can easily be accomplished by also importing the source vault's configuration from a MET file as described in Importing configuration data.

Automatically Map Document Properties

To automatically map document properties:

1. On the **Initialize Properties** page in the **Database Import Wizard**, if you want to map properties automatically, in the **Map properties for initialization to** group:
   a. Choose between two options:
      - Select **Matching fields in the source database** if the database field and vault property names match.
      - Select **Fields specified in the property mapping file** if the source database (CSV file) was originally created by the Meridian Enterprise **Vault Archive Wizard**.

        The .INI file generated by the **Vault Archive Wizard** must exist in the same folder as the .CSV metadata file and have the same file name.

        > **Note:**
        > If the .INI file is not found, the wizard will attempt to map the source database field names to corresponding vault property names using the property internal names and display names.

   b. Click **Map**.

The document property names are mapped automatically to the corresponding source database field names. If the results are not what you expected, click **Clear** to remove the mappings and try a different method.

Map Individual Properties

To map individual properties:

1. Select a Meridian property in the **Name** column and click **Modify**.

   The **Initialize Property** dialog box appears.
2. Specify options that determine the value to be assigned to the selected property.

   Use the descriptions in the following table.
3. Click **OK**.

   The **Initialize** and **Value** columns of the property list display your selections.
4. Repeat steps 1 through 3 for each property that you want to initialize.

Property initialization options

Option	Description
Initialize during import	Select this option to initialize the property during import with the value specified by the option selected below. Clear this option to leave this property empty for the imported documents.
Use naming expression to calculate file name	Select this option to let the document type that is assigned to the imported file determine the document's name in the vault. The **Document naming** option of the document type described in Create And Edit Document Types will be used. This option is only visible for the **Name** property.
With fixed value	Select this option and type a single value to be applied to all imported documents. If the **Status** property is selected, a list of workflow states is shown for selection. If you set the **Status** property to **Under Change** or **Quick Change**, set the **To-Do Person** property to the names of the persons to whom the documents should be assigned.
From database field	Select this option and select a field from the list to apply the field's value to the imported documents. Select **Combine with** and select a different field from the list to combine the values of both fields into the properties of the imported documents.
From path	Select this option to use a folder name in the source document's path as the value of the selected property. Type a number in **Directory level** to specify the folder to use. Select **First (chars)** and type a number to use only a portion of the folder name as the property value.
With result of expression	Select this option and type a VBScript expression to calculate values to be applied to the imported documents. Type a VBScript expression or click the Meridian Enterprise Script Editor button to build a VBScript expression. For information on using VBScript for configuration expressions including their limitations, see the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference*.

Note:

By default, the **AMFSObjectPropertySet._IMPORTEDFROM** property is set when documents are imported into a vault by using drag-and-drop, the **Document Import Wizard**, the **Document Import Tool**, or from another vault during vault creation. The value is the full path of the source file but can be controlled by registry values named **UseImportedFrom** on the server and on the client computer where the import is executed.

The possible settings of the registry values are described in the *Meridian Enterprise Administrator's Guide*.

- The server setting is described in *HKEY_LOCAL_MACHINE\Software\Cyco\AutoManager Meridian\CurrentVersion\Server.*
- The client computer setting is described in *HKEY_CURRENT_USER\Software\Cyco\AutoManager Meridian\CurrentVersion\Client\Settings*.

The value can also be configured during vault import with the **ImportFilterFile.ini** file as described in the *Exclude Existing Property Values When Importing a Vault* article in the *Meridian Enterprise Administrator's Guide*.

Exclude Documents From Import

The source database that you import might contain data about documents that you do not want to import. The options on the **Exclusions** page allow you to specify that data.

To exclude documents from import:

- On the **Exclusions** page of the **Database Import Wizard**, click options or type values using the descriptions in the following table.

Import exclusion options

Option	Description
Do not import documents that are frozen	This option is only enabled when importing an AM-WorkFlow environment. Documents that are frozen will not be imported.
Do not import documents that are not frozen	This option is only enabled when importing an AM-WorkFlow environment. Documents that are not frozen will not be imported.
Do not import documents that are archived	This option is only enabled when importing an AM-WorkFlow environment. Documents that are archived will not be imported.
Do not import documents that have no file attached	If a file specified in the field selected for the **Path field** option cannot be found, the document metadata will not be imported.
Do not import documents that are locked	This option is only enabled when importing an AM-WorkFlow environment. Documents that are locked are not imported.

Option	Description
Do not import documents for which this field is False	Select this option and select a Boolean field from the list to specify documents that will not be imported.
Do not import documents for which this expression is False	Select this option and type a VBScript expression to specify documents that will not be imported. Type a VBScript expression or click the Meridian Enterprise Script Editor button to build a VBScript expression. For information on using VBScript for configuration expressions including their limitations, see the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference*.

Import Revisions

Separate documents that represent prior revisions of the same document can be imported into a vault in several ways.

The options of the **Database Import Wizard** determine:

- Whether or not revisions are created from imported documents
- Whether revisions are imported as new documents or imported to the history of the same document
- Whether imported revisions should be created as derivatives or replacements of existing documents
- How imported revisions and existing documents are matched based on the source database

To import document revisions:

- On the **Revisions** page in the **Database Import Wizard**, click options or type values using the descriptions in the following table.

Revision import options

Option	Description
Import revisions as separate documents	Does not import revisions into the history of other documents. This option is most useful if the vault was configured to not retain history when it was created as described in *Create a New Vault* in the *Meridian Enterprise Administrator's Guide*.
Import only the latest revision	Only the revision with the highest revision number will be imported and become the current revision.
Import revisions into the history of the same document	The revision with the highest revision number will be imported as the current revision. All other revisions will be imported into the history of this document. This option is only enabled if the vault was configured to retain history when it was created as described in *Create a New Vault* in the *Meridian Enterprise Administrator's Guide*.
Import revisions as derivatives of the same document	Imports revisions as derivatives of the document with the highest revision number. For information on derived documents, see the *Derived Documents* section of the *Meridian Enterprise User's Guide*. This option is most useful if the vault was configured to not retain history when it was created as described in *Create a New Vault* in the *Meridian Enterprise Administrator's Guide*.

Option	Description
Import revisions as replacements of the same document	Imports revisions as replacements of the document with the highest revision number. For information on replaced documents, see *Replace a Document* in the *Meridian Enterprise User's Guide*. This option is most useful if the vault was configured to not retain history when it was created as described in *Create a New Vault* in the *Meridian Enterprise Administrator's Guide*.
Database field that identifies individual documents	The field in the source database that contains the same value for all revisions of the same document, such as the document name or number. If the database contains identical values in variations of upper case and lower case characters, the option **Case-sensitive** is shown. Select this option if you want all case variations of the same value to be imported as separate documents. Clear this option if you only want one document (the first occurrence) imported. The limitation against duplicate file names (case-insensitive) in the same folder will still apply and could result in numbered file name suffixes (for example, `MyDocument (1).doc`). This field must be a **String** data type. Selecting a **Memo** type field will produce unpredictable results.
Database field containing the number of each revision number	The field in the source database that identifies the individual revisions of the same document. This field must be a **String** data type. Selecting a **Memo** type field will produce unpredictable results.
Order revisions by	Select this option and select a field from the list to determine the sort order of revisions in history. Typically, this is the same field as selected for the **Database field containing the number of each revision number** option. This field must be a **String** data type. Selecting a **Date** or **Memo** type field will produce unpredictable results.

Monitor the Import Progress

Small imports (less than 10,000 documents) should not take a long time to complete, and you might want to monitor the entire process. Large imports can require many hours to complete, and you might want to monitor the process only periodically.

During import, the **Database Import Wizard** progress dialog displays the statistics described in the following table.

Import statistics

Statistic	Description
Total records	The number of records found in the source database.
Deleted records	The number of records flagged as deleted if the source database is an AM-Workflow database.
New documents	The number of new documents created in the vault.
Skipped records	Import Revisions
Imported as revisions	The number of revisions imported into the history of another document, as described in Import Revisions.
Files attached as hybrid parts	The number of files attached to hybrid documents, as described in Assign Document Types To Imported Files.
Elapsed time	The time elapsed since the import started.

The approximate completion time of the import can be calculated by noting the number in **Total records** at periodic intervals, for example, at 10 minutes or 1 hour. For example, if **Total records** equals 2,000 at 00:10:00 and the source database contains 100,000 records, the estimated completion time is:

100,000 documents ÷ 2,000 documents/10 min. interval = 50 intervals
50 intervals x 10 minutes = 500 minutes
500 minutes ÷ 60 minutes/hour = approximately 8.33 hours

Configure the Scope Of Global Searches

By default, when Meridian users perform a global search (a search across multiple vaults), the default scope of the search is all of the vaults on the same server as the user's current vault. This may not be desirable in some cases, such as:

- The user does not have access to all of the vaults.
- The user does not want to search all of the vaults.
- The user wants to also search vaults on different servers.

To save users the time required to specify the vaults that they want to search, the default list of vaults that are shown in the **Find** dialog when the **All vaults** option is selected is configurable. This list is configured by way of a .ini file located on a shared network location.

The default vault list file is named `AMDefaultVaultList.ini` (the file must have this name). This file can be read automatically by the Meridian client applications. The file stores the following information:

- **Contexts**: The number of context description sections in the file
- For each context:
  - The name of the server hosting a vault to be searched.
  - The name of the vault to search.
  - An operator to apply to the wildcard pattern. Valid operator names are similar to those that can be found in the **Condition** list of the **Find** dialog in the Meridian client applications (OP_CONTAINS, OP_STARTSWITH, and so on).

Following is an example `AMDefaultVaultList.ini` file:

```
[Global Search]
Contexts=2

[Context1]
'In MyVault on MyServer
Server = MyServer
VaultName = MyVault 'Matches the name shown in Meridian Administrator

[Context2]'All vaults on OtherServer
Server = OtherServer
VaultName = *
```

The shared network location of the file is set on each 32-bit client computer in the following Windows registry value:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Cyco\AutoManager
Meridian\CurrentVersion\Client\DefaultVaultListLocation
```

And on each 64-bit client computer in the following Windows registry value:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Cyco\AutoManager
Meridian\CurrentVersion\Client\DefaultVaultListLocation
```

The (string) value of the key should be the path to the folder that contains `AMDefaultVaultList.ini` including a trailing backslash (\), for example:

```
E:\Test\
```

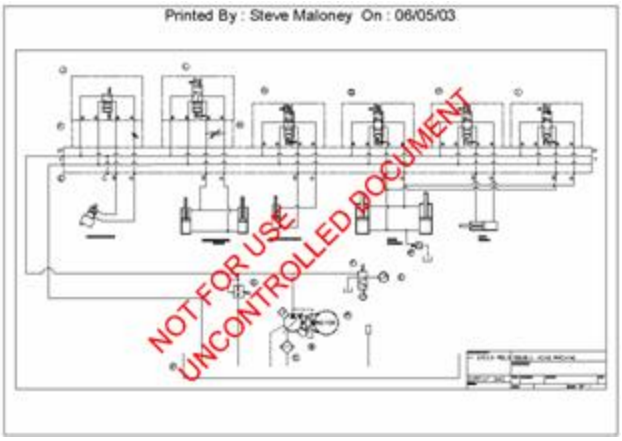
or

```
\\<Server>\AMConfig\
```

Configure Watermark Printing

You can configure watermark text to appear on hard copies made with the Meridian viewer, similar to the following figure. These watermarks are typically used to describe the circumstances of a document, such as who has printed the document or when it was printed. For this reason, they may be described as dynamic watermarks.

To configure static watermarks related to the content of a document, see Configure Rendition Watermarks.



This can be useful to indicate unapproved drawings, expiration dates, time stamps, and so on. You can configure the following characteristics of watermarks:

- Text, which can include property values
- Font, size, color, and transparency of the text
- Position on the printed page and angle of the text
- Title text to appear as the header or footer of the printed page

The watermark options are set with VBScript in the **DraftPrint_SetWaterMark** event procedure because it is invoked immediately before printing occurs. For more information on customizing event procedures, see the *Document Generic Events* article in the *Meridian Enterprise VBScript API Reference Guide*.

- These watermarks appear on hard copy output from the viewer and are independent of watermarks that can be added to renditions by Publisher as described in *Configure Rendition Watermarks* in the *Meridian Enterprise Server Administrator's Guide*.
- The settings **Enable draft print** and **Enable watermarks on draft print hardcopies** must be set to **True**.
- These watermarks can be rotated to match the page rotation of specific printers using these registry values described in the *Meridian Enterprise Administrator's Guide*.

```
HKEY_CURRENT_USER\Software\Cyco\AutoManager View
Control2\Settings\AVLandscape
HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Cyco\AutoManager View
Control2\Settings\AVLandscape
```

Watermarks use the **Client.Viewer.Watermark** properties described in the following table. You do not have to use all of the properties, only the ones necessary to produce the results you want.

Watermark options

Property	Type	Description
Angle	Long	The angle of the watermark text in degrees.
Color	String	The color of the watermark text, specified as an **AS_WATERMARK_COLORS** constant.
Font	String	The font of the watermark text. Can be any installed Windows font.
FrameWidth	Long	The width of a line framing the printed page.
Size	Long	The font size of the watermark text in points.
Style	Long	The position of the watermark text on the printed page using one or more **AS_WATERMARK_STYLES** constants. To combine style options, use the **Or** operator.
Text	String	The watermark text to print.
TitleFont	String	The font of the title text. Can be any installed Windows font.
TitleFontSize	Long	The font size of the title text in points.
TitleStyle	Long	The position of the title text on the printed page using one or more **AS_WATERMARK_TITLESTYLES** constants. To combine style options, use the **Or** operator. You can specify only one title. You cannot print one title in the header and another title in the footer.
TitleText	String	The title text to print. Title text is always printed in black.
Transparency	Long	The transparency of the watermark text in percent.

Following is an example event procedure that incorporates all of the watermark properties and produces a watermark, frame, and title similar to those in the preceding figure.

vbCrLf can only be used with TitleText, not with Text.

```
Sub DraftPrint_SetWaterMark()
    Client.Viewer.WaterMark.Angle = 45
    Client.Viewer.WaterMark.Font = "Arial"
    Client.Viewer.WaterMark.Size = 36
    Client.Viewer.WaterMark.Text = "NOT FOR USE"
    Client.Viewer.WaterMark.TitleFont = "Arial"
```

```
    Client.Viewer.WaterMark.TitleFontSize = 10
    Client.Viewer.WaterMark.TitleStyle = AS_WMTS_CENTRED Or AS_WMTS_
HEADER
    Client.Viewer.WaterMark.TitleText = "Printed by: " &
User.FullName & " on: " & DateValue(Today)
End Sub
```

Register Custom Interface Extensions

Meridian can be customized with ActiveX DLLs created by Accruent or a Solution Partner. These extensions can extend the user interface and functionality of Meridian to meet requirements that cannot be implemented using VBScript.

Custom extensions can be added to a vault's configuration with a two-step process:

1. Register extensions to make them available in the vault as described below.
2. Apply registered extensions to the objects in the vault that the extensions were meant to customize.

To register extensions in a vault:

1. In Configurator, expand **Environment** in the configuration tree to show the vault's currently registered extensions.
2. On the **Edit** menu, click **Register Extension**.

   The **Register Extension** dialog box appears.
3. Select the DLL or CAB file that contains the extensions that you want to register.
4. Click **Open**.

   The **Register Extensions** dialog box appears.
5. Select the extensions that you want to register and click **Register**.

   The letter **R** appears in the check box of the extensions that are registered successfully.
6. Click **Close**.

   The first newly registered extension is automatically selected and opened for editing.
7. Click the **Applies to** tab.

   The objects that the extension has automatically applied itself to are shown.
8. To apply the extension to additional objects, click **Add**.

   The **Select Class** dialog box appears, listing the existing classes in the vault that are valid for the selected extension.
9. Select the classes to which you want to apply the selected extension and click **OK**.

   The selected classes appear in the **Applied to** list.
10. Click **OK**.

Custom user interface extensions based on .NET (Meridian Asset Management Module 2010 or higher extensions, for example) may need to be registered manually using the preceding procedure after importing a vault's configuration. In such a case, the error **No binary file is available to install extension** will appear.

Unregister Custom Interface Extensions

Unregistering a custom interface extension is more complicated than it first seems. To understand the implications for unregistering an interface extension, it may help to remember what the effects of registering an interface extension are:

- The extension is associated with certain vault objects
- The extended vault objects become dependent on the interface extension, even in the vault's history.

Therefore, if you unregister a custom extension, the extension will no longer be accessible by the objects in the vault's history to which the extension was applied. For example, if you register an interface extension for a document type that implements some custom properties, create some documents with that extension, and then later unregister the extension, the documents that you created will no longer be able to present the custom property data. If the vault is configured so that it doesn't retain revision history, this may not be a problem for you, but if the vault is configured to retain history, the custom data will not be accessible. As well, error messages will be shown to users when they access the documents in the vault's history because the extension cannot be found (if it was also removed from the client computers). The messages can be safely ignored, but they are unwanted.

If you decide to proceed with unregistering an interface extension, you might encounter an unexpected error message that reads **Removing this item is not allowed**.

To unregister an interface extension:

1. In Configurator, expand **Extensions** in the left pane.

   The list of currently registered extensions appears.
2. Select the extension that you want to unregister.

   The extension's property pages appear in the right pane.
3. Click the **Applies to** tab.

   The **Applies to** page appears, listing the objects to which the extension has been applied.
4. Click **Edit**.
5. Select each object in the **Applied to** list and click the **Remove** button.
6. When the **Applied to** list is empty, click the **OK** button to save your changes.
7. On the **Edit** menu, select **Delete**.

   A dialog box opens, asking you to confirm your choice.
8. Click **Yes**.

   The extension is unregistered from the vault.

Although the extension is now unregistered from the vault, the extension files remain installed on the Meridian server and on the client computers that have downloaded the extension.

> **Note:**
> So that the extension will be available in history mode as described above, you may not want to uninstall extensions that you no longer want to use. Because the extension is no longer applied to the vault objects, it will not be associated with any new objects, but it will be available for the existing objects to which it was applied.

If the extension does not implement custom properties, the vault is not configured to retain history, or you simply want to uninstall the extension from the server completely, after unregistering the extension in the Meridian Enterprise Configurator, you can delete the extension packages that reside in the `BC-Meridian Extensions\Packages` folder and its subfolders. Do this if the extension was packaged by the Visual Basic Package and Deployment Wizard and the .CAB file was manually copied to the `BC-Meridian Extensions\Packages` folder. If the package was created by the PackageBuilder tool (for use with Visual Basic .NET) then uninstall it from Windows Vista (or higher) from the **Programs and Features** list or the **Add or Remove Programs** list in earlier versions of Windows.

Secure Parts Of the Vault Configuration

By default, the configuration of a vault is secured two ways:

- General access to the Configurator program. Without this program installed on their PC or access to a different PC where it installed, no users can change any part of the configuration.
- The **Change Configuration** privilege described in Vault privileges. Within the Configurator program, this privilege grants the user access to change any part of the configuration.

You can also apply a third level of security only to parts of the vault configuration. You might want to do this if you want to delegate some vault configuration to others (for example, application link settings) without giving them access to all of the configuration settings.

You can apply this security to the branches (root level only) of the configuration tree in the Configurator and to other important features:

- Document types
- Views
- Workflow definitions
- Folder types
- Project definitions
- Global search queries
- Reports
- Extensions
- Reference types
- Property sets
- Pages
- Commands
- Tables and queries
- Lookup lists
- Scopes
- Environment
- Field-Path definition
- Script

By default, configuration branch security is disabled.

Configuration security provides the following levels of access:

- Read-write (RW): View and change settings
- Read-only (RO): View but not change settings
- No access (NA): Settings are hidden

You grant these levels of access to Meridian roles for specific features of the configuration.

To secure parts of the vault configuration:

1. In Configurator, expand **Environment** in the configuration tree and select **Application Link Settings**.

   The settings for each application link appear in property pages in the right pane.

2. Click **Application Integration**.

   The **Application Integration** settings page appears in the right pane.

3. Click **Edit**.

   To export the settings file to your computer, click the **Export** button. This can be useful if you want to edit the file in another text editor. You can then copy your changes to the Clipboard and paste them into Configurator.

4. Locate the section of the file titled **[Configuration Branch Security]**.

   Each line in this section corresponds to a branch in the configuration tree or a feature set in Configurator.

5. Remove the colon character at the beginning of the line that corresponds to the branch or feature that you want to secure.

6. At the end of the line, type the name of the Meridian role to which you want to grant access to that feature followed by the abbreviation (see the preceding list) for the access level that you want to grant to the role.

   Separate the role name from the access level abbreviation with a vertical bar character (|). To grant access to multiple roles, type additional role and access level pairs separated by commas as in the following example.

   ```
   Document Types=Admins|RW,Editors|RO,Viewers|NA
   ```

   In the this example for the **Document Types** branch, the role Admins is granted read-write access, the role Editors is granted read-only access, and the role Viewers is granted no access.

7. Click **OK**.

Property Sets And Properties

Properties are the basic building blocks that make up much of a vault's configuration. Properties are created within property sets. A *property set* contains properties that are used by the same parent object or custom extension, or for the same purpose. Some properties are built into the system. Custom properties can be added to a vault's configuration for your own purposes. Custom properties can be used for document types, folder types, and many other objects. Custom properties assigned to a folder type can be inherited by the documents that the folder contains. Custom property pages are also built upon custom properties. Before you can configure property pages, document types, folder types, external data links, the Field-Path definition, navigation views, reports, or application links, you must first create the custom properties that they use.

Internal Property Sets

Every Meridian vault contains numerous properties that the system uses. Most of these properties are read-only, but you can set the values of some properties through configuration or VBScript. The internal properties are grouped into the property sets in the following table.

Internal property sets

Name	Display Name	Description
CommonPropertySet	Common	Properties that are common to all vault objects, such as names
AMFSObjectPropertySet	File/Folder	Properties for files and folders
AMVersionablePropertySet	Versioning	Properties for revision control and management
AMDocumentWorkflowPropertySet	Document Workflow	Properties for document workflow management
AMRetentionControlPropertySet	Retention Control	Properties for document retention control and auditing
AMViewerPropertySet	Viewer	Properties used by the Meridian viewer
AMDocumentPropertySet	Document	Properties for managing documents
BCRenditionPropertySet	Rendition Properties	Properties for managing the renditions of documents

For the names of the individual properties in these property sets, either view the list of properties of a document type in Configurator or on the **Stored Properties** page of the **Advanced Document Information** dialog in PowerUser. You should avoid using the names of properties in these property sets when you create custom properties. Additional property sets are added to vaults by some of the optional Meridian modules.

Create And Edit Custom Property Sets

Creating a custom property set adds a property group to a vault's configuration to which you can add individual custom properties. Every Meridian vault includes a property set named **Custom** that you can use to contain your custom properties. This property set meets the configuration needs of most organizations. For more advanced configuration requirements, such as to group many custom properties into logical sets, you may want to create one or more custom property sets.

Create a distinct property set for each object type for which you will create custom properties. For example, create a folder type property set for your custom properties that pertain only to folders. This makes it easier to distinguish them from properties used for document types or other objects.

Important!
Deleting a property set makes the property set and all of its existing data unavailable in the vault's history. Only delete a property set that you know will never be needed again. To retain a property set for vault history but make it unavailable for future documents, clear the property set for all objects on the **Applies to** page, but do not delete the property set.

Create New Property Set

To create a new property set:

1. On the **Edit** menu, click **New Property Set**.

   A new property set appears in the configuration tree and empty property pages appear in the right pane.

2. Enter a **Display Name** on the **General** tab.

   A default internal name is calculated in **Name**.

3. Accept the default value of **Name**.

4. Click the **Applies To** tab.

   A list of the existing document and folder types appears in the right pane.

5. Select the check box next to each document type or folder type to which the property set will be applied.

   Assigning a property set to a folder type does not make the properties available immediately for searches like assigning a property set to a document type does. You must also assign the property set elsewhere in the configuration, for example, by adding one of

the properties to a column layout as described in Configure Column Layouts or to a property page as described in Configure the Property Type Of a Panel Element.

6. Select the **Can be used in Field-Path definition** option if you intend to use properties in this property set in levels of the Field-Path definition.

   You can use custom properties in the Field-Path definition only if the **Can be used in Field-Path definition** option is enabled and the properties used meet the following requirements:

   - String data type
   - **Asyncversioned** effectivity

   Custom properties used in the Field-Path definition should not be applied to folder types. Otherwise, the property is read-only when the Field-Path definition is calculated during the creation of folders.

7. Click **OK**.
8. Add properties to the new property set, as described in Create And Edit Custom Properties.

Edit a Property Set

To edit a property set:

1. Expand **Property Sets** in the configuration tree to display the existing property sets.
2. Select the property set in the configuration tree.
3. Click **Edit**.
4. Click **OK**.
5. Add properties to the new property set, as described in Create And Edit Custom Properties.

Delete a Property Set

To delete a property set:

1. Select the property set in the configuration tree and click the **Applies to** tab.

   The document types and folder types to which the property set are applied appear.

2. Click **Edit**.
3. Clear the check box for each object type.
4. Click **OK**.
5. On the **Edit** menu, select **Delete**.

Create And Edit Custom Properties

Custom properties can be arranged on custom property pages and the pages applied to document types and folder types. Users can then type property values on the property pages for documents and folders created from those types.

Depending on your overall computing environment, using many custom properties can cause poor system performance, particularly when application links are enabled. For information about optimizing performance of application links with empty properties, see Configure Empty Property Synchronization.

Important!
Deleting a property makes the property and all of its existing data unavailable in the vault's history. Only delete a property that you know will never be needed again. To retain a property for vault history but make it unavailable for future documents, clear the property for all objects on the **Applies to** page, but do not delete the property.

Create a Custom Property

To create a custom property:

1. In Configurator, expand **Property Sets** in the configuration tree to list the existing property sets.
2. Expand the property set to which you want to add a new property.

   The names of the properties currently in the selected property set appear.
3. On the **Edit** menu, click **New Property Definition**.

   The **New Property Definition** dialog box appears.
4. Click options or type values using the descriptions in the following table.

New property options

Option	Description
Name	Type a name that you want to appear in the Meridian client applications. You cannot assign a name that is the same as a system property. The dialog box does not allow typing spaces in the property name. This is to prevent spaces in the optional corresponding VBScript property name that is set to the same name. If you want the name to contain spaces, finish creating the property and then edit the **Display Name** property described in the following table.
Type	Select the data type for the new property. For more information about the available data types, see Configure Property Data Types.

5. Click **OK**.

   The new property appears in the configuration tree and its property pages appear in the right pane.

6. Click options or type values using the descriptions in the following table.

Custom property options

Option	Description
Display Name	The default is the name that was typed when the property was created. This name will appear in the Meridian client applications and can be changed, if necessary.
Name	This name is used internally by Meridian Enterprise and cannot be changed once set. The default is the same as **Display Name**.
Type	The data type of the property. For more information about the available data types, see Configure Property Data Types.
Effectivity	Select an option to control the effectivity of changes to the property's value. For more information about the available options, see Configure Property Effectivity.
Enable for scripting	Select this option to make this property available to VBScript expressions and Visual Basic extensions. For more information, see Configure Properties For Use With Visual Basic And VBScript.
VBScript name	A default name is calculated for the property to be used in VBScript expressions. Accept the default in most cases. Available only if **Enable for scripting** is selected. For more information, see Configure Properties For Use With Visual Basic And VBScript.

Option	Description
VB Designer name	A default name is calculated for the property to be used by custom client extensions created with the Meridian Visual Basic designer. Accept the default in most cases. Available only if **Enable for scripting** is selected. For more information, see Configure Properties For Use With Visual Basic And VBScript.
Include in Key Find	Key Find is a fast, sorted search for values of one property only. It is described in detail in the *Key Find* article in the *Meridian Enterprise User's Guide*. You can configure any string type property to be indexed for Key Find. Select this option to make this property selectable in Key Find searches. **Note:** The **Enable for scripting** option must be selected and **Name for scripting** must be complete for the **Include in Key-Find** option to be active.
Value separator	Type a separator character to delimit multiple values selected from a lookup list or table. We recommend the semicolon (**;**) character. The default value of this field is an asterisk (*****). If any value is typed for this option, it causes the property to appear as a drop-down combobox control on property pages from which users may select multiple values. The selected values will then appear as a single string delimited by this character. Available only if **Enable for scripting** is selected. For this option to work correctly, the following restrictions apply: • The property's **Type** option must be set to **String**. • The property's **Select a value from** option the on its **Validation** page must specify the values to show in the combobox control. • Users must have the **Get values** privilege to any tables specified for the **Select a value from** option. The combined length of selected values and separator characters are limited to the String data type maximum of 255 characters. **Note:** To create multi-value data without the Meridian combobox control (for example, in a database for import into a vault or with the **Set Property Value** command), you must use the same separator character as specified here regardless of the locale setting of the computer. This is true for all properties, not just multi-value properties. Do not change the separator character after it has already been used by some documents. Doing so will cause incorrect values the next time that the document's properties are edited.

7. Click **OK**.

   You may now add the property to a custom property page, as described in Create And Edit Panel Elements.

Edit a Custom Property

To edit a custom property:

1. In Configurator, expand **Property Sets** in the configuration tree to list the existing property sets.
2. Expand the property set that contains the property that you want to edit.

   The names of the properties currently in the selected property set appear.
3. Click the name of the property that you want to edit in the configuration tree.
4. Click **Edit**.
5. Select or type options for the new property using the descriptions in the preceding table.
6. Click **OK**.

Delete a Custom Property

> **Note:**
> You cannot delete a property definition that is used as a condition in a workflow definition or as a level in a navigation view.

To delete a custom property:

1. In Configurator, expand **Property Sets** in the configuration tree to list the existing property sets.
2. Expand the property set that contains the property that you want to delete.

   The names of the properties currently in the selected property set appear.
3. Click the name of the property that you want to delete in the configuration tree.
4. On the **Edit** menu, click **Delete**.

   A dialog box opens, asking you to confirm your choice.
5. Click **Yes**.

   The property is deleted.

Configure Property Data Types

The data type of a property determines the type of data that the property can contain. This makes storage of the data most efficient, but it prevents other data types from being saved in the property. Meridian supports the major data types used by most modern database management systems. The string, integer, date/time, and memo data types will serve most purposes.

Important!

You can configure the data type of a property only when creating the property. It is important that you choose the correct data type carefully.

If you create a property with the wrong data type and it already contains data for many objects, you can try this workaround:

1. Create a new property with the correct data type.
2. Migrate the data from the original property to the new property.
   The **Set Property Value** command in PowerUser is useful for this.
3. Delete the original property definition.

This requires that you match the property validation and value assignments, update property pages and reports manually, and update all references to the original property name in VBScript.

To configure a property's data type, select a data type from the **Type** list at the time of property creation. The different types are described in the following table.

Property data types

Name	Description
String	Text up to 255 characters Unless you need to perform mathematical calculations on a number, use the string data type for numbers even if the value in a property will be concatenated with string values from other properties in VBScript. This prevents the need to convert the numeric data into an equivalent string. The string data type is also the most flexible and can serve the most purposes, whereas other data types are less flexible. If you use a different data type, you may discover later that it is too limiting. You can often achieve the same data validation that a more restrictive data type offers by configuring the **Validation** options for a string value.
Byte	Integer in the range 0 to 255
Integer	Integer in the range –32,768 to 32,767

Name	Description
Long Integer	Integer in the range 2,147,483,648 to 2,147,483,647
Single Float	Single-precision floating-point number
Double Float	Double-precision floating-point number
Boolean	True or False
Date/Time	Date between January 1, 100 to December 31, 9999
Currency	Between -92,337,203,685,477.5808 and 92,337,203,685,477.5807
Memo	Up to 32 KB of plain text. **Important!** PowerWeb is limited to sending a total of 24 KB of data when properties are edited. This limit can be exceeded if the document type includes a large number of text properties or one or more memo properties that contain a lot of data. When this occurs, users will be shown an **Invalid arguments** error and their changes in some properties may not be saved correctly. Therefore, the practical limit of memo properties is 24 KB of data or less if the PowerWeb client will be deployed to users and these properties should be used with caution.

Configure Property Effectivity

The effectivity of a property determines when the property can be changed and which revisions of the parent object the change affects.

Important!

You can change the effectivity of a property after it has been created, it will not affect existing property values. Therefore, it is important that you choose the correct original effectivity carefully.

If you create a property with the wrong effectivity and it already contains data for many objects, you can try this workaround:

1. Create a new property with the correct effectivity.
2. Migrate the data from the original property to the new property.
   The **Set Property Value** command in PowerUser is useful for this.
3. Delete the original property definition.

This requires that you match the property validation and value assignments, update property pages and reports manually, and update all references to the original property name in VBScript.

To configure a property's effectivity, select it from the **Effectivity** list. In most cases, you should select either the **Versioned** or **Normal** effectivity types:

The available **Effectivity** options are described in the following table.

Property effectivity options

Option	Description
Global	The property's value is the same for all revisions of the object.
Normal	The property's value can only be changed when the object is in a workflow. The value only affects the current revision of the object.
Time Global	The property's value affects all revisions of the object.

Option	Description
Versioned	The property's value can be changed at any time. The value only affects the current released revision of the object. Properties that will be used in the Field-Path definition must have an effectivity type set to **Versioned**. **Note:** If a property with this effectivity is placed on a wizard page that is assigned to a workflow transition, its value will be applied to the latest released revision of the document, not to the unreleased revision in the workflow. This can seem counter intuitive. The value is assigned before the transition executes that creates the new revision.
Work Global	The property's value can be changed at any time. The property's value only affects the current revision of the object.

Configure Properties For Use With Visual Basic And VBScript

The custom properties that you create in Meridian can be used in VBScript expressions and custom client extensions. However, because of a limitation of VBScript, the naming of custom properties is very important. VBScript does not support the concept of property sets, which are a part of a property's definition. The property set name is also required to fully specify a particular property in custom extensions in the Meridian Developer Edition, which is used to create extensions. So, a workaround is necessary for compatibility with VBScript. This is provided by the **VBScript name** option of a property.

When you create a new property in Meridian Enterprise Configurator, and assign it a name in **Display Name**, Meridian Enterprise Configurator calculates a default name (without spaces) for use in VBScript and displays it in **VBScript name**. It calculates the name according to the following pattern:

<PropertySetName>_<PropertyName>

You can change the name or accept the default name.

The **VB Designer name** option contains the default name, which is the same as the **Display Name** in a Visual Basic designer. You can change this name or accept the default name.

Restrict User Input

Property validation allows you to control the values that can be saved for a property. Property validation cannot prevent users from entering incorrect values in all cases, but it can apply rules to what the user enters and inform the user of incorrect input. You can apply several types of validation to a property, either individually or in combination:

- Required input
- Selection from a list of approved values
- Input evaluation

Each of the validation options is described in the following procedure.

1. In Configurator, expand **Property Sets** in the configuration tree to display the property sets.
2. Expand the property set that contains the property for which you want to configure validation.

   The names of the properties currently in the selected property set appear.
3. Select the desired property in the configuration tree.

   The property's property pages appear in the right pane.

   The **Enable for scripting** option must be selected and **VBScript name** must be complete for the **Validation** and **Assignment** pages to be active.
4. Click the **Validation** tab.

   The property's validation options appear.
5. Click **Edit**.
6. Click options or type values using the descriptions in the following table.
7. Click **OK**.

Property validation options

Option	Description
Input Required	Select this option to require user input before changes to the property page can be saved. Select either **Always** or **This expression must be True** and click the Meridian Enterprise Script Editor button to build a VBScript expression that will be evaluated to determine when the element is visible. For information on using VBScript for configuration expressions including their limitations, see the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference*. Do not use this option on a property that may be on a hidden page.

Option	Description
Select a value from	Select this option to require the user to select from a list of approved values: • **List of existing values for this property**: Displays a list on the property page of the values that have already been typed for this property. When a new value is typed for this property, it is added to the list. • **List of user names**: Displays a list on the property page of the full names of Meridian users who have used the vault. Meridian user names can be shown in different formats as specified by the server registry setting **UserNameFormat** described in the HKEY_LOCAL_MACHINE\Software\Cyco\AutoManager Meridian\CurrentVersion\Server\UserDatabase article in the *Meridian Enterprise Administrator's Guide*. If your environment comprises hundreds of users and a group exists that contains all the users, the performance for users when they need to select all user names can sometimes be improved by restricting property validation to the results of a query of the Meridian user database instead. This would eliminate the queries for unnecessary user data that are otherwise performed when a group is selected. For more information on creating a query, see Create And Edit External Data Queries. Alternatively, instruct the users to select the **All users** item in the list of user names instead of the group name. That item does not query for additional data. • **This lookup list**: Displays a list on the property page containing entries from the selected lookup list. Click the button to display the selected lookup list or to add new entries. If the lookup list does not yet exist, click **New** to create a new lookup list, as described in Create And Edit Lookup Lists. • **This expression**: Click the Meridian Enterprise Script Editor button to build a VBScript expression that will be evaluated to determine the list of approved values. For information on using VBScript for configuration expressions including their limitations, see the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference*. Do not use this option on a property that may be on a hidden page. • **Allow a user to type values manually**: Enable this option if you want users to be able to type other values than those provided by the VBScript expression above. Select either **Always** or **This expression must be True** and click the Meridian Enterprise Script Editor button to build a VBScript expression that will be evaluated to determine when the users may type other values.

Option	Description
Apply Input Restrictions	Select this option to limit the range of values a user may input: • **Value must be between**: Restricts property values to the lower and upper limits specified. This option is available only for numeric and date data type properties. • **Value must conform to the regular expression**: Type a regular expression that will be used to validate the user's input. Click the **Test** button to test your expression with sample input that you type. Type a message to show users when validation fails in **If the validation fails, this message will be shown**. • **This expression must be True**: Click the Meridian Enterprise Script Editor button to build a VBScript expression that will be evaluated to validate the user's input. For information on using VBScript for configuration expressions including their limitations, see the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference*. Type a message to show users when validation fails in **If the validation fails, this message will be shown**. • **This expression must return an empty string**: Click the Meridian Enterprise Script Editor button to build a VBScript expression that will be evaluated when the property is saved. If the result of the expression is not empty, it is considered as an error and becomes the text of the error message. The result can consist of multiple lines of text. However, only the first line will be shown in error messages caused by the **Set Property Value** command. For information on using VBScript for configuration expressions including their limitations, see the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference*.

Assign Property Values

Property assignments assign specific values to properties under certain events and conditions. Property assignments are useful in numerous situations including:

- Setting default values for new documents
- Calculating a property value based upon the values of other properties
- Recalculating one value when the value of another property changes

To assign property values:

1. In Configurator, expand **Property Sets** in the configuration tree to display the existing property sets.
2. Expand the property set that contains the property for which you want to configure assignments.

   The names of the properties currently in the selected property set appear.
3. Select the desired property in the configuration tree.

   The property's property pages appear in the right pane.

   > **Note:**
   > The **Enable for scripting** option must be selected and **VBScript name** must be complete for the **Validation** and **Assignment** pages to be active.
4. Click the **Assignment** tab.

   The property's existing assignments appear.
5. Click **Edit**.
6. If you want to modify an existing assignment, select it in the list of assignments.

   The assignment's settings appear at the bottom of the page.
7. If you want to create a new assignment, click the **Add** button to add a new assignment to the list of property assignments.
8. Select an event from the **When** column using the descriptions in the following table.

   > **Note:**
   > Property change events occur in the order listed in the previous table. If multiple assignments are configured for a property, depending on the options selected for **Condition** and **Assignment**, you may want to arrange them in step 12 to be applied in the same order.

Property assignment events

When	Description
Page enters edit mode	When a user clicks the **Edit** button to edit the page.
Property is changed	When a user manually changes the value of the property selected from **Field**. When this option is selected, a **Field** list is visible for property selection. The property that is changed must be on the same page as this property. If you want to change this property based upon changes to a property on a different page, use **Page is applied** or **Page is refreshed**.
Page is applied	When a users clicks the **Apply** or **OK** button after editing a page.
Page is refreshed	When a user selects **Refresh** on the **View** menu or presses F5.

9. Select a criterion from **Condition** using the descriptions in the following table.

Property assignment conditions

Condition	Description
Unconditionally	Always when the event selected for **When** occurs.
If property is empty	Only if the selected property is empty when the event selected for **When** occurs. When this option is selected, a **Field** list is visible for property selection.
If property is not empty	Only if the property is not empty when the event selected for **When** occurs. When this option is selected, a **Field** list is visible for property selection.
If new document	Only if the document is being created or imported by a user. When this option is selected, a list of actions that create a new document is visible for action selection.
If expression is true	Click the Meridian Enterprise Script Editor button to build a VBScript expression that will be evaluated to determine when a value will be assigned. For information on using VBScript for configuration expressions including their limitations, see the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference*.

10. Select a value from **Assignment** using the descriptions in the following table.

Property value options

Assignment	Description
Literal value	Set the property to an explicit value. When this option is selected, a **Value** input box is visible for value entry.
Value of another property	Set the value of this property to the value of another property. When this option is selected, a **Field** list is visible for property selection.
Expression	Click the Meridian Enterprise Script Editor button to build a VBScript expression that will be evaluated to calculate the value to assign to the property.
Clear value	Empty the property of whatever value it contains.

11. Repeat steps 6 through 10 for each property that you want to configure.
12. To change the order in which assignments are applied to the property, click the **Move Up** and **Move Down** buttons to arrange the assignments.
13. Click **OK**.

Configure Empty Property Synchronization

By default, Meridian Enterprise synchronizes an empty custom property only if it contained a value and a user deleted that value. Each such property requires multiple operations to find the previous value of the property. If a document uses many custom properties, these operations can negatively affect system performance, particularly if network performance is not optimal or for batch operations with many documents.

To prevent this effect, you can:

- Minimize the number of custom properties used
- Minimize the affect by configuring Meridian Enterprise to ignore the previous values of empty properties. Depending on how your organization uses the custom properties, this may or may not be acceptable.

To configure empty property synchronization:

1. In Configurator, expand **Environment** in the configuration tree and select **Application Link Settings**.

   The settings for each application link appear in property pages in the right pane.
2. Click **Application Integration**.

   The **Application Integration** settings page appears in the right pane.
3. Click **Edit**.

   To export the settings file to your computer, click the **Export** button. This can be useful if you want to edit the file in another text editor. You can then copy your changes to the Clipboard and paste them into Configurator.
4. Locate the **CheckBlankPropertiesAssigned** setting. If it does not yet exist, create it in the **[Vault]** section.
5. Set it to one of the values described in the following table.

   For example:

   ```
   CheckBlankPropertiesAssigned=0
   ```
6. Click **OK**.

Supported values

Value	Description
0	Empty properties are not synchronized

Value	Description
1	An empty property is only synchronized if it contained a value and a user deleted that value (default)
2	Empty properties are always synchronized

If this setting is not found, Meridian Enterprise checks the registry value **CheckBlankPropertiesAssigned** to control the synchronization.

The value can be found in the following client registry keys that support the same possible values and are described in the *Meridian Enterprise Administrator's Guide*:

```
HKEY_CURRENT_USER\Software\Cyco\AutoManager
Meridian\CurrentVersion\AMLink\Settings
```

```
HKEY_CURRENT_USER\Software\Cyco\AutoManager
Meridian\CurrentVersion\AMDocUpdateUtl\Settings
```

The setting described in this topic overrides both registry values and controls synchronization for all application links.

Property Pages And Wizard Pages

Property pages display the property values of an object when it is selected in one of the Meridian client applications. Meridian provides some built-in property pages and supports custom, user-configurable property pages.

Meridian Enterprise provides the following standard property pages, which cannot be modified:

- **Document**: The default page for documents that shows basic system properties and a thumbnail image of the document
- **Rendition**: Shows the properties in the **BCRenditionPropertySet** property set. These properties are used by the system to create and update document renditions as described in Renditions.
- **Retention**: Shows the properties in the **AMRetentionControlPropertySet** property set. You can use these properties with your own customization to support your organization's document retention policies. Meridian Enterprise does not enforce document retention with these properties by default.
- **Title Blocks**: Shows the values of title block attributes when multiple layouts exist in a drawing. The attributes can by synchronized with Meridian properties as described in Application Integration.
- **Folder**: The default property page for every folder in the **Folders** view

Wizard pages are property pages that are shown when new objects are created. Wizard pages can be used to prompt users to type property values for the object that they are creating, such as required properties that are used to calculate the object's name or folder location. A property page can also be used as a wizard page so that you do not have to create the same page layout for both purposes.

Meridian property pages and wizard pages are similar to the forms used by other database management systems. In many other systems, form layout can be a tedious process of sizing and moving form fields manually. Meridian Enterprise Configurator makes property page layout easy by automatically arranging form fields and labels for you in columns and rows. Configurator takes care of automatically aligning and spacing items horizontally and vertically. You have much control over the size, placement, and display of items on property pages without requiring tedious manual editing.

Property pages and wizard pages can also display:

- Properties of a parent folder
- Custom commands

- Static text
- External website pages

The layout of property pages and wizard pages is divided into sections called panels. Every property page or wizard page must have at least one panel. Additional panels can be created to group related properties together with an optional caption and separator line.

Creating property pages and wizard pages is described in the following topics.

View Property Pages

To view the available property pages of a vault:

1. In Configurator, expand **Pages** in the configuration tree to display the existing property pages.
2. To show what the page will look like using the current configuration settings, click the **Preview Page** button at any time.

Create a New Property Page

To create a new property page:

1. On the **Edit** menu, select **New Page**.

   A new page is added to the **Pages** list in the configuration tree and the page's property pages appear in the right pane.
2. Type or select options on the **General** tab using the descriptions in the following table.
3. Continue by configuring the property page as described in Edit a Property Page.

Property page general options

Option	Description
Display name (caption)	Type the name of the page as you want it to appear in the page's tab caption.
Name	A default internal name is calculated. Accept the default in most cases.
Panels list	Lists the current panels defined for the property page. For information on adding panels, see Create And Edit Panels.
Use external page	Enable this option and type the URL to a page of an external (not Meridian) website for which you want the property page to display the contents. For more information on configuring external pages, see Configure External Pages.
Use shared transaction	Enable this option if the external page will be used in a wizard.

Edit a Property Page

Unless specifically overridden, the appearance of all page elements is controlled by the settings on the Page Styles page of **Vault Settings** for **Environment**.

When you have made changes to a property page, users must reopen the vault in the client application to see the new changes. PowerWeb users must start a new session to see the changes.

To edit a property page:

1. Select the property page in the configuration tree.
2. Click **Edit**.
3. To change the appearance of the various page elements:
   a. Click the **Styles** tab.
   b. Enable **Override global style settings**.
   c. Modify the page elements to meet your needs.
4. To change the conditions under which the current property page or wizard page (but not command page) is visible:
   a. Click the **Visibility** tab.
   b. Click options or type values using the descriptions in the following table.
5. To associate a page with a document type:
   a. Click the **Applies To** tab and click the **Apply to document type button**.

      The **Select Document Type** dialog box appears.
   b. Select a document type to use the new page and click **OK**.

      The **Layout Properties** dialog box appears.
   c. Assign the page as a property page or wizard page, as described in Apply Property Pages To a Document Type.
6. When you are finished configuring the property page, click the **OK** button to save your changes.

   If the page has not yet been assigned to a document type or folder type, you will be prompted to assign it at this time. You can click **No** and assign the page later.

Property page visibility options

Option	Description
Page is in edit mode	Hides the page when the user has clicked the **Edit** button to edit any of the property pages for the selected object.
Page not in edit mode	Hides the page unless the user has clicked the **Edit** button to edit any of the property pages for the selected object.
Document state is Released	Hides the page when the selected document is in the Released state of a workflow.
Document state is not Released	Hides the page unless the selected document is not in the Released state of a workflow.
Document state is	Select a workflow state during which the page will be hidden.
Document state is not	Select a workflow state during which the page will not be hidden.
Document is not assigned to the current user	Hides the page unless the selected document is assigned to the current user for change.
This expression is True	Click the Meridian Script Editor button to build a VBScript expression that will be evaluated to determine when the page is hidden. For information on using VBScript for configuration expressions including their limitations, see the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference*. To hide a property page from users accessing the vault with PowerWeb, use the expression `Client.Type = "HTML"`. **Note:** Beginning with Meridian Enterprise 2017, the PowerUser client and PowerWeb calculate wizard page visibility the same way by default. That is, the visibility of each page is determined by the property values that have been set in previously shown wizard pages. This was not the case prior to Meridian Enterprise 2017. If your vault is configured to rely on the old behavior, set the **CalculateVisibilityPerPage** setting to **0** in the **[Vault]** section on the **Application Integration** tab of the **Application Link Settings** page in the **Environment** branch of the configuration tree in Configurator. Then the visibility of all pages in PowerWeb will be determined before the wizard begins.

Create And Edit Panels

The layout of property pages and wizard pages is divided into sections called panels. Every property page or wizard page must have at least one panel. Additional panels can be created to group related properties together with an optional caption and separator line. Creating a panel defines a group of properties and other elements to appear on a property page or wizard page.

Panel elements are the individual items that can appear in a panel on a property page. The layout of panel elements within a panel can be defined in one of two styles:

- A static array of elements that always appear the same. This layout style is appropriate when the document types to which the property page will be assigned use all of the same properties in common.
- A dynamic array of elements, the behaviors of which can be determined by the value of a specified property for each document. This layout style is appropriate when the document types to which the property page will be assigned use different subsets of the same properties. This style allows you to define one property page that can be used with multiple document types and each document type can display a different combination of properties.

  You can configure the behavior of the panel elements to distinguish between document types, workflow states, user security roles, and other conditions that you require.

Panels of each type can be defined for the same property page. Convenient controls are also provided for configuring fixed field widths and visibility or read-only VBScript expressions for multiple panel elements in one operation.

To create or edit a panel:

1. In Configurator, expand **Pages** in the configuration tree to display the existing pages.
2. Select the page for which you want to create or edit a panel.
3. Click **Edit**.
4. Choose between three options:
   - To create a new panel, click **Add** on the **General** page.
   - To edit a panel, select the panel in the list and click **Edit Panel**.

     The panel's **Properties** dialog box appears.
   - To delete a panel, select the panel in the list on the **General** page and click **Remove**.
5. Click options or type values using the descriptions in the following table.

Panel general options

Option	Description
Display name (caption)	Type the name of the panel as you want it to appear as the panel's caption if the **Show caption** option is enabled.
Name	A default internal name is calculated. Accept the default in most cases.
Size	Type the number of columns in which you want the panel's items to appear in the page layout.
Show caption	Select this option to display the panel's **Display Name** value as a caption at the top-left corner of the panel. A horizontal separator line will separate the caption from the other panel elements.
Display line separator under panel	Select this option to display a horizontal separator line below the panel. This can be useful if the page has multiple panels.
Hide entire panel when all fields are hidden	Select this option to hide the panel if all fields in the panel are invisible. This setting was added in the 2022 release.

6. Click the **Fields** tab.

   The names of the current elements of the panel are shown in a grid of rows and columns that represent the general layout of the panel.

   The tab is named **Fields** because, in this context a panel element can be a property, a command button, or static text, which are also known as fields on a form and a property page can also be thought of as a form.

7. Select an option from Layout Style, **Static** or **Dynamic**.
   - Select **Static** if you will use this property page for only one document type or you will use it for multiple document types but always with the same properties visible.
   - Select **Dynamic** if you will use this property page for multiple document types and it should display different panel elements depending on the value of a selected property.

8. Choose between two options:
   - If you selected **Static**, type the number of columns to arrange the elements into in **Size**.
   - If you selected **Dynamic**, select the property from **Property** that you want to use to control the visibility of some or all of the panel's elements.

     This property is referred to as the controlling property in the remainder of this procedure.

> **Note:**
> Using dynamic panels only makes sense when you know which panel elements should appear for every possible value of the controlling property. To know every possible value in advance implies that the property should use either a lookup list to present those possible values or use values that are defined for the property in the Field-Path definition. Otherwise, the panel elements that would be visible and their behavior would be unpredictable.
>
> For this reason, you should only use a property that is associated with a lookup list or has its possible values specified in the Field-Path definition as the controlling property.

9. To add or edit elements in the layout, see Create And Edit Panel Elements.
10. If the panel layout style is set to **Dynamic** and if the property that you selected in step 9 uses values from a lookup list, click **Get values**.

    The values of the lookup list appear as column headings in the grid. This results in a matrix that you can use to specify the behavior of each panel element for each possible value of the selected property.
11. For each cell in the grid, click the cell to select a behavior option for that combination of the panel element (row) and the controlling property value (column).

    Each panel element can be either **Visible**, **Read Only**, **Required**, or invisible (blank).
12. To more easily set a fixed width for multiple elements at the same time:
    a. Select the elements for which you want to set a fixed width.

       You may press and hold the Ctrl or Shift keys to select multiple elements.
    b. Enable **Fix width for selected fields**.
    c. Type a width in the text box.

       The width is saved as the **Fixed width** property on the **Layout** page of each panel element. This is the same as setting the property as described in Configure the Layout Of a Panel Element. The option is available here only for the convenience of configuring multiple panel elements at the same time.
13. To more easily set a visibility or read-only expression for multiple elements at the same time:
    a. Select the elements for which you want to set an expression.

       You may press and hold the **Ctrl** or **Shift** keys to select multiple elements.
    b. Click **Set Visibility expression** or **Set Read-Only expression** accordingly.

       The **Meridian Enterprise Script Editor** appears.

c. Type a valid VBScript expression that when it evaluates to **True** will make the panel element visible or read-only accordingly.

   For information on using VBScript for configuration expressions including their limitations, see the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference*. The expressions are saved as the corresponding options on the **Conditions** page of each panel element. This is the same as setting the display conditions for individual properties as described in Configure the Display Conditions Of a Panel Element. The option is available here only for the convenience of configuring multiple panel elements at the same time.

14. Click **OK**.

Create And Edit Panel Elements

To create or edit the panel elements of a property page:

1. In Configurator, expand **Pages** in the configuration tree to display the existing pages.
2. Select the page containing the panel for which you want to create or edit an element.
3. Click **Edit**.
4. On the **General** page, select the panel for which you want to create or edit an element.
5. Click the **Edit Panel** button.

   The panel's **Properties** dialog box appears.
6. Click the **Fields** tab.

   The layout of the current panel elements appears. A grid displays the current panel elements and their arrangement within the panel.
7. Choose one or more of the following options:
   - To create a new element:
     a. Click **Add**.

        The element's **Properties** dialog box appears.
     b. Proceed to step 8.
   - To edit an element:
     a. Select the element.
     b. Click **Edit**.

        The element's **Properties** dialog box appears.
     c. Proceed to step 8.
   - To move an element to a different location in the layout, click the arrow buttons accordingly.
   - To delete a panel element:
     a. Select the panel element in the list.
     b. Click **Remove**.
8. To configure the element's property type, see Edit a Property Page.
9. To configure the element's layout, see Configure the Layout Of a Panel Element.

10. To configure the element's display conditions, see Configure the Display Conditions Of a Panel Element.

    You may also set the display conditions of multiple elements in one operation as described in Create And Edit Panels.

11. To configure the element's appearance, see Configure the Appearance Of a Panel Element.
12. Click **OK**.

Configure the Property Type Of a Panel Element

The property type of a panel element determines what type of object will appear in that element's position on a panel.

To configure the property type of a panel element:

1. In Configurator, expand **Pages** in the configuration tree to display the existing pages.
2. Select the page containing the panel that you want to edit.
3. Click **Edit**.
4. On the **General** page, select the panel that contains the panel element that you want to edit.
5. Click the **Edit Panel** button.

   The panel's **Properties** dialog box appears.
6. Click the **Properties** tab.

   The layout of the current panel elements appears.
7. Select the panel element that you want to edit in the list.
8. Click **Edit**.

   The panel element's **Properties** dialog box appears.
9. On the **General** tab, click options or type values using the descriptions in the following table.
10. Click **OK**.

Panel element property options

Option	Description
Display Name	Type the name of the element as you want it to appear on the property page.
Name	A default internal name is calculated. Accept the default in most cases.
Property of current object	Select this option to display the value of an existing property in this element's position in the layout of the property page. Select an existing property to display from the list. Click **Definition** to show the property's property pages. Click **New** to create a new property definition, as described in Create And Edit Custom Properties.

Option	Description
Property of the parent object	Select this option to display the value of an existing property of the parent of the selected object (document or folder) in this element's position in the layout of the property page. This is similar to inherited properties. The selected object inherits this property value from its parent object. This inheritance can continue to any number of levels. If the selected object is a document, its parent object is a folder. If the selected object is a folder, its parent object is its parent folder. Property values displayed in this way are called *routed properties* because the value of the property is routed from its origin down through the vault's folder structure to any other property pages where it is shown. Select the object to which the property is assigned from the left list. Then select the property to display from the right list.
Command	Select this option to display a button for an existing custom command in this element's position in the layout of the property page. Select an existing command to display from the list. Click **Definition** to show the command's property pages. Click **New** to create a new command, as described in Create And Edit Custom Commands.
Static text	Select this option to display static text in this element's position in the layout of the property page, such as an instruction to the user.
Hyperlink	Select this option to display a custom hyperlink on the property page. Type the destination URL in **URL** or select **Calculate by script expression** and then click the Meridian Enterprise Script Editor button to build a VBScript expression. Type the text that you want to appear on the property page in **Text** or select **Calculate by script expression** and then click the Meridian Enterprise Script Editor button to build a VBScript expression.

Configure the Behavior of a Panel Element

The behavior setting of a panel element controls when the form is refreshed.

To configure the behavior of a panel element:

1. In Configurator, expand **Pages** in the configuration tree to display the existing pages.
2. Select the page containing the panel that you want to edit.
3. Click **Edit**.
4. On the **General** page, select the panel that contains the panel element that you want to edit.
5. Click **Edit**.

   The panel's **Properties** dialog box appears.
6. Click the **Fields** tab.

   The layout of the current panel elements appears.
7. Select the panel element that you want to edit in the list.
8. Click **Edit**.

   The panel element's **Properties** dialog box appears.
9. Click the **Behavior** tab.

   The field's behavior options appear.
10. If you want the form to refresh when the user changes the value of the field, select the **Refresh form if user changes the value** check box.

    This setting is useful to enable when the value of another field is dependent upon this field's value.
11. Click **OK**.

    The panel's **Properties** dialog box closes.
12. Click **Apply**.

Watch this short video to learn how to enable a page form refresh in the Configurator: Enable Page Form Refresh.

Configure the Display Conditions Of a Panel Element

The display conditions of a panel element determine when the element is visible, read-only, or cleared.

To configure the display conditions of a panel element:

1. In Configurator, expand **Pages** in the configuration tree to display the existing pages.
2. Select the page containing the panel that you want to edit.
3. Click **Edit**.
4. On the **General** page, select the panel that contains the panel element that you want to edit.
5. Click **Edit**.

   The panel's **Properties** dialog box appears.
6. Click the **Fields** tab.

   The layout of the current panel elements appears.
7. Select the panel element that you want to edit in the list.
8. Click **Edit**.

   The panel element's **Properties** dialog box appears.
9. Click the **Conditions** tab.

   The field's condition options appear.
10. Click options or type values using the descriptions in the following table.

    If you use a property on multiple pages, only the value from the last page shown will be saved. You may want to restrict users from editing the property on other pages by enabling the **Field is read-only and cleared** option for the property on the pages that should be read-only.
11. Click **OK**.

Panel element display conditions

Option	Description
Field is visible	Makes the element visible. Select either **Always** or **This expression must be True**, and click the Meridian Enterprise Script Editor button to build a VBScript expression that will be evaluated to determine when the element is visible. For information on using VBScript for configuration expressions including their limitations, see the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference*.
Field is read-only and cleared	Makes the element read-only and disable user input. Select either **Always** or **This expression must be True**, and click the Meridian Enterprise Script Editor button to build a VBScript expression that will be evaluated to determine when the element is visible. For information on using VBScript for configuration expressions including their limitations, see the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference*.
Apply to entire batch	Applies the values that users type for this element for the first document of each document type in a batch to all of the other documents of the same document type in the same batch. For this to succeed, the user must also select the **Apply for all other documents of this type** option in the wizard page during batch processing. **Note:** This setting is set to **Always** by default. Select either **Always** or **This expression must be True**, and click the Meridian Enterprise Script Editor button to build a VBScript expression that will be evaluated to determine when the element is visible. For information on using VBScript for configuration expressions including their limitations, see the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference*.

Configure the Layout Of a Panel Element

The layout of a panel element determines how the element appears on a panel.

To configure the layout of a panel element:

1. In Configurator, expand **Pages** in the configuration tree to display the existing pages.
2. Select the page containing the panel that you want to edit.
3. Click **Edit**.
4. On the **General** page, select the panel that contains the panel element that you want to edit.
5. Click the **Edit Panel** button.

   The panel's **Properties** dialog box appears.
6. Click the **Properties** tab.

   The layout of the current panel elements appears.
7. Select the panel element that you want to edit in the list.
8. Click **Edit**.

   The panel element's **Properties** dialog box appears.
9. On the **Layout** tab, click options or type values using the descriptions in the following table.
10. Click **OK**.

Panel element layout options

Option	Description
Show label	Select this option to show a label near the element on the property page.
Text	Type the label text to show near the element on the property page.
Minimum width	Select this option to set the minimum width of the label text before text wrapping is applied. Type the minimum number of characters in the input box.
Placement	Select a vertical alignment option for the label text. The label is always shown to the left of the element.
Fixed width	Select this option to set a fixed width for the element. This prevents the element from expanding or shrinking to fit the width of the property page. Type the width of the element in characters in the input box.
Select the format for this property	Select an option to control the display of date property values. This option is visible only when a date property is selected as the property type on the **General** page.

Configure the Appearance Of a Panel Element

The appearance of a panel element determines its text font, attributes, and colors.

To configure the appearance of a panel element:

1. In Configurator, expand **Pages** in the configuration tree to display the existing pages.
2. Select the page containing the panel that you want to edit.
3. Click **Edit**.
4. On the **General** page, select the panel that contains the panel element that you want to edit and click the **Edit Panel** button.

   The panel's **Properties** dialog box appears.
5. Click the **Properties** tab.

   The layout of the current panel elements appears.
6. Select the panel element that you want to edit in the list.
7. Click **Edit**.

   The panel element's **Properties** dialog box appears.
8. On the **Appearance** tab, click options or type values using the descriptions in the following table.
9. Click **OK**.

Panel element appearance options

Option	Description
Override field font settings	Select this option to override the effective font setting for this element. This setting overrides the **Edit box** font setting of either the **Page Styles** options of the **Environment** or the **Styles** options of the property page if the page's **Override global style settings** option is enabled.
Override property background color	Select this option to override the effective background color setting for this element. This setting overrides the **Edit box** background color setting of either the **Page Styles** options of the **Environment** or the **Styles** options of the property page if the page's **Override global style settings** option is enabled.
Override label font settings	Select this option to override the effective label font setting for this element. This setting overrides the **Control labels** font setting of either the **Page Styles** options of the **Environment** or the **Styles** options of the property page if the page's **Override global style settings** option is enabled.

Option	Description
Do not display user input (if applicable)	Select this option to mask user input, such as for entry of a password.

Delete a Property Page

Important!
Deleting a property page makes the property page unavailable in the vault's history. Only delete a property page that you know will never be needed again. To retain a property page for vault history but make it unavailable for future documents, clear the property page for all objects on the **Applies to** page, but do not delete the property page.

To delete a property page:

1. Select the property page in the configuration tree and click the **Applies to** tab.

   The document types and folder types to which the property set are applied appear.
2. Click the **Edit** button, clear the check box for each object type, and click **OK**.
3. On the **Edit** menu, select **Delete**.

Configure External Pages

The Meridian client applications can display the contents of an external (not PowerWeb) website page as a property page for a document or folder. This can be useful if additional information about the documents or folders in a vault resides in another information system. That information can be shown together with the Meridian vault data so that users don't have to access the other system to view the additional data.

The external page can be an existing web page of another application or a custom web page you create to query a database and present the information inside Meridian. If the page accepts parameters that specify the information to display, you can calculate those parameter values using VBScript to retrieve and format Meridian document or folder property values.

> **Note:**
> If you find that your external pages are not displaying properly, you may need to change your HTTP Response Header configuration. By default, the X-Frame-Options header is not included in the HTTP response to protect against ClickJacking attacks.
>
> If you are using external pages, your **X-Frame-Options** setting needs to be set to **sameorigin**. If you are not using external pages, this setting should be set to **deny**.

To configure an external page:

1. In Configurator, expand **Pages** in the configuration tree to display the existing pages.
2. Select the page for which want to display an external web page and
3. Click **Edit**.
4. To create a new page, see Create a New Property Page.
5. Click options or type values using the descriptions in the following table.
6. Click **OK**.

External page options

Option	Description
Use external page	Select this page to display an external website page instead of Meridian panels containing property, command, or text elements.

Option	Description
Page URL	Type the full URL to the external page. To calculate parameters to pass in the URL, click the Meridian Enterprise Script Editor button to build a VBScript expression. For information on using VBScript for configuration expressions including their limitations, see the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference*. **Note:** The external page will only appear if it is assigned to a different application pool than Meridian. The page will not appear if it is assigned to the same application pool as Meridian. The page must also satisfy the same-origin security policy enforced by the web browser. That is, if the page is hosted by a web server in a different domain or in a sub-domain of the Meridian web server domain, implement both of the following options: • Set the **Domain** registry value on the Meridian web server as described in the *HKEY_LOCAL_MACHINE\Software\Cyco\AutoManager Meridian\CurrentVersion\WebLink* article in the *Meridian Enterprise Administrator's Guide*. Set it to a higher level domain that is shared by the two systems. • Set the domain of the external page using JavaScript in its body to the same domain as you set in the **Domain** registry value. For example, if the Meridian web server is in the domain `meridian.myserver.local` and the external page is hosted in `mypage.externalPages.myserver.local`, set the **Domain** registry value to `myserver.local` and call `document.domain = "myserver.local"` in the external page. To show the comments entered in Meridian Explorer for a document, type a view URL that passes the document ID and set the **COMMENTS** parameter to **True** as described in the *Compose View URLs* article in the *Meridian Enterprise Server Administrator's Guide* .

Configure the Application Integration Properties Pane

Meridian Application Integration displays a small subset of properties for the selected document (**Name**, **Revision Date**, **Revision**, **Size**, **Status**) in its properties (upper-right) pane. The properties shown in this pane can be configured to show the properties that are most important to your organization.

To configure the properties pane:

1. In Configurator, expand **Environment** in the configuration tree and select **Application Link Settings**.

   The settings for each application link appear in property pages in the right pane.

2. Click **Application Integration**.

   The **Application Integration** settings page appears in the right pane.

3. Click **Edit**.

4. Locate the line that contains **[AdditionalProperties]**.

   This section of the configuration defines the properties that are shown after the base properties in the properties pane.

   > **Note:**
   > Do not modify the **[BaseProperties]** section.

5. On a blank line in the **[AdditionalProperties]**section, type the property set and property name of each additional property to display in the properties pane in the format:

   <*PropertySet*>.<*PropertyName*>=[<*Label*>][,<*Flags*>]

   The <*Label*> parameter is an optional label to display instead of the property's **DisplayName** value. If the parameter is omitted, the property name will be used. Because the space in the properties pane is small, we recommend you use a short label.

   The <*Flags*> parameter is an optional flag that controls display of the property, as described in the following table.

6. Click **OK**.

Application Integration property flags

Flag	Description
_FILESIZE	Use with file size properties to format the value as a string.
_ALTNAME	The property will be shown in navigation views instead of the document's **Name** property. It can also be used in the other views configured on the **Vault Settings** branch of the configuration tree. This can be useful if the file names of documents are heavily codified, making them impractical for normal use. To display the property in views, also add the property to the views' column configuration, as described in Create And Edit Navigation Views and Configure Column Layouts.

Document Types

A Meridian vault can store any type of document: specifications, drawings, manuals, letters, email messages, calculations, digital photographs, scanned images, and so on. However, folder names, file names, and file extensions are often insufficient or too limited to adequately classify large quantities of documents. Meridian allows you to classify documents by document type according to their business purpose. This gives you complete freedom to name folders and files without regard to their format or native application. It also makes configuring Meridian more logical because a Meridian document type determines many characteristics of documents independent of their file type:

- The templates they are created from
- How they are named and stored, either automatically or manually
- What property pages and wizard pages they display and when wizard pages are shown
- What custom functionality they use
- The workflow they must follow to be edited and approved
- How their data may be linked to Meridian properties
- How and when revision numbers are incremented
- Which users can access them and how

Different file types can be classified by the same Meridian document type and a file in one format can be assigned to any one of many Meridian document types. Before creating document types, it is very helpful to first gather as much information as possible about the characteristics in the preceding list.

Creating and configuring document types is described in the following topics.

Create And Edit Document Types

Important!
Deleting a document type makes the document type unavailable in the vault's history. Only delete a document type that you know will never be needed again. To retain a document type for vault history but make it unavailable for future documents, set its **Document type availability** option to **Never** as described in Create And Edit Document Templates but do not delete the document type.

Note:
It is very helpful to first gather as much information as possible about the characteristics listed in Document Types.

To create or edit a document type:

1. In Configurator, expand **Document Types** in the configuration tree to show the existing document types.
2. Choose between three options:
   - To create a new document type:
     a. On the Edit menu, select **New Document Type**.

        A new document type is added to the configuration tree and the document type's property pages appear in the right pane.

     b. Proceed to step 3.
   - To edit an existing document type:
     a. Select the document type.
     b. Click **Edit**.
     c. Proceed to step 3.
   - To delete a document type:
     a. Select the document type.
     b. On the **Edit** menu, select **Delete**.

        A dialog box opens, asking you to confirm your choice.

     c. Click **Yes**.

> **Note:**
> To delete the **GenericDocument** type, first make a different document the default document type, as described in Assign Document Types To Imported Files.

3. On the **General** page, select or type options, as described in Configure Document Type General Options.
4. On the **Revision Number** page, select or type options, as described in Configure Document Revision Numbers.
5. If you selected **Use built-in workflow** on the **General** page, then on the **Workflow** page, select or type options, as described in Configure Document Type Workflow.
6. On the **New Document** page, select or type options, as described in Configure Document Templates.
7. On the **Import Document** page, select or type options as described in Assign Document Types To Imported Files.
8. On the **Extensions** page, select or type options, as described in Apply Custom Extensions To a Document Type.
9. Click the **Properties** page to view the properties available to the document type, as described in View the Properties Of a Document Type.
10. On the **Pages** page, assign property pages to the document type, as described in Apply Property Pages To a Document Type.
11. On the **Commands** page, select the custom commands that you want to be available to users when documents of this document type are selected.
12. On the **Title Blocks** page, select or type options, as described in Configure Title Block Updates.
13. On the **Duplicator Default Action** page, select an option to specify where references to documents made from this document type will refer when assemblies are duplicated.

    This setting is also affected by the vault settings described in Configure the Assembly Options and by the configuration of the reference types as described in Create And Edit Reference Types.
14. Click **OK**.

Configure Document Type General Options

To configure the **General** page options:

1. In Configurator, expand **Document Types** in the configuration tree to display the document types.
2. Select the document type that you want to configure.

   The document type's property pages appear in the right pane.
3. On the **General** page, click the **Edit** button.
4. Click options or type values using the descriptions in the following table.
5. Click **OK**.

Document type general options

Option	Description
Display Name	Type the name of the document type as you want it to appear to users.
Name	A default internal name is calculated. Accept the default in most cases.
Description	Type an optional description of this document type that appears as a tooltip.
Document naming	• Select **Use default file name** if no name calculation will be performed. Users can type a file name when a document is created or accept the default file name. • Select **Calculate file name** if you want file names for this document type to be calculated automatically when documents are created, such as to conform to your organization's naming standards. Click the Meridian Enterprise Script Editor button to build a VBScript expression to calculate the file name. This calculation will also be performed when users invoke the **Issue New file name** command in the Meridian client applications. • Select **Calculate file name upon import** if you want imported file names to be overwritten with calculated file names. • Select **Calculate file name upon project copy creation** if you want the file names of newly created project copies to be calculated. For more information on calculating file names, see File Name Calculation. For information on using VBScript for configuration expressions including their limitations, see the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference*.

Option	Description
Document type workflow	• Select **Use built-in workflow** to use this document type's built-in workflow and to configure its **Initiation**, **Work in progress**, and **Review and approval** phases on the **Workflow** page as described in Configure Document Type Workflow. • Select **Use workflow definitions** to use one or more custom workflows for this document type. For information on configuring custom workflows, see Create And Edit Workflow Definitions. • Select an option for **Initial workflow state after Derive/Replace** to apply when new documents are created by the **Derive Document**, **Derive with References**, or **Replace Document** commands. For more information about these commands, see the *Meridian Enterprise User's Guide* . • Also select an option for **Workflow state after Revert** to apply to documents when the **Revert to this Revision** command is executed. For more information about this command, see the *View Prior Revisions* article in the *Meridian Enterprise User's Guide* .
Type	Select **General** unless this document type will be used by the Meridian Transmittal Management Module, in which case select **Transmittal** or **Submittal** accordingly. Select **Hybrid document** if you want other document types to be able to be attached to this document type as parts, such as hybrid drawings composed of both vector and raster files. Type text in **Postfix** to be appended to the names of normal documents that are converted into hybrid documents by the **Convert to Hybrid** command. Because the name of the part file is assigned to the main file by the command, the **Postfix** text ensures that all file names are unique within the vault. For more information on working with hybrid documents, see the *Hybrid Documents* section in the *Meridian Enterprise User's Guide* . **Important!** Changing an existing document type to be a hybrid document type can take a long time to complete if many documents have already been made from this document type. **Note:** Disabling the **Hybrid document** option of an existing hybrid document type does not detach part documents from existing documents made from this type. The documents will remain hybrid documents and the document type change will only apply to future documents made from this document type.
Keywords	Type one or more keywords to identify this document type in VBScript expressions with the **ConfigKeywords** property as described in the *DocumentType Object* section of the *Meridian Enterprise VBScript API Reference*. Keywords are always stored in upper case. They are exported and imported with vault configuration (.met) files.

Option	Description
Disable all notifications	Prevents all email notifications for the selected document type.

File Name Calculation

A document type's **Calculate file name** option allows you to configure automatic file names for all documents created with that document type. Every document type can use the same or a different file name calculation. This makes it relatively easy for all of your Meridian vault documents to use your organization's naming standards. File names can be calculated when documents are created in the vault, as needed by users invoking the **Issue New file name** command, and optionally when existing documents are imported into a vault.

> **Note:**
> In Meridian vaults, a document's **Name** property is used as its file name. Changing one also changes the other. The terms *document name* and *file name* are synonymous where used in this guide.

Document names are calculated by a VBScript expression that you must type in the **Calculate file name** option. You can use the Meridian Enterprise Script Editor to build the expression from any of the Meridian objects, properties, and functions available in the Meridian Enterprise Script Editor. For information on using VBScript for configuration expressions including their limitations, see the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference*.

This means that you can combine text from several places to calculate file names:

- Part or all of property values, such as a document's title, project, trade discipline, and so on
- Part or all of the name of the template used to create the document
- Normal text
- Any valid Windows characters
- Sequential numbers managed by Meridian

> **Note:**
> File names must include a file extension so that the correct document type can be applied, hybrid parts detected, and the correct applications started. If the **Calculate file name** expression does not calculate a valid file extension, Meridian Enterprise will append the file extension from the document template that was used to create the document or from the original document.

To build a file name calculation expression, use VBScript to retrieve and format property values, sequential numbers, and other text elements, and then concatenate them.

For example, the following VBScript expression calculates a file name composed of the document type name, the next sequential number based upon the document type formatted to four characters in length, and the document's title:

```
Document.DocumentType.DisplayName & " " & _
FormatSequenceNum(Document.DocumentType.Sequence.Next, 4) & _
" " & Document.Title
```

This expression would produce a file name similar to:

Drawing 0123 Site Plan

For more information on using VBScript, property values, and sequence numbers, see Configuration Expressions in the *Meridian Enterprise VBScript API Reference*.

Configure Document Revision Numbers

Meridian can automatically assign revision numbers to documents when they complete a workflow of any kind. This ensures that every new revision can be uniquely identified. The **Revision Number** options in Configurator give you much control over how and when revision numbers are incremented.

New document revisions can also be created during a workflow. Additional revisions can be created by a workflow definition state as described in Allow New Revisions In a Workflow State and by a workflow definition transition as described in Create New Revisions In a Workflow Transition.

To configure revision numbering:

1. In Configurator, expand **Document Types** in the configuration tree to display the document types.
2. Select the document type that you want to configure.

   The document type's property pages appear in the right pane.
3. Click the **Revision Number** tab.

   The document type's revision number options appear.
4. Click options or type values using the descriptions in the following table.

Document revision number options

Option	Description
Revision number	Select one of the available formats from the list. • **Hierarchical**: Specifies revision numbers composed of major and minor parts separated by a selected character. Each part is associated with successive levels of project folders. The major part of the revision number represents revisions released for the master document, the first minor part represents revisions released within the highest level project folder, the next minor part represents revisions released within the first subproject folder, and so on. For example: revision 1 may exist for the master document while revision 1.1 exists in a project folder, and revision 1.1.1 is currently being edited in a subproject folder. A different number format may be set for each level to produce revision numbers that change format between in-progress documents and released documents. For example, a new document created in a project folder could start as revision A, iterate through several revisions B, C, and so on, and then when it is released as a master document it becomes revision 1. The cycle would repeat similarly when the document is revised in a new project and result in revision 2. • **Linear**: Specifies a simple revision number that increments linearly with each new revision; for example: 0, 1, 2, and so on. • **Master/Project Copy**: Specifies revision numbers the same as the **Hierarchical** format except that the parts are associated with the master document and its project copies regardless of folder depth. This format requires that the **Increment the revision number** option be set to **After starting a new revision**. • **None** specifies that the revision number will not be incremented automatically.
Number format	• Select a number format from the list that corresponds to each part of the revision number and then select a character from **Separator character**. • Select **Initially blank** to assign no number to the initial revision of a document and then select a character from the **Blank character** list. • Enable **Exclude hard-to-read characters** to skip the revision letters I (as in India) and O (as in Oscar) so that they are not mistaken for 1 (one) and 0 (zero) respectively. A dynamic preview of the resulting revision number format appears under **Example**.

Option	Description
Increment the revision number	Select an option to specify when the revision number will be incremented: • **Before starting a new revision**: Increments the major part and the minor part of the revision number at the start of the document's workflow • **After starting a new revision**: Increments the major part and the minor part of the revision number at the end of the document's workflow. • **Before starting a new revision in projects**: Increments the major part of the revision number when a project copy is released from a project folder and the minor part of the revision number at the start of the document's workflow. Required for the **Master/Project Copy** format. Select additional events to increment the revision number if they apply to your organization's standards: **When releasing the initial revision** and **When releasing the initial revision from a project** are often useful when **Initially blank** is enabled. The revision number of a master document is always updated from a project copy regardless of whether the Meridian Advanced Project Workflow Module is enabled and regardless of any other settings.
On Quick Change	Select **On Quick Change** if you want the Quick Change workflow to increment the revision number. Disable this option if you want to use the Quick Change workflow for trivial changes that will not increment the revision number. The Quick Change workflow transitions can be managed by their own security privileges so that they can only be executed by members of specific roles. For more information on security privileges and roles, see Security Roles.
Support Concurrent Project Copies	Select this option if you want the revision number to increment to the next revision number (as configured for the document type) each time a project copy is released as master, even if there are multiple concurrent project copies.
Revision number for replacement documents	Select an option to specify the revision number of new documents created by users invoking the **Replace Document** command in the Meridian client applications. For more information on replacing documents, see the *Replace a Document* article in the *Meridian Enterprise User's Guide* .

A document type may only use one revision number format configuration. To switch revision number formats during a document's life cycle when project folders are not used, such as from alphabetical to numeric when a preliminary document is released for production, consider using two nearly identical document types, each with a different revision number format. Documents may then be changed from one document type to another at the appropriate time either manually by users with the **Change Document Type** command in the Meridian client applications or automatically by custom VBScript event code.

Configure Document Type Workflow

If a document type's workflow option on its **General** page is set to **Use built-in workflow**, the document type will use document type workflow. The document type workflow built into each Meridian document type allows you to use a graphical workflow diagram to configure a workflow process for each document type. The workflow must be followed by users to create new revisions of documents made from that type. For more information about document type workflow, see Document Type Workflow.

The options on the **Workflow** page of a document type are then grouped into three workflow stages, **Initiation**, **Work in progress**, and **Review and approval**. The options you choose in each group dynamically update the workflow graphic on the right side of the page. You configure the workflow by selecting the options that best represent your organization's revision process. If these options are insufficient to reproduce your revision process, consider using workflow definitions instead, which are described in Workflow Definitions.

> **Note:**
> The workflow manager referred to in the workflow options is the person who initiates the workflow, regardless of the Meridian security role or job function. However, the workflow manager can be changed at any time during the workflow to a different person if necessary. For more information on routing documents in workflows, see the *Route a Document In a Workflow* article in the *Meridian Enterprise User's Guide* .

To configure document type workflow:

1. In Configurator, expand **Document Types** in the configuration tree and select the document type that you want to configure.

   The document type's property pages appear in the right pane.

2. Click the **Workflow** tab.

   The workflow options appear. If the workflow graphic becomes too large to see as you set the options, click the **Zoom to Fit** button to resize the graphic.

3. Click **Edit**.
4. Click options or type values using the descriptions in the following table.
5. Click **OK**.

Document type workflow options

Option	Description
Initiation	Select an option to configure how the workflow will be initiated, either directly to a user for editing or first to a workflow manager who assigns work. Select **Users can refuse assignments** to allow users to refuse assignments that are assigned to them directly. Refused assignments are returned to the workflow manager for reassignment.
Work in progress	Select **Documents under change can be forwarded** to add an optional **Forward** transition to the **Under Change** state. This option can be useful if users collaborate on the same document revision.
Review and approval	Select the options that best represent how your organization reviews and approves document revisions.
Generate renditions after the following transitions	Select the transitions that you want to initiate the generation of a rendition. The new rendition will replace an existing rendition if it exists. This option is ignored if the **Use renditions option** is cleared as described in Configure General Vault Settings.

Note:
The **Retired** workflow state is added to all workflow configurations. This state is useful for retaining obsolete documents in a vault for reference but blocking them from being edited by future workflows.

Configure Workflow Definitions

If a document type's workflow option on its **General** page is set to **Use workflow definitions**, the document type will use the workflow definitions that are configured independent of the document type in the vault's configuration. Only those workflows may be followed by users to create new revisions of documents made from the selected document type. The options on the **Workflow** page of a document type are then used to configure which workflow definitions are used, when they are used, and in which states new documents should begin their workflow.

> **Note:**
> New documents include those made by the copy commands **Copy Document**, **Create Project Copy**, and so on.

To configure workflow definitions:

1. In Configurator, expand **Document Types** in the configuration tree and select the document type that you want to configure.

   The document type's property pages appear in the right pane.
2. Click the **Workflow** tab.

   The workflow definition options appear. If the workflow definitions that you want to use with this document type are not listed, apply them as described in Create And Edit Workflow Definitions.
3. Click **Edit**.
4. Click options or type values using the descriptions in the following table.
5. Repeat step 4 for each workflow definition that you want to be used with this document type.
6. Click **OK**.

Workflow definition options

Option	Description
Available workflow definitions	Select a workflow definition that you want to be used with this document type. Select check boxes in the **For existing documents** and **For new documents** columns, accordingly.

Option	Description
Workflow state for new documents	Select a workflow definition that you want to be used with this document type. The workflow definition's workflow diagram appears. Select the initial state for new documents from **Workflow state for new documents**. **Note:** • Setting this option overrules the **Initial workflow manager** options set for the workflow definitions used by this document type as described in Create And Edit Workflow Definitions. • If this option is set, errors can occur if a VBScript event handler attempts to also set the workflow state.

Configure Document Templates

To configure the **New Document** page options:

1. In Configurator, expand **Document Types** in the configuration tree to display the document types.
2. Select the document type that you want to configure.

   The document type's property pages appear in the right pane.
3. On the **New Document** page, click the **Edit** button.
4. Click options or type values using the descriptions in the following table.
5. Click **OK**.

New document options

Option	Description
Document type availability	Select an option to control when this document type is available for selection by users when creating new documents from templates: • **Always**: The document type is always available to users when creating new documents from templates. • **If they have the Create Document privilege**: Applies only when the Use Document Type Security option is enabled in **Vault Settings** of the **Environment** branch of the configuration tree in Configurator. If the option is enabled, users must have the **Create Document** privilege specifically for the selected document type in the folder where the document will be created. • **Never**: Prevents users from creating new documents of this type from templates. This option can be useful to make a document type obsolete without deleting it from the configuration. We do not recommend deleting document types from a vault configuration. Existing documents or older revisions may still use the document type. The behavior of PowerUser and PowerWeb differ in a small number of ways and this option affects one of them. Dragging and dropping a file in PowerUser is considered a form of import, not as creating a new document from a template. Consequently, a document will be successfully imported by drag and drop if its file extension is assigned to a document type that has this open set to **Never**. However, the user cannot select that document type to create new documents from a template. Conversely, dragging and dropping a file in PowerWeb is not considered a form of import but as creating a new document. The action will fail with the error message **You cannot create new documents in folder "..." because there are no document types available for you to use** if its file extension is assigned to a document type that has this open set to **Never**. The PowerWeb user will also not be able to select the document type to create new documents from a template, the same as a PowerUser user.
New document templates	Add template files as described in Create And Edit Document Templates.

Create And Edit Document Templates

All documents that originate in a Meridian vault are created from templates, even if the template is only an empty file with a file extension that determines the application that will be used to add data to the file. However, you should configure document templates that provide users with as much data as possible already in the file. Document templates improve productivity by relieving users from having to create standard information such as headers, footers, title blocks, logos, standard text, and so on. Document templates improve quality by ensuring that all users begin documents from the same set of preconfigured and pre-approved templates. Because the document templates are themselves stored in the vault, they don't have to be maintained on a shared network location.

Each document type can have multiple templates in multiple file formats. For example, a **Drawing** document type may have AutoCAD templates for several sheet sizes, various Autodesk Inventor model templates, and Microsoft Office Visio templates. Because all of the file types are treated as the same document type, users can select any of the templates depending on their needs.

> **Note:**
> When no templates are configured for a document type, the Meridian client applications instead display a list of the applications that are registered with Windows on the user's computer.

When a user creates a new document from a template, Meridian makes a copy of the template file as the new document and then applies the document type's other options to the new document, such as its file name, revision number, and so on.

To create or edit document templates:

1. Using the native application of the template that you want to make, create a new file that contains all of the text, graphics, and other data that you want the template to include.

   Also consider setting options such as page size, printing options, and so on. Save the file with a descriptive name to a temporary location.

   > **Note:**
   > Meridian supports templates in a very basic way (file copies) in order to support the largest variety of applications. Therefore, most file formats that are specific to templates, for example, Microsoft Office Word template (.dotx) or that provide automatic execution, for example, AutoCAD templates (.dwt), are not supported by Meridian. In such cases, save the template file as a normal file before importing it as a Meridian document template.

2. In Configurator, expand **Document Types** in the configuration tree to display the document types.

3. Select the document type that you want to configure.

   The document type's property pages appear in the right pane.
4. Click the **New Document** tab.

   The new document options appear.
5. Click **Edit**.
6. Choose one of the following options:
   - To remove a template from the document type, select it and click **Remove**.
   - To show a template in a new Meridian viewer window, select it and click **View**.
   - To edit an existing template, select it and click **Edit**.

     The **Edit Document Template** dialog box appears, showing the template's configuration options.
   - To create a new document template, click the **Add** button.

     The **New Document Template** dialog box appears.
7. Click options or type values using the descriptions in the following table.
8. Repeat steps 1 through 6 for each template that you want to configure.
9. To export a copy of the selected template's file to a location outside the vault, click **Export** and select a location.
10. Click **OK**.

Document template options

Option	Description
File name	This option only appears when creating new templates. Click the **Browse** button to select the file that you created in step 1 to use as the template.
Display name	Type the name of the template as you want it to appear to users. The name does not have to be the same as the template file name and does not need a file extension.
Name	A default internal name is calculated. Accept the default in most cases.
Description	Type an optional description of this template.
Default extension	Select a file extension from the list for documents created from this template. The file extension does not have to be the same as the file extension of the template file.
To replace file	This option only appears when editing existing templates. Click the **Browse** button to select a file to replace the current template.

Assign Document Types To Imported Documents

To configure the **Import Document** page options:

1. In Configurator, expand **Document Types** in the configuration tree to display the document types.
2. Select the document type that you want to configure.

   The document type's property pages appear in the right pane.
3. On the **Import Document** page, click options or type values using the descriptions in the following table.
4. Click **OK**.

Document import options

Option	Description
Select the file extension of the main part of a hybrid document	This option is only present if the **Hybrid document** option is enabled on the **General** page. From the list, select the file extension of the file type that you want to be the main part of hybrid documents. The file types in the next list may be attached to this file type as subordinate parts. The list includes the file types that are registered in Windows where the Configurator is running. If a file extension is missing from the list, simply type it into the input box. For more information on working with hybrid documents, see the *Hybrid Documents* section of the *Meridian Enterprise User's Guide* .

Option	Description
Files with the following extensions are assigned this document type on import	From the list, select the file extension of each file type that you want to be assigned to this document type (or if the **Hybrid document** option is enabled on the **General** page, attached to the main part of a hybrid document) when documents are imported into the vault (or attached manually by users if the **Hybrid document** option is enabled on the **General** page). The list includes the file types that are registered in Windows where the Configurator is running. If a file extension is missing from the list, simply type it into the input box. Click **Add** to add the extension to the lower list. To delete an extension from the list, select the extension in the lower list and click the **Remove** button. **Note:** To specify the default file extension of documents to import as renditions of existing documents during drag-and-drop operations, set the **DefaultRenditionExtension** setting to the file extension, for example, **.pdf**. This setting can be configured in the **[Vault]** section of the **Application Integration** settings as described in Configure Managed Change.
Default document type	Select this option if you want this document type to be applied to file types that are imported into the vault for which the file extensions are not configured in any document type.

Apply Custom Extensions To a Document Type

Custom user interface extensions can be applied to document types. These extensions may act upon custom properties used by the document type or act upon the documents' content. Any property pages included in the extension will appear in Configurator as property pages in the **Pages** branch of the configuration tree.

> **Note:**
> The extensions that you want to apply must already be registered in the vault configuration. For more information on registering extensions, see Register Custom Interface Extensions.

To configure the **Extensions** page options:

1. In Configurator, expand **Document Types** in the configuration tree to display the existing document types.
2. Select the document type that you want to configure.

   The document type's property pages appear in the right pane.
3. On the **Extensions** page, click options or type values using the descriptions in the following table.
4. Click **OK**.

Custom extension options

Option	Description
Add	To apply a Visual Basic user interface extension to this document type, click the **Add** button, select a custom extension, and click **OK**.
Remove	To remove a custom user interface extension from this document type, select the extension in the list and click the **Remove** button. **Note:** Do not remove the **Document User Interface** or **AutoPages Host** extensions. They are included with all Meridian systems and required.
Up and Down	Click the **Up** and **Down** buttons to arrange the order of the extensions in the list. Their order determines the order in which their property pages display in the Meridian client applications, from left to right.

View the Properties Of a Document Type

You can easily view all of the properties of a document type in Configurator. The **Properties** page lists the properties that are currently applied to the selected document type. There are no configurable options on this page. The properties shown include all of the properties used internally by Meridian for document types as well as the properties of custom extensions, and the custom properties applied to the document type. For more information on property pages and properties, see Property Sets And Properties.

> **Note:**
> Refer to this page for the names of properties when configuring title block and application links.

To view the properties of a document type:

1. In Configurator, expand **Document Types** in the configuration tree and select the document type that you want to edit.

   Its property pages appear in the right pane.

2. Click the **Properties** tab.

   The **Properties** page appears. This page is not editable.

3. Drag the vertical scroll bar to view additional available properties, if any.

> **Note:**
> Add the properties of document types to the **Folders View Columns**, navigation view **Columns**, **My Working Copies View Columns**, and **Search Result Columns** lists for better visibility.

Apply Property Pages To a Document Type

To configure the **Pages** page options:

1. In Configurator, expand **Document Types** in the configuration tree to display the existing document types.
2. Select the document type that you want to configure.

   The document type's property pages appear in the right pane.
3. On the **Pages** page, click options or type values using the descriptions in the following table.
4. Click **OK**.

Property page display options

Option	Description
Show as property page	To show a page as a property page for all documents of this document type, select a page in **Available pages** and click the right arrow button to add it to this list. To remove a property page from this list, select the page and click the left arrow button . After you have selected the appropriate pages, use the up arrow button and down arrow button to arrange the order of the pages in the list. Their order determines the order in which they will display in the Meridian client applications, from left to right.
Show as wizard page	To show a page as a wizard page for all documents of this document type, select a page in **Available pages** and click the right arrow button to add it to this list. To remove a property page from this list, select the page and click the left arrow button . After you have selected the appropriate pages, use the up arrow button and down arrow button to arrange the order of the pages in the list. Their order determines the order in which they will display in the Meridian client applications, from left to right. **Note:** The pages will not be shown when new documents that reside in shared workspace folders are automatically imported into the vault because the **Synchronize automatically** option is enabled for the parent folder. For more information about shared workspaces, see Configure Shared Workspaces.
Commands that show wizard pages	Select the commands that you want to show the wizard pages that you selected in the above list.

Apply Custom Commands To a Document Type

Custom commands you define in Configurator can be applied to document types. Custom commands can also act upon the custom properties assigned to document types.

> **Note:**
> The commands that you want to apply to a document type must already exist in the vault configuration. For more information on creating custom commands, see Create And Edit Custom Commands.

To apply a custom command to a document type:

1. In Configurator, expand **Document Types** in the configuration tree and select the document type that you want to edit.

   Its property pages appear in the right pane.
2. Click the **Commands** tab to display the current command assignments.
3. Click **Edit**.
4. Select the commands to display on the **Document** shortcut menu.
5. Click **OK**.

Configure Title Block Updates

To configure the **Title Blocks** page options:

1. In Configurator, expand **Document Types** in the configuration tree to display the existing document types.
2. Select the document type that you want to configure.

   The document type's property pages appear in the right pane.
3. On the **Title Blocks** page, click the **Edit** button.
4. Click options or type values using the descriptions in the following table.
5. Click **OK**.

Title block update options

Option	Description
Perform automatic title block updates	Select this option if you want title block updates to be performed on this document type under any of the circumstances listed as the other options on this page.
Read title block properties	Select options that represent the circumstances under which you want Meridian properties to be updated from the document's title block. The Meridian properties that are updated are configured as described in Configure Standard Title Block Synchronization.
Write title block properties	Select options that represent the circumstances under which you want the document's title block to be updated from the Meridian properties. The title block attributes that are updated are configured as described in Configure Standard Title Block Synchronization.
Synchronize the title blocks in all layouts	Documents with this type might contain multiple sheets, each of which are a separate layout with a separate title block that has different values. For information about configuring title block synchronization for this document type, see Synchronize Multiple Blocks Per Drawing.

Configure Concurrent Engineering Rules

You can configure a document type so that several people can work on the same document. The **Configure Engineering** tab allows you to determine the way in which documents are locked when concurrent engineering is allowed.

These options apply to new documents created with the document type. Waiting project copies are not created if the document type is changed on an existing document. For example, if you create a document with the **Generic Document** type, change the document type of that document to one with **Serial change with release**, create a project copy and then attempt to create waiting project copy, an additional project copy is created instead of a waiting project copy.

To configure the **Concurrent Engineering** page options:

1. In Configurator, expand **Document Types** in the configuration tree to display the existing document types.
2. Select the document type that you want to configure. The document type property pages appear as tabs in the right pane.
3. On the **Concurrent Engineering** tab, click **Edit**.
4. Select **Allow Concurrent Engineering**.
5. In the **Concurrent engineering option for new documents** pane, select the option you want:
    - **Merge workflow**: Current behavior for merging with master.
    - **Merge workflow without transfer**: Merges workflow, but hides the Transfer to Project option from the user.
    - **Merge project**: Allow multiple project copies to be created.
    - **Serial change with release**: Allow your organization to use waiting lists for project copies.

      Learn more about waiting lists in the *Waiting Lists* article in the *Meridian Enterprise User's Guide*.
6. Click **OK**.

Document Workflow Types

Meridian offers different types of workflows that can be used for various purposes. Users can decide to use one or more of the workflow types depending on the organization's business processes and needs. The workflow types are divided into two major categories: document workflow and project workflow. Within each category are different workflow types that can be used either alone or together with any other workflow type.

The relationships of these workflow types to one another can be seen in the following list:

- Document workflow for the change control of individual documents
  - Working copies (simple check-out/check-in)
  - Document type workflow (basic workflows configured in document types)
  - Workflow definitions (advanced workflows configured in workflow definitions)
- Project workflow for the change control of multiple related documents in groups
  - Project folders (configurable folders assigned to project definitions provided by the Advanced Project Workflow Module.

In the document workflow category are the workflow types document type workflow, workflow definitions, and working copies. Document type workflow and working copies are easy to configure and meet the requirements of the majority of change control processes. Workflow definitions are flexible and powerful enough to meet the most demanding change control process requirements.

The document workflow types control the change of individual documents. Document workflows ensure that the steps required to produce a new revision of a document are executed in the correct order by the correct people. For example, a simple document type workflow might require that a new document revision be reviewed before it can be released. Document revisions can also occur within the prescribed steps of a project workflow that controls the change of an entire set of documents, such as for a project, assembly, subassembly, and so on.

Project workflows control the change of groups of related documents through the life cycle of a project. They ensure that the steps of a project are executed in the correct order by the right people. The documents within a project are revised individually using one of the document workflow types.

For example, a simple project workflow might require that all documents revised for a project be reviewed as a completed set before they can be released for construction or manufacture. Users can create project folders only with the installation of the Meridian Advanced Project Workflow Module.

A typical scenario of combining workflow types is document type workflow for master documents together with document type workflow and workflow definitions in project folders. In this scenario, non-critical, non-project-oriented document types use **Quick Change** to produce new revisions made only by authorized users. Non-critical, project-oriented document types use the basic steps of document type workflow in project folders. Critical, project-oriented document types use the configurable steps of workflow definitions in project folders to update master documents.

Document workflows are described in more detail in the following topics.

Document Type Workflow

Document type workflow is based on a commonly-accepted practice for document change control. But it is still configurable to meet your organization's unique requirements. Document type workflow is a combination of states and transitions between the states.

Workflow states represent steps in the change control process where different actions can be performed on documents by different users. The name of a workflow state also becomes its current **Status** value. Workflow transitions represent specific actions that users can take in the change control process to change a document's state, and thereby its **Status**, from one to another.

An entire workflow, from its start state to an end state, results in one new revision of a document. You configure the workflow using a graphical diagram to represent your workflow process for each document type. One configuration of the workflow is allowed for each document type. The workflow must be followed by users to create new revisions of documents made from that type.

For more information about the capabilities of document type workflow, see Configure Document Type Workflow.

For information about the differences between document type workflow and workflow definitions, see Workflow Definitions.

Workflow Definitions

Workflow definitions give you complete flexibility to configure document workflows to meet your organization's unique requirements. Workflow definitions are similar to document type workflow in the sense that they are both composed of states and transitions. Workflow states represent steps in the change control process where different actions can be performed on documents by different users. The name of a workflow state also becomes its current **Status** value. Workflow transitions represent specific actions that users can take in the change control process to change a document's state, and thereby its **Status**, from one to another. An entire workflow, from its start state to an end state, results in one new revision of a document, more if transitions are also configured to generate new revisions.

The basic difference between document type workflow and workflow definitions is that predefined workflow states and transitions are created automatically for you in document type workflow when you select change-control process options. You can create very configurable workflow states and transitions manually in workflow definitions.

The following table summarizes the other significant differences between workflow definitions and document type workflow.

Workflow type comparison

Workflow Definitions	Document Type Workflow
Advanced workflows	Basic workflows
Completely configurable	Standard engineering workflow options
State and transition names configurable	State and transition names not configurable
Multiple workflows available per document type	One workflow available per document type
More complicated to configure	Easier to configure
Initial workflow manager is configurable	Initial workflow manager is the workflow initiator
Workflow state and transition security configurable	Workflow state and transition security not configurable
Parallel routing configurable	Parallel routing not possible
Multiple to-do persons configurable	Single to-do person

Workflow Definitions	Document Type Workflow
Manual revision creation configurable	Manual revision creation not allowed
Transitions in different workflow definitions can be considered equivalent for batch execution	No transition equivalence
Transition visibility configurable	Transition visibility not configurable
Transitions can be interlocked with project workflows to maintain project integrity	Transitions cannot be interlocked with project workflows
Wizard pages may be shown during transitions to input additional data or control routing	Wizard pages may not be shown during transitions
Transitions can create new revisions	Transitions cannot create new revisions

Note:
Before creating workflow definitions, it can be very helpful to first plan the requirements of each workflow definition using the items in the preceding table.

Creating workflow definitions and configuring each of the items in the preceding table are described in the following topics.

Create And Edit Workflow Definitions

Although workflow definitions have the potential to be quite complicated, you only need to configure the options that your organization's change processes require.

> **Note:**
> Modifying a workflow definition in Configurator while a workflow made from it exists that is active is not allowed. Release the documents first.

To create or edit a workflow definition:

1. In Configurator, expand **WorkFlow Definitions** in the configuration tree to display the existing workflow definitions.
2. Choose between three options:
   - To edit an existing workflow definition, select it and click the **Edit** button.
   - To create a new workflow definition, on the **Edit** menu, select **New Workflow Definition**.

     A new workflow definition is added to the configuration tree and its property pages appear in the right pane.
   - To create a new QuickChange workflow defintion, on the **Edit** menu, select **New QuickChange Workflow Definition**.

     A new QuickChange workflow definition is added to the configuration tree and its property pages appear in the right pane. You can only have one QuickChange workflow definition.
3. Type or select options on the **General** tab using the descriptions in the following table.
4. To restrict the use of this workflow definition to specific users, click the **Privileges** button.

   For more information about security roles, see Security Roles.
5. To modify the workflow, see Draw a Workflow Diagram.
6. Click the **Applies to** tab.

   A list of all document types in the vault appears. By default, all workflow definitions are available for selection with all document types.
7. Select the check box in the **For existing documents** column for each document type for which you want this workflow definition to be applied to existing documents.

   If this check box is not selected, the workflow definition may only be selected for new documents.
8. Click **OK**.

Workflow definition general options

Option	Description
Display name	Type the name of the workflow definition as you want it to appear to users.
Name	A default internal name is calculated. Accept the default in most cases.
Description	Type an optional description.
Initial workflow manager	Select **Current user** if the initial workflow manager will be the person who initiates the workflow. This is the same behavior as document type workflows. Select **Result of this expression** if the initial workflow manager should be calculated when the workflow is initiated. Type a VBScript expression or click the Meridian Enterprise Script Editor button to build a VBScript expression. For information on using VBScript for configuration expressions including their limitations, see the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference*. **Note:** • This option is overruled if the **Workflow state for new documents** option is set for document types that use this workflow definition. • If this option is set, errors can occur if a VBScript event handler attempts to also set the workflow manager.
Use the following expression to calculate the list of possible managers	Select this option if the list of possible workflow managers to which a workflow can be changed should be calculated. If this option is not selected, any vault user can be selected as the workflow manager. Type a VBScript expression or click the Meridian Enterprise Script Editor button to build a VBScript expression. For information on using VBScript for configuration expressions including their limitations, see the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference*. **Note:** This option is overruled if the **Workflow state for new documents** option is set for document types that use this workflow definition.

You may now proceed by configuring each state and transition, as described in the following topics.

Draw a Workflow Diagram

You define the workflow of a workflow definition by first drawing a workflow diagram in Configurator. You can then edit the diagram's symbols to specify the options for the workflow's states and transitions.

> **Note:**
> You cannot add or remove states or transitions for a Quick Change workflow diagram.

To draw a workflow diagram:

1. In Configurator, select the workflow definition in the configuration tree that you want to edit.
2. Click the **States** tab.

   A graphic of the current workflow appears. A simple default workflow that you can edit is created for new workflow definitions.
3. Click the **Edit** button to modify the workflow.
4. Add or remove states and transitions from the workflow graphic using the toolbar buttons to achieve the desired workflow.

   Right-click anywhere in the graphic area to show a shortcut menu from which you can select the **Grid** and **Zoom** tools. The toolbar buttons are described in the following table.

Workflow editor toolbar buttons

Icon	Name	Description
	Select	Use to select and manipulate the workflow objects. Select objects and drag them when the cursor becomes a four-headed arrow to move them. Select an object to display its handles ▫. Select and drag handles when the mouse cursor looks like this to stretch the object. Double-click an object to view its properties. Drag a fence with this tool to select multiple objects.
	Create New Intermediate State	Creates an intermediate (not start or end) state. With this tool selected, click the location in the workflow where you want to add a new state. For information about configuring the many workflow state options of a workflow definition, see Create And Edit States.

Icon	Name	Description
	Create New End State	Creates a workflow end state. With this tool selected, click the location in the workflow where you want to add an end state. For information about configuring the many workflow state options of a workflow definition, see Create And Edit States.
	Create New Transition	Creates a transition between two states. With this tool selected, click the source state and then click the destination state. If you click in empty space before clicking the destination state, a vertex is added to the transition line. This is useful to route transitions around other state shapes and transitions. Click the same state as both the source state and end state to create a forwarding transition. Forwarding transitions are useful to route documents to a different to-do person without changing the current state. The transition will still be added to the document's **Comment** log for tracking and auditing purposes. For information about configuring the many workflow transition options of a workflow definition, see Create And Edit Transitions.
	View Properties	Shows state and transition properties. You can also double-click an object to show its properties.
	Delete Selection	Deletes states or transitions from the workflow. You cannot delete the start state. Select the objects to delete and then click this button. A confirmation dialog will appear.

5. Click **OK**.

Create And Edit States

A workflow definition state represents a step in the change control of a workflow. Its options control:

- Who has access to documents
- What they can do with the documents
- How revisions are created (document workflows only)
- Automatic property assignments.

You cannot create new states for the QuickChange workflow definition. You can only edit the configuration options of the existing states.

The configuration options for QuickChange workflow states are described in the following articles:

- Assign Users To a Workflow State
- Assign Privileges To a Workflow State
- Allow New Revisions In a Workflow State
- Assign Property Values In a Workflow State

1. In Configurator, expand **Project** or **Workflow Definitions** in the configuration tree.
2. Select the workflow definition you want to edit.

   Its property pages appear in the right pane.
3. Click the **States** tab to display the current workflow.
4. Click **Edit**.
5. Choose between two options:
   - To create a new state, use the tools described in Draw a Workflow Diagram (document workflow) or Creating a project workflow (project workflow).
   - To edit a state, double-click the state.

     The state's **Properties** page appears.
6. On the **General** page, click options or type values using the descriptions in the following table.
7. Click the **To-Do Persons** tab and configure options as described in Assign Users To a Workflow State.
8. Click the **To-Do Person Privileges** tab and configure options as described in Assign Privileges To a Workflow State.

9. Click the **Revision Number** tab and configure options as described in Allow New Revisions In a Workflow State.
10. Click the **Property Assignments** tab and configure options as described in Assign Property Values In a Workflow Transition.
11. Click **OK**.

    The **Properties** dialog box closes.
12. Click **OK**.

Workflow definition state options

Option	Description
Display name	Type the name of the state as you want it to appear to users. This name should reflect the purpose of the state in the workflow.
Name	A default internal name is calculated. Accept the default in most cases.
Color	Select a color for the state shape. We recommend that you use standard colors for similar states in all workflows. This makes it easier for users to identify the states' purposes.
Consensus transition	Select a transition from the list that will require the consensus of all to-do persons before the transition will be executed. This is useful for parallel review states that require the approval of multiple users. As each person executes the transition, their name is removed from the list of users in the **By** workflow property. If one to-do person executes any other transition, the names of all to-do persons are removed. This option is not available for start and end states.
Document access	Select an access option from the list. This option determines the editing ability of the users when the document is in this state: • **Decision**: The to-do persons may run transitions only. • **Review**: The to-do persons may redline the document and run transitions. • **Edit**: The to-do persons may edit or redline the document and run transitions. This option is not available for start and end states.
Allow multiple Managers/To-Do Persons	Controls whether or not the workflow can have multiple managers assigned. If this option is enabled, an approval consensus of all managers is required for the workflow to proceed through the transition selected for the **Consensus Transition** option (above) to the next state. Optional. Select this option if multiple users may be assigned to a document routed to this state, such as for parallel review. This option is not available for start and end states.

Option	Description
Status text	Type a value for the **Status** property when in this state. This option is not available for start states.
To-do action	Configurable text to display as the task to be performed by the current To Do Person when in this state. Optional.
Entering document log comments is mandatory	If enabled, comments are mandatory. If disabled, comments can be entered but they are not mandatory.
Send to Meridian Portal for revision	If selected, and a user transitions to this workflow state in PowerUser or PowerWeb, the usual pane that allows you to select todo-persons is replaced with the **Select recipient in Meridian Portal project** pane where they can select the Meridian Portal users who are to receive the documents. This option is only available if the **Document access** option of the destination state is set to **Edit**. When using this option, make sure the Explorer synchronization job for the vault has the **Synchronize draft revision option** enabled. To learn more about this option, see the *Configure Synchronization Options* section of the *Meridian Enterprise Server Administrator's Guide*. This option is not available for QuickChange Workflow Definitions.

The project or workflow definition is now ready to be used.

Assign Users To a Workflow State

The **To-Do Persons** page options control which users may be selected when documents are routed to the current state.

To assign users to a workflow state:

1. In Configurator, expand **Workflow Definitions** in the configuration tree and select the workflow definition you want to edit.

   Its property pages appear in the right pane.
2. Click the **States** tab to display the current workflow.
3. Click **Edit**.
4. Double-click the state that you want to edit.

   The state's **Properties** page appears.
5. Click the **To-Do Persons** tab.

   The current to-do persons options appear.
6. Select or type options using the descriptions in the following table to specify the user names that will be set in the workflow's **To-Do Person (By)** property when a document is routed to the current state.

Workflow definition state user options

Option	Description
Current workflow managers	The names in the **Manager** workflow property.
Current To-Do Persons	The names in the **To-Do Person (By)** workflow property.
Current user	The names in the **Manager** workflow property.
Other users	Other users determined by the following options.
Calculate the following expression	Select this option to calculate the names of the to-do persons. Type a VBScript expression or click the Meridian Enterprise Script Editor button to build a VBScript expression. For information on using VBScript for configuration expressions including their limitations, see the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference*.

Option	Description
Select manually	Allows the user performing the transition to manually select the to-do persons.
From the list of users calculate by the following expression	Select this option to calculate the names of the to-do persons that the user will be allowed to select. Type a VBScript expression or click the Meridian Enterprise Script Editor button to build a VBScript expression. For information on using VBScript for configuration expressions including their limitations, see the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference*.
Include the current user in the list	Includes the name of the user performing the transition in the list of available users. This allows users to select themselves.
Entering document log comments is mandatory	If enabled, comments are mandatory. If disabled, comments can be entered but they are not mandatory.

7. Click **OK**.

   The **Properties** dialog box closes.

8. Click **OK**.

Assign Privileges To a Workflow State

The **To-Do PersonsPrivileges** page options specify any additional privileges that users will have for documents that are routed to the current state. These privileges are in addition to the privileges defined for the users' security role that is assigned to the folder containing the documents. This can be useful to grant additional privileges to users that do not normally have them, for the purpose of participating in the workflow.

For example, if a user does not have the **Edit in Application** privilege because their role does not include that privilege, selecting the **Edit in Application** privilege on the **To-Do PersonsPrivileges** page grants the user that privilege for documents in this state only, regardless of the current folder and the user's security role. However, the reverse is not true. Privileges that are not selected on this page are not revoked if the user's current security role grants the privileges.

To assign privileges to a workflow state:

1. In Configurator, expand **Workflow Definitions** in the configuration tree and select the workflow definition you want to edit.

   Its property pages appear in the right pane.
2. Click the **States** tab to display the current workflow.
3. Click **Edit**.
4. Double-click the state that you want to edit.

   The state's **Properties** page appears.
5. Click the **To-Do Persons Privileges** tab.

   The current to-do persons privileges options appear.
6. Select the additional privileges that will be granted to users in this state.
7. Click **OK**.

   The **Properties** dialog box closes.
8. Click **OK**.

Allow New Revisions In a Workflow State

Users may be allowed to create new revisions of document manually during specific workflow states. These revisions are irrespective of new revisions created by the document type definition.

To allow new revisions to be created in a workflow state:

1. In Configurator, expand **Workflow Definitions** in the configuration tree and select the workflow definition you want to edit.

   Its property pages appear in the right pane.
2. Click the **States** tab to display the current workflow.
3. Click **Edit**.
4. Double-click the state that you want to edit.

   The state's **Properties** page appears.
5. Click the **Revision Number** tab.

   The current manual revision number options appear.
6. Click options or type values using the descriptions in the following table.
7. Click **OK**.

   The **Properties** dialog box closes.
8. Click **OK**.

Workflow definition state revision options

Option	Description
Allow manual creation of revisions	Select this option to allow users to manually create intermediate revisions during the workflow of documents in this workflow state.
Use the number format of the document type	For information about configuring the number format of revision numbers, see Configure Document Revision Numbers.

Option	Description
Use this expression	Select this option to calculate the revision number. Type a VBScript expression or click the Meridian Enterprise Script Editor button to build a VBScript expression. For information on using VBScript for configuration expressions including their limitations, see the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference*.

Assign Property Values In a Workflow State

Each state in a workflow can assign or change property values when projects or documents are routed to that state. Property assignments can be useful for establishing defaults, due dates, and other metrics that depend on the workflow state itself.

To assign property values in a workflow state:

1. In Configurator, expand **Project** or **Workflow Definitions** in the configuration tree and select the workflow definition you want to edit.

   Its property pages appear in the right pane.
2. Click the **States** tab to display the current workflow.
3. Click **Edit**.
4. Double-click the state that you want to edit.

   The state's **Properties** page appears.
5. Click the **Property Assignments** tab.

   The current property assignments appear.
6. Choose one of the following options:
7. Use the **Add**, **Remove**, and **Remove All** buttons to configure the options described in the following table.
   - Double-click any cell to display the **Property** list for the next available property assignment.
   - The **Remove** and **Remove All** commands are also on the shortcut menu that is shown by right-clicking a property assignment.
   - Clearing the check box next to a property name is equivalent to clicking the **Remove** button. The assignment will be removed when you click the **OK** button.
8. Click **OK**.

   The **Properties** dialog box closes.
9. Click **OK**.

Workflow definition state property assignment options

Option	Description
Property	Select a property to assign a value when this state is achieved.
Value	Type a new value to assign to the property when this state is achieved.

Note:
Property assignments configured on workflow transitions override any property assignments configured on workflow states for the same property. For example, assume that a transition named **Release** routes to a state named **Issued**. If both the transition and the state are configured to assign different values to the same property, the property assignment on the **Release** transition prevails over the property assignment on the **Issued** state.

Create And Edit Transitions

Each transition in a workflow represents the change in an engineering project from one phase to another. The transition can implement rules that force the workflow to progress in a predetermined path. These rules can be based on:

- Properties of the document or project definition itself
- VBScript expressions that evaluate any system properties
- The status of document workflows or other project definition workflows

When transitions occur, they can assign project property values and display custom wizard pages to prompt users for required and optional information.

A workflow definition transition is an action that users run to move documents from one workflow state to another during the revision of a document. Its options control:

- Which transitions are equivalent within a batch of documents
- Local workspace unlocking of documents
- When transitions are visible to users
- When transitions can be executed and who can run them
- When the transition can be executed
- How it can be interlocked with the workflows of individual documents
- Who will perform work in the next state
- Wizard pages that appear for additional input
- How revisions are created
- Automatic property assignments

> **Note:**
> You cannot create new transitions for the QuickChange workflow definition. You can only edit the configuration options of the existing transitions.
>
> The configuration options for QuickChange workflow transitions are described on the following pages:
>
> - Configure Transition Visibility
> - Configure Transition Authorization
> - Create New Revisions In a Workflow Transition
> - Assign Property Values In a Workflow Transition

To create or edit a workflow definition transition:

1. In Configurator, expand **Workflow Definitions** in the configuration tree.
2. Select the workflow definition you want to edit.

   Its property pages appear in the right pane.
3. Click the **States** tab to display the current workflow.
4. Choose between two options:
   - Click the **Edit** button to modify the workflow.
   - To create a new transition, use the tools described in Draw a Workflow Diagram (document workflow) or Create a Project Workflow (project workflow).
5. To edit a transition, double-click the transition.

   The transition's **Properties** page appears.
6. On the **General** page, click options or type values using the descriptions in the following table.
7. Click **OK**.

   The **Properties** dialog closes.
8. Click **OK**.

Workflow definition transition general options

Option	Description
Display name	Type the name of the transition as you want it to appear to users. This name should reflect the purpose of the state in the workflow.
Name	A default internal name is calculated. Accept the default in most cases.
Icon	Select an icon to be shown next to this transition's name in the Meridian client applications.
Description	Type an optional description.
All transitions to the same destination state	The transitions of all items in the batch being routed to the same destination state will be executed. For more information, see Transition Equivalence.
Transitions with the same equivalence tag	The transitions of all items in the batch with the same equivalence tag will be executed. Type the tag in the input box. For more information, see Transition Equivalence.

Option	Description
All transitions from the same source state	The transitions of all items in the batch being routed from the same source state will be executed. For more information, see Transition Equivalence.
No other transition	No other transitions will be executed in the batch. For more information, see Transition Equivalence.
Release project copies of documents as master revisions	If the Meridian Advanced Project Workflow Module is installed and this document is a project copy, when this transition is executed the document is also released as a new revision of the master document from which it was copied in addition to releasing the document as a new revision of itself.
Update rendition	Generates a document rendition when this transition occurs. The new rendition will replace an existing rendition if it exists. This option is ignored if renditions are not generated for the vault (the **Use renditions option** is cleared as described in Configure General Vault Settings.)
Disable notification	If this transition is included in the actions of an event notification as described in Configure Event Notifications, disables sending notification email messages when this transition occurs.

Transition Equivalence

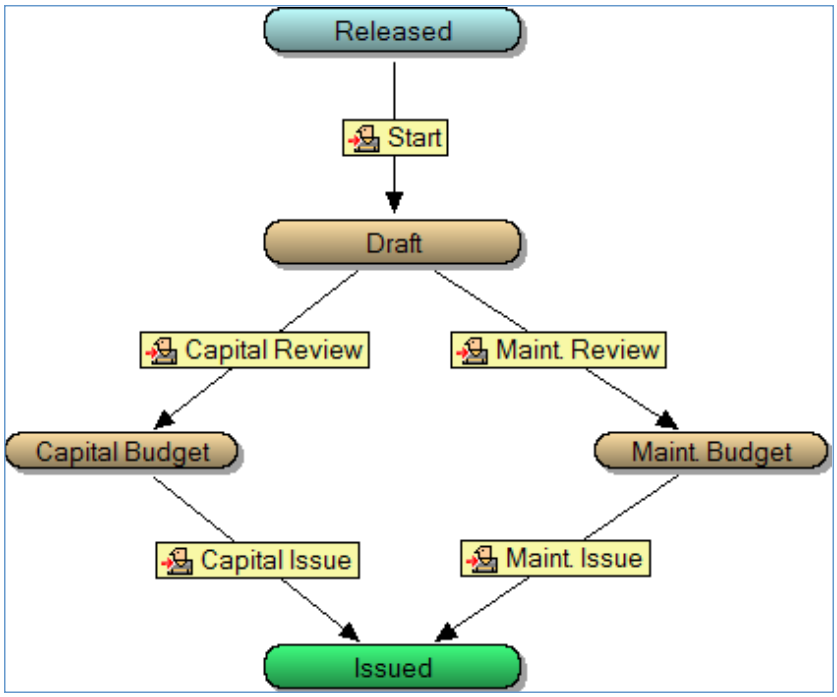
Transition equivalence is the ability to run the transitions of a batch of documents all at the same time, even if the documents are currently in different states or different workflows. Transition equivalence makes multiple transitions equivalent in terms of their effectivity on the change control of documents. Without transition equivalence, a batch of documents in different states cannot be routed at the same time. Instead, each document must be routed individually with its valid transitions.

Transitions can be made equivalent based on the following conditions:

- They have the same source state.
- They have the same equivalence tag.
- They have the same destination state.

An equivalence tag is simply a keyword that the transitions have in common. Equivalence tags are useful if the transitions cannot meet either of the other conditions, that is, the same source or destination states.

For example, consider the workflow definition in the following figure. The transitions **Capital Issue** and **Maint. Issue** have both been configured with the equivalence tag **Issue** (not shown).



If a batch of documents contains some that are in the state **Capital Budget** and some that are in **Maint. Budget**, they can all be routed to the **Issued** state in one batch because they have the same equivalence tag. Incidentally, they could also be routed if the transition equivalence options of both transitions were set to **All transitions to the same destination state.**

Configure Transition Visibility

Not all workflow transitions may be applicable for all documents, current property values, or other conditions. The **Visibility** page contains options that control when a transition is visible for users to select.

To configure transition visibility:

1. In Configurator, expand **Workflow Definitions** in the configuration tree and select the workflow definition you want to edit.

   Its property pages appear in the right pane.
2. Click the **States** tab to display the current workflow.
3. Click **Edit**.
4. Double-click the transition the transition that you want to configure.

   The transition's **Properties** page appears.
5. On the **Visibility** tab, click options or type values using the descriptions in the following table.
6. Click **OK**.

   The **Properties** dialog box closes.
7. Click **OK**.

Workflow definition transition visibility options

Option	Description
Apply the following filters to show the transition	Select this option to configure property value conditions that must be met to show the transition. 1. Click **Add**. 2. Enable Show system properties to show the system properties in the **Property** list in addition to the custom properties. Double-click any cell to create a new condition using the default options. 3. In the **Match Scope** column, select either **selected document** or **Never**. 4. In the **Property** column, select the property to be evaluated. 5. In the **Condition** column, select the condition to evaluate. 6. In the **Value** column, type the value to evaluate. 7. To remove a condition, select it and click **Remove** or clear its check box. Clearing the check box next to a condition **Name** has the same effect as clicking the **Remove** button. The condition is removed when you click the **OK** button. 8. To remove all current conditions, click **Remove All**. You will also find the **Remove** and **Remove All** commands on the shortcut menu shown by right-clicking a condition. Select **All of these criteria** if all (Boolean AND operation) of the property value conditions must be met for the transition to be shown. Select **Any of these criteria** (Boolean OR operation) if all of the property value conditions must be met for the transition to be shown.

Note:
The options configured on this page are evaluated together with the options configured on the **Authorization** page to determine the effective visibility of a transition. For more information about transition visibility options, see Configure Transition Authorization.

Configure Transition Authorization

If not all workflow transitions should be available all of the time or for all users, you can configure the **Authorization** page contains options to control when users are allowed to run the transition.

To configure transition authorization:

1. In Configurator, expand **Workflow Definitions** in the configuration tree and select the workflow definition you want to edit.

   Its property pages appear in the right pane.
2. Click the **States** tab to display the current workflow.
3. Click **Edit**.
4. Double-click the transition that you want to configure.

   The transition's **Properties** page appears.
5. On the **Authorization** tab, click options or type values using the descriptions in the following table.
6. Click **OK**.

   The **Properties** dialog closes.
7. Repeat steps 4 to 6 for each transition that you want to configure.
8. Click **OK**.

Workflow definition transition authorization options

Option	Description
To allow executing the transition, this expression must be True	Select this option to type a VBScript expression that must be met to show the transition. Type a VBScript expression or click the Meridian Enterprise Script Editor button to build a VBScript expression. For information on using VBScript for configuration expressions including their limitations, see the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference*.
Allow the transition for members of these groups	Select this option to restrict the execution of this transition to the selected Meridian groups. Select the groups that you want to be able to run this transition.

Option	Description
Allow the transition for users with these roles	Select this option to restrict the execution of this transition to members of the selected Meridian security roles. Select the roles that you want to be able to run this transition.
If the user is not allowed to run the transition, show this message	Type text that will be shown if the VBScript expression evaluates to **False**.
Require electronic signature	If the Meridian FDA Module is enabled and configured, enable this option if you want to require users to enter their electronic signature credentials to run this transition.

Note:
The options configured on this page are evaluated together with the options configured on the **Visibility** page to determine the effective visibility of a transition. For more information about transition visibility options, see Configure Transition Visibility.

Interlock a Document Workflow With a Project Workflow

Workflow transition interlocks are a feature provided by the Meridian Advanced Project Workflow Module. If the vault that you are configuring does not have the module installed, you can disregard the **Interlocks** page.

Interlocks are rules based on the values of certain properties of project folders or of documents. The **Interlocks** page of a workflow definition determines the validity, and therefore the visibility, of a document workflow transition to be executed. The validity is determined by the interlock definition and should be based on the organization's change control processes.

Interlocks are defined in a Meridian Advanced Project Workflow project definition and are applied to the transitions of a project workflow definition or a document workflow definition. The **Interlocks** page of a workflow definition's transition connects an interlock's definition to a document workflow definition. Since interlocks are independent of any specific workflow transition, they can be used with any workflow transition.

To configure the **Interlocks** page options:

1. In Configurator, expand **Workflow Definitions** in the configuration tree and select the workflow definition you want to edit.

   Its property pages appear in the right pane.
2. Click the **States** tab to display the current workflow.
3. Click **Edit**.
4. Double-click the transition that you want to configure.

   The transition's **Properties** page appears.
5. Click the **Interlocks** tab.

   The current interlocks appear.
6. Click **Add**.
7. In the **Name** column, type the name of an existing interlock listed on the **Interlocks** tab of the Meridian Advanced Project Workflow Module project definition in which the interlock is defined.

   This specifies to which project definitions this workflow definition will be interlocked.
8. In the **Location** column, select **Parent Project** or **Topmost Project** to specify to which projects this workflow definition will be interlocked.
9. In the **Default Result** column, select **True** or **False** to specify that the transition will be visible (True) or invisible (False) by default if the interlock is not satisfied.

10. Choose between two options:
    - Select **All of these criteria** if all (Boolean AND operation) if the interlocks must be satisfied for the transition to be shown.
    - Select **Any of these criteria** (Boolean OR operation) if all of the interlocks must be satisfied for the transition to be shown.
11. To remove an interlock, select it and click **Remove** or clear its check box.

    Clearing the check box next to an interlock **Name** is the same as clicking the **Remove** button. The condition is removed when you click the **OK** button.
12. To remove all current interlocks, click **Remove All**.

    You will also find the **Remove** and **Remove All** commands on the shortcut menu shown by right-clicking an interlock.
13. Click **OK**.

    The **Properties** dialog closes.
14. Click **OK**.

Assign Users To a Workflow Transition

The **To-Do Persons** options determine which users can run the current transition. These options override the **To-Do Persons** options of the destination state.

> **Note:**
> This property page only appears if the **To-Do Persons** option **Other users** is selected for the destination state as described in Assign Users To a Workflow State.

To assign users to a workflow transition:

1. In Configurator, expand **Workflow Definitions** in the configuration tree and select the workflow definition you want to edit.

   Its property pages appear in the right pane.
2. Click the **States** tab to display the current workflow.
3. Click **Edit**.
4. Double-click the transition that you want to configure.

   The transition's **Properties** page appears.
5. On the **To-Do Persons** page, click options or type values using the descriptions in the following table.
6. Click **OK**.

   The **Properties** dialog closes.
7. Click **OK**.

Workflow definition transition user options

Option	Description
Override destination state settings	Select this option to specify to-do persons that override the **To-Do Persons** option **Other users** selected for the destination state as described in Assign Users To a Workflow State.
Calculate the following expression	Select this option to calculate the names of the to-do persons. Type a VBScript expression or click the Meridian Enterprise Script Editor button to build a VBScript expression. For information on using VBScript for configuration expressions including their limitations, see the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference*.
Select manually	Allows the user performing the transition to manually select the to-do persons.

Option	Description
From the list of users calculated by the following expression	Select this option to calculate the names of the to-do persons that the user will be allowed to select. Type a VBScript expression or click the Meridian Enterprise Script Editor button to build a VBScript expression. For information on using VBScript for configuration expressions including their limitations, see the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference*.
Include the current user in the list	If enabled, allows the list of available users (as calculated by the other options) to include the name of the user performing the transition. This is so that they can select themselves as the to-do person. If disabled, the name of the user performing the transition is filtered out of the list of available users.
Entering document log comments is mandatory	If enabled, comments are mandatory. If disabled, comments can be entered but they are not mandatory.

Apply Property Pages To a Workflow Transition

When a document is routed through a workflow based on a workflow definition, wizard pages can be shown when certain transitions are executed to request information from the user.

The wizard pages that you want to apply must already be created, as described in Create a New Property Page.

The values on a wizard page that is assigned to a workflow transition will be applied to the latest released revision of the document, not to the unreleased revision in the workflow. This can seem counter intuitive. The values are assigned before the transition executes that creates the new revision.

To apply property pages to a workflow transition:

1. In Configurator, expand **Workflow Definitions** in the configuration tree and select the workflow definition you want to edit.

   Its property pages appear in the right pane.
2. Click the **States** tab to display the current workflow.
3. Click **Edit**.
4. Double-click the transition that you want to configure.

   The transition's **Properties** page appears.
5. On the **Pages** page, select pages in **Available pages** and click the right arrow button to add them to the **Show as wizard page** list.

   To remove a wizard page from the list, select the page and click the left arrow button .
6. After you have selected the appropriate pages for the transition, use the up arrow button and down arrow button to arrange the order of the pages in the list.

   Their order determines the order in which they will display in the Meridian client applications, from left to right.
7. Click **OK**.

   The **Properties** dialog closes.
8. Click **OK**.

Create New Revisions In a Workflow Transition

New revisions of documents can be created automatically during specific workflow transitions. These revisions are irrespective of new revisions created by the document type definition.

To create new revisions in a workflow transition:

1. In Configurator, expand **Workflow Definitions** in the configuration tree and select the workflow definition you want to edit.

   Its property pages appear in the right pane.
2. Click the **States** tab to display the current workflow.
3. Click **Edit**.
4. Double-click the transition the transition that you want to configure.

   The transition's **Properties** page appears.
5. On the **Revision Number** tab, click options or type values using the descriptions in the following table.
6. Click **OK**.

   The **Properties** dialog box closes.
7. Click **OK**.

Workflow definition transition new revision options

Option	Description
Create a new revision when this transition is executed	Select this option to create a new revision when this transition is executed. Otherwise, no revision is created. There is no option for users to manually create revisions when executing a transition. If you want to give users this choice, consider enabling the **Allow manual creation of revision** option of the destination state instead.
New revision number	Select **Use this expression** to calculate the revision number. Type a VBScript expression or click the Meridian Enterprise Script Editor button to build a VBScript expression. For information on using VBScript for configuration expressions including their limitations, see the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference*.

Assign Property Values In a Workflow Transition

Each transition in a workflow can be assigned initial or changed property values when that transition occurs. Property assignments can be useful for establishing due dates and other metrics that depend on the workflow transition itself.

1. In Configurator, expand **Project** or **Workflow Definitions** in the configuration tree and select the workflow definition that you want to edit.

   Its property pages appear in the right pane.
2. Click the **States** tab to display the current workflow.
3. Click **Edit**.
4. Double-click the transition that you want to configure.

   The transition's **Properties** page appears.
5. Click the **Property Assignments** tab.

   The current property assignments for the transition appear.
6. Use the **Add**, **Remove**, and **Remove All** buttons to configure the options described in the following table.
   - Double-click any cell to display the **Property** list for the next available property assignment.
   - The **Remove** and **Remove All** commands are also on the context menu by right-clicking a property assignment.
   - Clearing the check box next to a property name is equivalent to clicking the **Remove** button. The assignment will be removed when the **OK** button is clicked.
7. Click **OK**.
8. Click **OK**.

Workflow definition transition property assignment options

Option	Description
Property	Select a property to assign a value when this transition occurs. Enable Show system properties to show the system properties in the **Property** list in addition to the custom properties.

Option	Description
Value	Type a value to assign to the property when this transition occurs. You can include any of the following system variables in a value to make the property more specific. • **%CURRENTUSER%**: Name of the current user. • **%CURRENTDATE%**: Current date expressed as a date data type that can be used to calculate past or future dates by adding or subtracting days, for example, %CURRENTDATE% + 30. • **%CURRENTDATETIME%**: Effective date and time of the vault database expressed in Greenwich Mean Time (GMT).

Property assignments configured on workflow transitions override any property assignments configured on workflow states for the same property. For example, assume a transition named **Release** routes to a state named **Issued**. If both the transition and state are configured to assign different values to the same property, the property assignment on the **Release** transition will prevail over the property assignment on the **Issued** state.

Electronic Signatures

Meridian Enterprise provides built-in electronic signature functionality. An *electronic signature* is an electronic indication that a person adopts the contents of an electronic message. For comparison, a *digital signature* is a digitized image of a person's handwritten signature. Meridian produces an electronic signature by authenticating the identity of the person signing the document.

> **Note:**
> Electronic signatures are not supported with SAML authentication.

When an electronic signature is required, users are shown a dialog that prompts them to type their credentials. The user must type the same Windows account name and password as the account currently logged on to Windows. Authentication only succeeds if the credentials match.

If the user is successfully authenticated, then configurable electronic signature information is stored in the document metadata. Both successful and unsuccessful electronic signature attempts are recorded in the audit log. Electronic signature information can be manifested on the signed document's rendition or on an attached signature page using Accruent Publisher.

Electronic signatures can be required by and are configured in the transitions of the workflow applied to each document type. Documents must proceed through a workflow to be electronically signed. The persons authorized to run a transition are the persons who will be prompted to sign the documents. If a user executes a workflow transition that requires electronic signature for a batch of documents, their user name can be remembered from their authentication to open the vault.

Configuring electronic signatures involves tasks that are performed in several Accruent products. The configuration tasks are listed in the order in which they should be performed in the following table and are described in the remainder of this guide and in other guides. Use the information in the **Topic Reference** column in the following checklist to find the configuration information for each task. You can track your progress by printing this checklist and placing a check mark in the **Completed** column as you finish each task.

Electronic signature configuration checklist

Completed	Task	Topic Reference
	Read this chapter completely to familiarize yourself with the steps.	Electronic Signatures

Completed	Task	Topic Reference
	Verify whether your organization requires that persons who sign documents electronically must read and acknowledge a disclaimer. If so, obtain a copy of the text from your organization's legal department.	Your organization's standard operating procedure
	Configure electronic signature authentication	Configure Authentication
	Configure the data that will be saved for each electronic signature, when it is saved, and when it is removed.	Configure the Electronic Signature Data
	If required, create a custom property page to show your organization's electronic signature disclaimer. Following is an example of such a disclaimer: "You are about to electronically sign this document. By clicking the **Finish** button and then entering your user name and password, you are verifying the content and property values (metadata) of the document congruent with your responsibilities and are approving it for its intended use, replacing any current versions in existence. This electronic signature is the legally binding equivalent of your handwritten signature."	Create a New Property Page
	If required, assign the electronic signature disclaimer page that you created to the workflow transitions that require signatures.	Configure Document Type Workflow Configure Transition Authorization
	Optionally, configure a watermark or signature page to show the electronic signature data with document renditions.	See the *Post-Rendition Processing* article in the *Meridian Enterprise Server Administrator's Guide*.

Note:
Enabling electronic signatures for a document type makes properly configuring the document type more important than ever because the signatures can be legally binding. Therefore, we recommend that you review the configuration of the vault's document types before enabling electronic signatures.

If a document type is configured to use document type workflow, any user with access to that document type will be able to sign the document during the selected transitions. If a document type is configured to use workflow definitions instead, any user who satisfies the authorization options that are configured for a transition will be able to sign the document during that transition.

Your review might require reconfiguration of the document types or the creation of additional workflow definitions in order to restrict the ability to create electronic signatures to only the users that are authorized to do so.

Configure Authentication

By default, Meridian Enterprise identifies a user by single sign-on (the current user's Windows account name) and does not prompt the user to log on when they open a vault. Meridian also supports explicit authentication to open a vault with any Meridian Enterprise client application including Application Integration, the application links, and Local Workspace actions.

When authentication is required, users are shown the **Open Vault** dialog. The user must type the same Windows account name and password as the account currently logged on to Windows. Authentication only succeeds if the credentials match. If so configured, failure to correctly type the credentials within the allowed number of attempts will prevent the user from opening any vault until the correct credentials are typed.

> **Note:**
> Enabling operating system authentication requires that the audit log also be enabled to log the authentication results. The audit log can be stored in a database separate from Meridian Enterprise as described in *Configure the Audit Log Connection* in the *Meridian Enterprise Administrator's Guide*. If your environment also includes Meridian Enterprise Server, the audit log can also be stored in its database as described in the *Configure the connection to Meridian Enterprise Server* article in the *Meridian Enterprise Administrator's Guide*.

To configure a vault's authentication settings:

1. In Configurator, expand **Environment** in the configuration tree and select **Vault Settings**.

   The vault's settings appear in property pages in the right pane.
2. Click the **Authentication** tab.

   The current authentication options are shown.
3. Click **Edit**.
4. Click options or type values using the descriptions in the following table.
5. Click **OK**.

Authentication options

Option	Description
Authenticate logon credentials with the operating system	Authenticates the user's credentials with the operating system to authorize opening the current vault. **Note:** If this option is enabled after a vault has already been published as a web location for PowerWeb, access will be denied to users until the vault is republished as a PowerWeb location.
Logon retries	The number of authentication attempts to allow users before locking their account.
Lock user when all retries have failed	Locks the user's account to prevent further access to documents. The identity of the user or their credentials should then be verified by a System Administrator. The account must be unlocked using Meridian Enterprise Administrator or the Meridian Enterprise Server Administration Console tools.
Default domain name	The Windows domain within which the users of this vault should be authenticated. If this option is left blank, users must enter the domain name when they enter their user name, for example, **MYDOMAIN\MyName**.
Remember user name	Retains the user name (but not the password) for subsequent authentication requests.
Use electronic signatures on workflow transitions	Requires electronic signatures when workflow transitions are performed for which signatures have been enabled as described in Configure Document Type Workflowand Configure Transition Authorization.
Show reason page	If enabled, shows a dialog box when documents are electronically signed that contains configurable disclaimer text and prompts the user to select a reason why they are signing the documents.
This lookup list	The name of an existing lookup list from which to show the reasons for signing.
This expression	A VBScript expression that returns an array of reason strings to show for signing. **Note:** The expression should not reference document or folder objects because the dialog box is shown only once for the entire batch of documents even if only one is selected and it is shown before the selection is processed. The vault object is available but provides properties and methods that are of limited value in this scenario.

Option	Description
Disclaimer	Text to show in the dialog box, for example: By entering your user ID and password, you are verifying this document's content and properties congruent with your responsibilities. As such, you have reviewed and are approving the document for it's intended use.
Remember user name for batches of electronic signatures	Retains the user name (but not the password) for each electronic signature required by a batch of documents.
Use SiteCache Client to check electronic signatures	If selected, the user will be prompted to authenticate via Windows before their electronic signature will be applied. If the user has disabled site cache mode, they will be unable to complete the workflow transition.

Important!

If the **Authenticate logon credentials with the operating system** option is enabled, the vault is published as a PowerWeb location, and the website is configured with **Basic authentication**, unauthorized user access to the vault cannot be prevented completely. We do not recommend using that authentication method and recommend that it be set to **Windows integrated authentication** instead.

Configure Electronic Signatures For Document Type Workflow

When a document type's workflow is set to **Use built-in workflow**, you can configure which transitions will require an electronic signature.

To configure electronic signature options for a document type workflow:

1. In Meridian Enterprise Configurator, expand **Document Types** in the configuration tree and then select the document type that you want to configure.

   The workflow definition's property pages appear.

2. Click the **Workflow** tab.

   The workflow options appear. If the workflow graphic becomes too large to see as you set the options, click the **Zoom to Fit** button to resize the graphic.

3. Click **Edit**.
4. Click options or type values using the descriptions in the following table.
5. Click **OK**.

Document type workflow options

Option	Description
Require electronic signatures on the following transitions	Select the transitions upon which users must be authenticated before the selected document can proceed to the next state of the workflow. Users are authenticated as described in Configure Authentication. If you have configured a custom wizard page (a disclaimer, for example) and want it to show before the user is prompted to sign the documents, select it from the **Page to show prior to signature** list.

Configure Electronic Signatures For Workflow Definitions

When a document type's workflow is set to **Use workflow definitions**, you can configure which transitions will require the electronic signature.

> **Note:**
> An electronic signature cannot be required on transitions that start from the **Released** state. No changes to the document are yet possible and so the signature would be meaningless.

1. In Configurator, expand **Workflow Definitions** in the configuration tree and select the workflow definition you want to edit.

   Its property pages appear in the right pane.
2. Click the **States** tab to display the current workflow.
3. Click **Edit**.
4. Double-click the transition that you want to configure.

   The transition's **Properties** page appears.
5. On the **Authorization** page, click options or type values using the descriptions in the following table.
6. Click **OK**.
7. Repeat steps 4 to 6 for each transition for which you want to configure electronic signatures.
8. Click **OK**.

Workflow definition transition authorization options

Option	Description
Require electronic signature	Requires user authentication before the selected document can proceed to the next state of the workflow. Users are authenticated as described in Configure Authentication.

> **Note:**
> To display a standard disclaimer message before the user signs a document, create a custom property page and configure the transition to show the page as described in Create a New Property Page and Configure Transition Authorization. All transition wizard pages are shown before the electronic signature page.

Configure the Electronic Signature Data

The data that is included in an electronic signature is entirely up to you. The data should be stored in the built-in Meridian Enterprise property **AMDocumentPropertySet._ESIGNATURES**. The value of this property is shown when users click the **Electronic signatures** link on the **Document** page in PowerUser. The value of **BCRenditionPropertySet._ESIGNATURES** is used to render signature pages for renditions created by Accruent Publisher. If the **Show reason** option is enabled as described in Configure Authentication, the selected reason is stored in **AMDocumentPropertySet._APPROVALREASON**. You can combine and format the data from document properties, user input, and any other data available to VBScript.

To configure the electronic signature data:

1. In Meridian Enterprise Configurator, in the VBScript editor, add code to the event handler that corresponds to the beginning of the workflow for which you enabled electronic signatures as described in Configure Electronic Signatures For Document Type Workflow and Configure Electronic Signatures For Workflow Definitions.
   - For document type workflow transitions: **DocWorkflowEvent_AfterChangeWFState**
   - For workflow definition transitions: **ProjectWorkflowEvent_AfterExecuteTransition**

   Your code should test for the correct starting transition name and it should empty the property of any electronic signatures that were made for the prior revision of the document similar to the following example.
2. Add code to the same event handler but for the end workflow transition.

   Your code should test for the correct end transition name and concatenate the new electronic signature data to any prior electronic signatures that may have been made within the same workflow. Your code should look similar to the following example fragment. This example stores the user's name, the current date, and the reason that the user entered when they signed the document.

```
Sub DocCWFEvent_AfterExecuteTransition(Batch, Transition, Person,
Manager, Comment)
  Select Case Transition.Name
    Case "StartChange"
       'Reset esig status
       Document.ReviewRequired = ReviewRequired
       Document.ApprovalStatus = vbNullString
    Case "Release", "Approve"
       'Append to the workflow log
       Document.Log "Revision " & Document.Revision & " " &
Document.ApprovalStatus
  End Select
```

```
  Select Case Transition.WorkflowName & "." & Transition.Name
    Case "FDAeSigWorkflow.StartChange",
"FDAeSigWorkflow.RejectwithRemarks"
      'Reset esig data on start of a workflow
      Document.Property("AMDocumentPropertySet._
ESIGNATURES")="Unsigned Version"
      Document.Property("BCRenditionPropertySet._
ESIGNATURES")="Unsigned Version"
    Case "FDAeSigWorkflow.Approve"
      'Append esig data to existing
      If Left(Ucase(Document.Property("AMDocumentPropertySet._
ESIGNATURES")),8) _
        <> "UNSIGNED" Then

        Document.Property("AMDocumentPropertySet._ESIGNATURES")= _
        Document.Property("AMDocumentPropertySet._ESIGNATURES") &
_
        vbNewLine & "Signed by " & User.FullName & " on: " & _
        GMTTime2Local(Vault.ServerTimeGMT) & " " & _
        Document.Property("AMDocumentPropertySet._APPROVALREASON")

        Document.Property("BCRenditionPropertySet._ESIGNATURES")=
_
        Document.Property("BCRenditionPropertySet._ESIGNATURES") &
_
        vbNewLine & "Signed by " & User.FullName & " on: " & _
        GMTTime2Local(Vault.ServerTimeGMT) & " " & _
        Document.Property("AMDocumentPropertySet._APPROVALREASON")

      Else
        'Save initial esig data
        Document.Property("AMDocumentPropertySet._ESIGNATURES")= _
        "Signed by " & User.FullName & " on: " & _
        GMTTime2Local(Vault.ServerTimeGMT) & " " & _
        Document.Property("AMDocumentPropertySet._APPROVALREASON")

        Document.Property("BCRenditionPropertySet._ESIGNATURES")=
_
        "Signed by " & User.FullName & " on: " & _
        GMTTime2Local(Vault.ServerTimeGMT) & " " & _
        Document.Property("AMDocumentPropertySet._APPROVALREASON")
      End If
  End Select
End Sub
```

Renditions

Meridian Enterprise is able to store and manage multiple files for each document in a vault. The primary file is the editable content of the document. Other files include hybrid document parts, a thumbnail image, electronic redlines, and renditions.

A rendition is a copy of a document in a format other than the original file. Typically, the rendition is in a non-editable format and is distributed only for reference or hard copy printing while the original, editable source document is not distributed outside of the organization. Examples of rendition formats are Adobe PDF and Autodesk DWF. See the *Rendering Modules* article in the *Meridian Enterprise Server Administrator's Guide* to learn more about the rendering modules Meridian Enterprise supports. Renditions can often be created by the same application that is used to edit the original document or they can be created by a different application. In some cases, the renditions are stored in a separate vault or document management system than the source documents.

Meridian integrates with Publisher to render and optionally publish renditions to the same or to other document management systems. Meridian Enterprise can store renditions as an alternative content stream that is equivalent to the original document. Like hybrid document parts, a document's rendition inherits the same property values as its parent document in most cases.

See the *Renditions* section in the *Meridian Enterprise User's Guide* to learn how users can work with renditions in PowerWeb.

Supported Rendition Generation Scenarios

Meridian Enterprise supports renditions for two scenarios based on the number of renditions that are generated from the source document:

- One rendition for each source document.

  This is the classic scenario for renditions and the one that is used most often. Each document file represents only one document (for example, a typical 2D drawing) and only one rendition is generated for the document. The rendition shows the same information as if the document were printed or plotted.
- More than one rendition for each source document as described in Generate Multiple Renditions Per Document.

Updating Renditions

To make changes to a rendition, a user must place the source document under change in a workflow. When the source document is routed using a transition that has been configured to update the rendition, the source document is automatically added to the Publisher Queue where it will be rendered by a Publisher rendering module. If a rendition does not exist in the vault, it will be automatically created; otherwise, the existing rendition is updated.

When the Meridian FDA Module is used, document workflow transitions can be configured to require electronic signatures that can be manifested on the renditions or on signature pages attached to renditions. For information about the electronic signature options, see Electronic Signatures.

Relevant Functionality

Meridian Enterprise further supports renditions in numerous ways:

Meridian Enterprise client applications

In the client applications, the following functionality related to renditions is supported.

- Advanced file properties
- Import with the **Document Import Tool** or drag-and-drop

  To learn more, see the *Import Documents* section in the *Meridian Enterprise User's Guide*.
- Viewing, redlining, printing, and hotspots in the viewer

  To learn more, see *View Renditions* in the *Meridian Enterprise User's Guide*.
- Updating on demand by users

  To learn more, see *Update Renditions* in the *Meridian Enterprise User's Guide*.
- Meridian Explorer support

Meridian Enterprise vaults

In the Administrator, Administration Console, and Configurator, the following functionality has an impact on renditions.

- Database Import Wizard
- Automatic updating upon execution of a document type workflow transition or workflow definition transition
- Specific security privileges

- Archiving support

  To learn about archiving a vault, see the *Archive Documents* section in the *Meridian Enterprise Administrator's Guide*.

- Restoration of renditions during vault restoration

  To learn about restoring the backup of a vault, see the *Restore Backups* section in the *Meridian Enterprise Administrator's Guide*.

- Recovery log support

  To learn about recovering documents, see the *Recover Documents* section in the *Meridian Enterprise Administrator's Guide*.

- Hyperlinks in email notifications and reminders

- VBScript support

  To learn more, see *Publishing And Rendering Options* in the *Meridian Enterprise VBScript API Reference Guide*.

- Multiple renditions per document as described in Generate Multiple Renditions Per Document

Configure a Vault to Generate Renditions

Configuring a vault to generate renditions involves the following tasks:

1. Enable the vault to use renditions as described in Configure General Vault Settings.
2. Configure a default publishing job name as described in the *Configure a Publishing Job* article in the *Meridian Enterprise Server Administrator's Guide*.
3. Enable rendition generation for workflow transitions as described in Configure Document Type Workflow and Create And Edit Transitions.

For more information about generating renditions, see the *Configure Rendering Options* article in the *Meridian Enterprise Server Administrator's Guide*.

Generate Multiple Renditions Per Document

This is a special rendition scenario that supports when one document source file contains the information for multiple output documents. Meridian supports this by generating one rendition for each output document.

An example of this is a 3D model that is managed in Meridian as a single document but from which multiple sheets of 2D views are plotted. Another example is a 2D energy distribution line drawing of a large geographical area that is managed in Meridian as a single document but from which multiple sheets of smaller-scale line segments are plotted.

In both examples, the plots that are output each need to be managed in Meridian as distinct documents apart from, but related to, the original document. The plotted layouts all communicate information about the same general object but each layout is also distinct and the title block in each layout specifies the differences. For information about configuring the AutoCAD link to synchronize the title blocks in multiple drawing layouts, see Synchronize Multiple Blocks Per Drawing.

Meridian only supports multiple renditions made from AutoCAD drawings.

Configuring a vault to generate multiple renditions for the same document involves the following tasks:

1. If the documents can be AutoCAD drawings that contain multiple layouts, each with a title block that contains attributes that can have different values, enable the **Synchronize the title blocks in all layouts** option of the document type as described in Configure Title Block Updates.
2. Configure the vault to generate revisions as described in Renditions but configure the publishing job to generate separate renditions for each layout as described in the *Configure Rendering Options* article in the *Meridian Enterprise Server Administrator's Guide*.

Each of the layout renditions will be imported into the vault automatically as new documents. The property values of the new documents are copied from the source document and updated from the title block in the layout from which the rendition was generated. References to the new documents from the source document are also created automatically with the system reference type **RTRenditionReference**. The renditions can then be managed using normal Meridian features.

Watermarks and Print Stamps

There are two types of watermarks you can configure for renditions:

1. **Dynamic watermarks**: Text that appears on hard copies made with the Meridian viewer, or the **Download for Print** option in PowerWeb, or the **Print Renditions** and **Download PDF** options in Explorer. Typically used to describe the circumstances of a document, such as who has printed the document or when it was printed.
2. **Static watermarks**: Text related to the content of a document, such as if a document is now obsolete

Configure Rendition Watermarks

You will typically need to create multiple watermark profiles, if not for separate purposes, then for each rendition page size. Default watermark profiles may also be configured that will be applied to any page size and orientation. Rendition watermarks are typically used to describe the contents of a document, such as if a document is now obsolete. For this reason, they may be described as static watermarks. To configure dynamic watermarks related to the circumstances of a document, see Configure Watermark Printing.

To prevent all watermarks from being applied for specific publishing jobs, specify the **_NOPOSTRENDER_** rendering option in the publishing job.

At least one publishing job must first be configured to generate renditions as described in *Configure the rendering options* in the *Meridian Enterprise Server Administrator's Guide*.

Create or Edit a Watermark Profile

1. In Meridian Enterprise Server Administration Console, in the **Data Exchange** group, click **Jobs**.

   The **All Jobs** page opens with a list of existing publishing jobs. The jobs are grouped by the name of the computer (cluster node) to which they have been assigned.
2. Double-click the publishing job that you want to configure.

   The **Overview** page appears.
3. On the menu, click **Post Rendering**.

   The **Post Rendering** page appears and lists the current watermark profiles.
4. To prevent tampering with the watermarks (professional engineers' stamps, for example), enable **Secure PDF**.

   This assigns a randomly generated password to the watermarks that cannot be retrieved. Be certain that you do not want the watermarks to be editable before enabling this option.
5. Confirm that the **Enable** check box is selected.

   Clear **Enable** to disable all watermarks in one step. To disable a specific watermark type, clear the **Enable** option in the properties of the watermark type.
6. Choose between two options:
   - To edit an existing watermark profile:
     - In the row of the watermark profile that you want to edit, click the **Edit** icon .

       The **Edit Watermark** dialog box appears.
   - To create a new watermark profile:

- Click **Add**.

  The **New Watermark** dialog box appears.

  The menu lists the types of watermarks that you can configure.

  - Overlay: Text or image placed on the face of the document, for example, an effectivity statement
  - ESignature: Text or image placed on the face of the document that identifies the document as having been electronically signed
  - Print stamp: Text placed in the margin of a document, for example, that shows the date and time when the rendition was generated
  - Prior revision: Text or image placed on the face of the prior revision of the published document, for example, to indicate that the prior rendition is obsolete. This watermark type is only applied if the publishing job is a **Rendition** type. Other source systems are not supported by this type.

7. Click options or type values using the descriptions in the following table.

   Not all options are required for every watermark type.
8. Repeat step 5 for each watermark type that you want to configure for this watermark profile.
9. Click **OK**.

   The new watermark profile name appears in the list.
10. Click **Save**.
11. If you created a **Prior Revision** type watermark and the publishing job is a **Rendition** type:
    - Select the **Enable** check box in the **General** options, described below.
    - Enable the **Watermark prior revision** option as described in *Configure the Miscellaneous Options* in the *Meridian Enterprise Server Administrator's Guide*.
12. Click **Save**.

Watermark options

Group	Option	Description
General	Name	A descriptive name for the watermark profile. The default is the type of watermark.

Group	Option	Description
General	Size	Select the rendition page size to which this watermark profile will be applied. The sizes that are available are provided by the operating system. If no size or **Orientation** are set, this watermark profile will be considered as a default watermark profile. It will be applied to all renditions that are created by the current publishing job unless another watermark profile specifies a matching rendition page size.
General	Orientation	Select the rendition page orientation to which this watermark profile will be applied. If no orientation or **Size** are selected, this watermark profile will be considered as a default watermark profile. It will be applied to all renditions that are created by the current publishing job unless another watermark profile specifies a matching rendition page orientation.
General	Enable	Enables the selected watermark type for the current watermark profile. You may also enable and disable watermark types in the watermark profiles list. This setting must be selected to apply a watermark to a prior revision of a rendition. You also must enable the **Watermark prior revision** option as described in *Configure the Miscellaneous Options* in the *Meridian Enterprise Server Administrator's Guide*.

Group	Option	Description
Conditions	Apply water mark	Select **Always** if the watermark should be applied under all conditions. Select **Property name** to make the watermark dependent upon a source document property value. To select the property: 1. Click **Select**. The **Select Property** dialog box appears and lists all of the available properties. 2. To filter the list to show only similar property names: a. Type the beginning of a property set name or a property name in the filter box. The search operator that will be used is **Starts With**. b. Click the search icon . The list refreshes to show the results of your filter. c. To reset the filter results, clear the filter box and click the icon again. 3. Click the name of the property that you want to use. 4. Click **OK**. The selected name appears as the option value. To remove the current property: • Click **Clear**. The property name is removed.
Conditions	Property nam e	The name of the property that determines when this watermark will be applied.
Conditions	Value	The value that the selected property must equal for the watermark to be applied.

Group	Option	Description

PDF Printing Handler	Javascript file	The name of a JavaScript for Acrobat file to calculate the watermark text. Available only for the print stamp watermark type.
		Accept the default, which is an example installed by the Meridian Enterprise Server setup program or click **Select** and follow the instructions in *Manage custom resources* in the *Meridian Enterprise Server Administrator's Guide* to upload a different file. The script will be executed on the Acrobat **Will Print** event before the document is printed.
		You can modify the example file `PrintStamp.js` or use it as a template to create variations for other purposes. The example generates text that will be placed in the stamp field named **PrintStamp**:
		`var strStampValue = "BC Publisher sample. Printed on " + util.printd(2, new Date());`
		`this.getField("PrintStamp").value = strStampValue;`
		For more information about JavaScript for Acrobat and the **Will Print** event, see Perk up PDF documents with JavaScript.

PDF Printing Handler	Stamp field name	This option is only available for the print stamp watermark type. The name of the form field that will be added to the rendition PDF files. Accept the default name or type a different name. This field will receive the text calculated by the JavaScript file.
Text	Use this text	Select to apply the text that you type in the text box for this watermark.
Text	Use property value from source document	Select to apply the value of the selected property as the watermark text. Date/time property values are rendered in the local server format. To select the property, perform the steps listed for the **Select** command in the preceding option.
Text	Use this image file	Select to apply the specified image as the watermark. To select an image: 1. Click **Select**. The **Resources** dialog box appears and lists the custom resources that have already been uploaded to the server. 2. Select an existing image or upload a new image as described in *Manage Custom Resources* in the *Meridian Enterprise Server Administrator's Guide*.

Group	Option	Description
Text	Use this template file	The name of an HTML file that defines the text and images to overlay on the rendition. Accept the default, which is an example installed by the Meridian Enterprise Server setup program or click **Select** to select an existing file or upload a different file as described in *Manage Custom Resources* in the *Meridian Enterprise Server Administrator's Guide*. • This option requires that Microsoft Word be installed on the rendering computer. • This template is not the same as the template that is described in *Create a signature page template* in the *Meridian Enterprise Server Administrator's Guide*, but is created in the same way. If the **Paper size** option is configured, then the template will be rendered to that size, otherwise the A4 page size will be used.
Text	Non-ANSI support	Enable this option if the watermark text uses non-ANSI characters. The text itself will be rendered to an image that is then placed on the rendition similar to the **Use this image file** option. This option requires that Microsoft Word be installed on the rendering computer.
Appearance	Font name	The name of the font in which to render the watermark text.
Appearance	Font size	The size of the font in which to render the watermark text.
Appearance	Font color	Select a color from the color picker in which to render the watermark text.
Appearance	bold	Renders the watermark in bold text.
Appearance	Italic	Renders the watermark in italic text.
Appearance	Alignment	The horizontal alignment of the watermark text relative to the text starting point. Values other than **Left** are ignored if the **Rotation** option is not set to the default. The **Right** option has no effect if **Rotation** is greater than 0.
Appearance	Mode	Modes that render the watermark text with special effects: • **Normal**: Text characters filled with the selected font color • **Outlined**: Text characters outlined in black with no fill • **Normal with a border**: Text characters filled with the selected font color and outlined in black • **Invisible**: Text with no fill or outline

Group	Option	Description
Appearance	Rotation	The clockwise angle at which to render the watermark text on the page.
Appearance	Use exact location	Enable this option to specify precise coordinates for the origin of the watermark on the page.
Appearance	**X** and **Y**	Type numbers in the text boxes to specify the lower-left corner of the watermark text on the rendition page. The values are relative to the standard coordinate system with the origin in the lower-left corner of the rendition page. For template-generated watermarks, start with no offset (0,0). The page size is specified as described in *Configure the rendering options* in the *Meridian Enterprise Server Administrator's Guide*. If no page size is configured, the A4 page size is assumed. An A4 size page has a width (**X**) of 595 points and height (**Y**) of 842 points. One point is equal to 1/72 of an inch. If the **Use this template file** or **Use this image file** options are enabled, the insertion point of these watermarks is the upper-left corner of the watermark as opposed to the origin of the rendition page in the lower-left corner. Therefore, specify the number of points to offset the location from the lower-left corner of the rendition page in the horizontal and vertical directions, respectively.
Appearance	**Size X** and **Size Y**	When the **Use this image file** option is enabled, specify here the number of points for each dimension of the image watermark.
Appearance	Use location on page	Enable this option to select a general location on the page as the origin of the watermark and then select the location from the list.
Appearance	Apply on first page only	Renders the watermark only on the first page of a multi-page rendition. Not available for print stamp type watermarks.
Appearance	Opacity	Specify how transparent to render the watermark.
Appearance	Place in the background	If enabled, renders the image watermark behind the document rendition. If disabled (default), it is rendered on top of the rendition.

Copy a Watermark Profile

1. In Meridian Enterprise Server Administration Console, in the **Data Exchange** group, click **Jobs**.

   The **All Jobs** page opens with a list of existing publishing jobs. The jobs are grouped by the name of the computer (cluster node) to which they have been assigned.

2. Double-click the publishing job that you want to configure.

   The **Overview** page appears.
3. On the menu, click **Post Rendering**.

   The **Post Rendering** page appears and lists the current watermark profiles.
4. Select the row of the watermark profile that you want to copy and then click **Copy**.

   The watermark profile is copied.

Delete a Watermark Profile

1. In Meridian Enterprise Server Administration Console, in the **Data Exchange** group, click **Jobs**.

   The **All Jobs** page opens with a list of existing publishing jobs. The jobs are grouped by the name of the computer (cluster node) to which they have been assigned.
2. Double-click the publishing job that you want to configure.

   The **Overview** page appears.
3. On the menu, click **Post Rendering**.

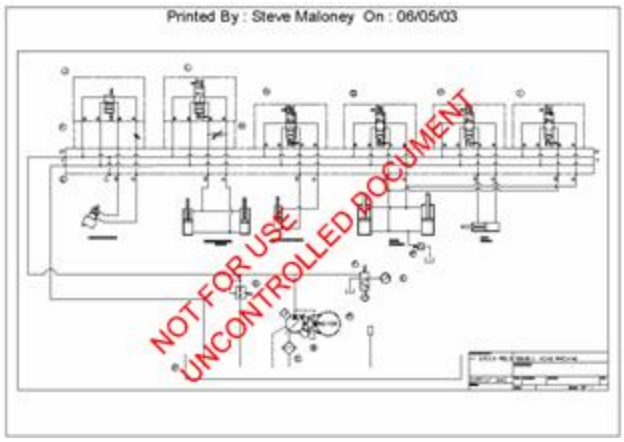
   The **Post Rendering** page appears and lists the current watermark profiles.
4. In the row of the watermark profile that you want to delete, click the **Remove** icon ✖.

   The watermark profile is deleted.

Configure Watermark Printing

You can configure watermark text to appear on hard copies made with the Meridian viewer, similar to the following figure. These watermarks are typically used to describe the circumstances of a document, such as who has printed the document or when it was printed. For this reason, they may be described as dynamic watermarks.

To configure static watermarks related to the content of a document, see Configure Rendition Watermarks.



This can be useful to indicate unapproved drawings, expiration dates, time stamps, and so on. You can configure the following characteristics of watermarks:

- Text, which can include property values
- Font, size, color, and transparency of the text
- Position on the printed page and angle of the text
- Title text to appear as the header or footer of the printed page

The watermark options are set with VBScript in the **DraftPrint_SetWaterMark** event procedure because it is invoked immediately before printing occurs. For more information on customizing event procedures, see the *Document Generic Events* article in the *Meridian Enterprise VBScript API Reference Guide*.

- These watermarks appear on hard copy output from the viewer and are independent of watermarks that can be added to renditions by Publisher as described in *Configure Rendition Watermarks* in the *Meridian Enterprise Server Administrator's Guide*.
- The settings **Enable draft print** and **Enable watermarks on draft print hardcopies** must be set to **True**.
- These watermarks can be rotated to match the page rotation of specific printers using these registry values described in the *Meridian Enterprise Administrator's Guide*.

```
HKEY_CURRENT_USER\Software\Cyco\AutoManager View
Control2\Settings\AVLandscape
HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Cyco\AutoManager View
Control2\Settings\AVLandscape
```

Watermarks use the **Client.Viewer.Watermark** properties described in the following table. You do not have to use all of the properties, only the ones necessary to produce the results you want.

Watermark options

Property	Type	Description
Angle	Long	The angle of the watermark text in degrees.
Color	String	The color of the watermark text, specified as an **AS_WATERMARK_COLORS** constant.
Font	String	The font of the watermark text. Can be any installed Windows font.
FrameWidth	Long	The width of a line framing the printed page.
Size	Long	The font size of the watermark text in points.
Style	Long	The position of the watermark text on the printed page using one or more **AS_WATERMARK_STYLES** constants. To combine style options, use the **Or** operator.
Text	String	The watermark text to print.
TitleFont	String	The font of the title text. Can be any installed Windows font.
TitleFontSize	Long	The font size of the title text in points.
TitleStyle	Long	The position of the title text on the printed page using one or more **AS_WATERMARK_TITLESTYLES** constants. To combine style options, use the **Or** operator. You can specify only one title. You cannot print one title in the header and another title in the footer.
TitleText	String	The title text to print. Title text is always printed in black.
Transparency	Long	The transparency of the watermark text in percent.

Following is an example event procedure that incorporates all of the watermark properties and produces a watermark, frame, and title similar to those in the preceding figure.

vbCrLf can only be used with TitleText, not with Text.

```
Sub DraftPrint_SetWaterMark()
    Client.Viewer.WaterMark.Angle = 45
    Client.Viewer.WaterMark.Font = "Arial"
    Client.Viewer.WaterMark.Size = 36
    Client.Viewer.WaterMark.Text = "NOT FOR USE"
    Client.Viewer.WaterMark.TitleFont = "Arial"
```

```
    Client.Viewer.WaterMark.TitleFontSize = 10
    Client.Viewer.WaterMark.TitleStyle = AS_WMTS_CENTRED Or AS_WMTS_
HEADER
    Client.Viewer.WaterMark.TitleText = "Printed by: " &
User.FullName & " on: " & DateValue(Today)
End Sub
```

Folder Types

Meridian features configurable folder types that can use custom properties and pages in very much the same way that document types use them. Folder types can display property pages for user input when the folders are created and they can display the same, different, and additional pages after creation. You can use folder types in a vault's Field-Path definition just as you would normal folders. Folder types can be useful when a folder's name is inadequate to describe what the folder represents, for example, a building that has a name, number, owner, tenant, contract, and so on; or when the folder represents a process, such as a project. Projects that require workflow, however, would be better served by the Meridian Advanced Project Workflow Module.

Create And Edit Folder Types

Meridian folder types are the templates from which users can create intelligent folders in a vault.

To create and edit a folder type:

1. In Configurator, expand **Folder Types** in the configuration tree to display the existing folder types.
2. Choose one of the following options:
   - To create a new folder type:
     a. On the **Edit** menu, select **New Folder Type**.

        A new folder type is added to the configuration tree and its property pages appear in the right pane.

     b. Proceed to step 3.
   - To edit a folder type:
     a. Select the folder type.
     b. Click **Edit**.
     c. Proceed to step 3.
   - To delete a folder type:
     a. Select the folder type.
     b. On the **Edit** menu, select **Delete**.
3. On the **General** tab, click options or type values using the descriptions in the following table.

Folder type general options

Option	Description
Display Name	Type the name of the folder type as you want it to appear to users. This name should reflect the purpose of the folder type.
Name	A default internal name is calculated. Accept the default in most cases.
Description	Type an optional description.
Icon	An icon to be used to represent this folder type.
Use default folder name	Allows users to name folders when they are created.

Option	Description
Calculate folder name	Prevents users from naming folders during creation and calculates a standard folder name. Type a VBScript expression or click the Meridian Enterprise Script Editor button to build a VBScript expression. For information on using VBScript for configuration expressions including their limitations, see the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference*.
On import	Calculates a standard folder name using the configured VBScript expression during the import of documents.
Can be used for projects only	For use with the Advanced Project Workflow Module. Prevents the folder type from displaying in the Meridian clients and inadvertently being used to create non-project folders.
Can be used for master documents only	For defining a master area in a vault. Place all master documents in this folder or in a subfolder of this folder.
Can be used as a shared workspace	Allows the folder to be shared by multiple users simultaneously as described in Configure Shared Workspaces. This option cannot be set after the folder type has been created. Enabling this option requires a **Shared Workspace Support** server license. Folders created from this type have the additional shared workspace privileges described in Security Privilege Descriptions. **Note:** A shared workspace folder that is set to a mapped drive can cause errors during rendition generation by Publisher. If the folder cannot be set to a UNC path, the following steps can help prevent errors: a. Create a new DWORD value named **EnableLinkedConnections** in the following key of the Meridian Enterprise Server registry and set it to **1**: `HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System` b. Configure the Meridian Enterprise Server service to run as a logged on user as described in the *Configure Enterprise Server To Not Run As a Service* article in the *Meridian Enterprise Server Administrator's Guide*.
Can be linked to Meridian Portal projects	Enable this option if this folder type will be linked to projects in Meridian Portal. After creating the folder type with this setting enabled, the **ProjectFolderPropertySet** property set is created automatically.

4. Click the **Field-Path** tab and configure options as described in Apply a Folder Type To the Field-Path Definition.
5. Click the **Pages** tab and configure options as described in Apply Property Pages To a Folder Type.
6. Click the **Commands** tab and configure options as described in Apply Custom Commands To a Folder Type.
7. Click the **Extensions** tab and configure options as described in Apply Custom Extensions To a Folder Type.
8. Click the **Properties** page to view the properties available to the folder type, as described in View the Properties Of a Folder Type.
9. Click **OK**.

Apply a Folder Type To the Field-Path Definition

Applying a folder type to the Field-Path definition allows that folder type to be selected when users create new folders at the selected level of the Field-Path definition.

> **Note:**
> You may also apply a folder type to the Field-Path definition as described in Create the Initial Field-Path Definition.

To apply a folder type to the Field-Path definition:

1. In Configurator, expand **Folder Types** in the configuration tree and select the folder type that you want to edit.

   Its property pages appear in the right pane.
2. Click the **Field-Path** tab to display the current Field-Path assignments.

   If the folder type is set as the default folder type for a level of the Field-Path definition, it will appear in bold text.
3. Click **Edit**.
4. Select the check box of the level in the Field-Path definition where you want users to be able to select the folder type.
5. Click **OK**.

Apply Property Pages To a Folder Type

You can apply custom pages to folder types that prompt users for input when new folders are created (wizard pages) and that display custom properties (property pages) applied to the folder types. The properties used by a folder type can be inherited by the documents in the folders created from the folder type.

> **Note:**
> The custom pages that you want to apply to a folder type must already exist in the vault configuration. For more information on creating custom pages, see Create a New Property Page.

To apply a custom page to a folder type:

1. In Configurator, expand **Folder Types** in the configuration tree and select the folder type that you want to edit.

   Its property pages appear in the right pane.
2. Click the **Pages** tab to display the current page assignments.
3. Click **Edit**.
4. Click options or type values using the descriptions in the following table.
5. Click **OK**.

> **Note:**
> Custom properties that are used in the Field-Path definition should not appear on custom pages applied to folder types. The properties are read-only when the Field-Path definition is calculated during the creation of folders.

Property page display options

Option	Description
Show as property page	To show a page as a property page for all folders of this folder type, select a page in **Available pages** and click the right arrow button to add it to this list. To remove a property page from this list, select the page and click the left arrow button. After you have selected the appropriate pages, use the up arrow button and down arrow button to arrange the order of the pages in the list. Their order determines the order in which they will display in the Meridian client applications, from left to right.

Option	Description
Show as wizard page	To show a page as a wizard page for all folders of this folder type, select a page in **Available pages** and click the right arrow button to add it to this list. To remove a property page from this list, select the page and click the left arrow button . After you have selected the appropriate pages, use the up arrow button and down arrow button to arrange the order of the pages in the list. Their order determines the order in which they will display in the Meridian client applications, from left to right.
Commands that show wizard pages	Select the commands that you want to show the wizard pages selected in the above list. Learn more about custom commands.

Apply Custom Commands To a Folder Type

Custom commands you define in Configurator can be applied to folder types just as they can be applied to document types. This makes running processes on the entire contents of a folder faster and easier than having to first select all the documents in a folder and then run the command on the resulting selection. Custom commands can also act upon the custom properties assigned to folder types.

> **Note:**
> The commands that you want to apply to a folder type must already exist in the vault configuration. For more information on creating custom commands, see Create And Edit Custom Commands.

To apply a custom command to a folder type:

1. In Configurator, expand **Folder Types** in the configuration tree and select the folder type that you want to edit.

   Its property pages appear in the right pane.
2. Click the **Commands** tab to display the current command assignments.
3. Click **Edit**.
4. Select the commands to display on the **Folder** shortcut menu.
5. Click **OK**.

Apply Custom Extensions To a Folder Type

Custom user interface extensions can be applied to folder types. These extensions may act upon custom properties used by the folder type or act upon the documents contained in the folder type. Any property pages included in the extension will appear in Configurator as property pages in the **Pages** branch of the configuration tree.

To apply custom extensions to a folder type:

1. In Configurator, expand **Folder Types** in the configuration tree and select the folder type that you want to edit.

   Its property pages appear in the right pane.
2. Click the **Extensions** tab to display the current extension assignments.
3. Click **Edit**.
4. Click options or type values using the descriptions in the following table.
5. Click **OK**.

Custom extension options

Option	Description
Add	To apply a Visual Basic user interface extension to this folder type, click the **Add** button, select a custom extension, and click **OK**.
Remove	To remove a custom user interface extension from this folder type, select the extension in the list and click the **Remove** button. **Important!** Do not remove the **Folder User Interface** or **AutoPages Host** extensions. They are included with all Meridian systems and required.
Up and Down	Click the **Up** and **Down** buttons to arrange the order of the extensions in the list. Their order determines the order in which their property pages display in the Meridian client applications, from left to right.

View the Properties Of a Folder Type

You can easily view all of the properties of a folder type in Meridian Configurator. The properties shown include all of the properties used internally by Meridian for folder types as well as the properties of custom extensions, and the custom properties applied to the folder type.

We recommend you add the properties of custom folder types to the **Folders View Columns**, navigation view **Columns**, **My Working Copies View Columns**, and **Search Result Columns** lists for better visibility.

To view the properties of a folder type:

1. In Configurator, expand **Folder Types** in the configuration tree and select the folder type that you want to edit.

   Its property pages appear in the right pane.

2. Click the **Properties** tab.

   The **Properties** page appears. This page is not editable.

3. Drag the vertical scroll bar to view additional available properties, if any.

Configure Shared Workspaces

Some document authoring applications feature multi-user project or data files. Examples are AutoCAD Civil 3D and AutoCAD Plant 3D. The application itself manages the multi-user access. Since Meridian enforces strict single-user file access, using such applications with Meridian can be more complicated and problematic. Meridian supports these kind of applications with *shared workspaces*.

Notes about Functionality

A shared workspace is a custom type of folder in a vault that Meridian manages in special ways:

- Instead of downloading to the local workspace folders on each user's computer for exclusive viewing and editing, the documents download to a shared network location for shared viewing and editing.

  The vault must be configured to use local workspaces as described in the *Local Workspace* section in the *Meridian Enterprise Administrator's Guide*. The Accruent Filesystem Service (AMFS) is not compatible with shared workspaces. However, file filters that are defined in the AMFS configuration are also applied to shared workspace synchronization.

  If there is no desktop.ini file and the Shared Workspace does not function, this can be resolved by setting the **WorkSpaceSharedCheck** setting to **1**. (See the HKEY_LOCAL_MACHINE\Software\Cyco\AutoManager Meridian\CurrentVersion\Client article in the *Meridian Enterprise Administrator's Guide* for more information.) This ensures that the necessary ini file is created in the workspace location on the download operation.

  > **Important!**
  > If a document is locked in the shared folder but changed using PowerWeb (in a local workspace), the version in the shared folder is considered as the correct version and can overwrite the changes made using PowerWeb. For this reason, users should not attempt to circumvent the system and should use workflows to make all document changes to ensure proper synchronization.

- The shared workspace can be synchronized with the vault in the following ways:
  - Manually with the **Lock Documents and Sync Workspace** and **Sync Workspace** commands in PowerUser.
  - Automatically by the Meridian application links
  - Periodically by a scheduled task that runs `BCSharedFolderSync.exe`, described below

Configuration

You must have the **Edit shared workspace settings** privilege of the shared workspace folder type in order to configure shared workspaces.

To configure a folder to be a shared workspace:

1. Create or edit the custom folder type as described in Create And Edit Folder Types.
2. Enable the **Can be used as a shared workspace** option.
3. Save your changes.

   Shared workspace folder types can also be used with project definitions as described in Create a Project Definition.
4. Create a folder in the vault using the modified folder type as described in the *Create a Folder* article in the *Meridian Enterprise User's Guide*.
5. Edit the options on the **Folder** tab of the new folder using the descriptions in the following table.
6. Click **OK**.

Shared workspace options

Option	Description
Workspace location	Click the folder browser button and select an existing shared network folder to associate with the vault folder. Create a new folder, if necessary. All users that will work in the vault folder require access to the workspace location; read-only for viewing or read-write for editing. • This location must not be a user's local workspace folder. • The parent folder of this location must not also be a shared workspace folder. • If this location is on a mapped network drive, the drive must also be mapped for the system account under which automated processes run that require access to documents in the shared workspace, Accruent Publisher, for example. Alternatively, specify a UNC path instead. • Multiple vault folders mapped to the same shared workspace location is not supported.

Option	Description
Synchronize automatically	The contents of the shared workspace location can be manually synchronized with the associated vault folder by users with the **Lock Documents and Sync Workspace** (to folder) command and the **Sync Workspace** (to vault) command. This option allows the Meridian application links to automatically synchronize the contents of the shared workspace location with the associated vault folder: • Documents in the shared folder that are in a writable workflow state are updated with any changes in the vault. • Documents in the vault that are in a writable workflow state are updated with any changes in the shared folder. • New documents in the folder are created in the vault if the **Allow automatic creation of new documents** is also enabled and if the extension is not excluded from the vault by an AMFS file filter as described in the *File Filters* article in the *Meridian Enterprise Administrator's Guide*. If the folder option **Default document type for new documents** is set, the documents are assigned that type. Otherwise, they are assigned the default document type for the file extension. During manual synchronization, the wizard for the document type of each new document is shown for input. If the wizard is canceled, the document is not created. To periodically force synchronization to occur, create a task in the **Task Scheduler** Control Panel applet to run `BCSharedFolderSync.exe`. The program is installed in the Meridian `Program` folder. The syntax of the executable is as follows. `BCSharedFolderSync /Amfs="M-<MachineName>, D-<DatastoreName>"` The account under which the task is run must have access to both the destination shared folder and the source vault folder. By default, the program creates a log file of all synchronization activity named `BCSharedFolderSync.log`. The file is located in the same folder as the executable. The location and other options of the log can be configured with registry settings described in the HKEY_CURRENT_USER\Software\Cyco\AutoManager Meridian\CurrentVersion\BCSharedFolderSync\Settings\Log article in the *Meridian Enterprise Administrator's Guide*. The settings must only be configured by the user account under which the program is run.

Option	Description
Delete documents from workspace when released from workflow	After documents are released from workflows and synchronized with the vault, the shared workspace copies are automatically deleted to prevent further changes to them outside of the vault. Deletion occurs: • When the Meridian application links synchronize with the vault • When users invoke the **Lock Documents and Sync Workspace** command • When `BCSharedFolderSync.exe` runs **Note:** Documents can be recopied to the shared folder when they are viewed by users or are referenced by other documents that are opened for editing.
Default document type for new documents	Document type to assign to all new documents created in the vault as the result of shared workspace synchronization regardless of the default type assigned to the file extension in the vault configuration.

Project Definitions

All of the managed change functionality of Meridian Enterprise revolves around project definitions. Project definitions are the elementary building blocks upon which project folders are created to contain project copies of master documents for revision.

Some of the features described in this chapter are available only if the Advanced Project Workflow Module is enabled for a vault as described in Enable Project Definitions.

Project definitions determine the following characteristics of a project folder:

- The associated custom folder type that can have custom properties and can limit where project folders may be created within the vault's folder structure.
- Project workflow states and transitions that model the project life cycle.

If the Advanced Project Workflow Module is enabled for a vault:

- Sub-project folders that may be created within the project folder to represent subordinate engineering processes.
- Workflow interlocks (rules) on the documents within a project folder that must be met before the project's workflow can change.
- Workflow interlocks (rules) on the parent project, peer projects, or sub-projects that must be met before the project's workflow can change.

Although project definitions can be complex, from the end user's perspective, using project folders is relatively straightforward. Any project folders available in a vault are listed on menus alongside available folder types and document types for easy selection.

Enable Project Definitions

Before you can create and configure project definitions in a vault, you must enable the vault to use the features.

To enable project definitions in a vault:

1. In the Meridian Enterprise Administrator, click **EDM Server** in the left pane.

   The active vaults are listed in the right pane.
2. Select the vault that you want to configure in the right pane.
3. On the **Action** menu, select **Properties**.

   The vault's **Properties** dialog box appears.
4. Click the **Advanced Features** tab.

   The **Advanced Features** page appears.
5. Select **Enable Advanced Project Workflow Module**.
6. Click **OK**.

Create a Project Definition

A project definition is a template for creating project folders. Project definitions have the following configurable characteristics:

- Identification properties
- An associated custom folder type
- An optional restriction against creating project folders from the project definition at the root level of the vault

If the Advanced Project Workflow Module is enabled for a vault:

- A configurable workflow made up of states and transitions that can have property assignments and display wizard pages
- Optional sub-projects that may be nested within the project definition
- Interlocks, which enforce rules for the synchronization between project definitions and sub-project or document workflows

> **Note:**
> You must have the Change Configuration privilege to configure project definitions. It would also be very helpful to first diagram on paper the project workflows for which you want to create project definitions and list any dependency rules that may be required between the projects, sub-projects, and document workflows.

To create a project definition:

1. Open Meridian Enterprise Configurator.
2. Use one of the following methods to add a new project definition to the configuration tree:
   - Select **New Project Definition** from the **Edit** menu.
   - Click the **New Project Definition** button .
   - Right-click **Project Definitions** in the configuration tree in the left pane and choose **New Project Definition**.
3. Type information on the **General** tab for the options described in the following table.
4. Click **OK**.

Project Definition Options

Option	Description
Display Name	The editable name of the project definition as seen by users. Required.
Name	The permanent internal name of the project definition. Required.
Description	A description of the project definition for System Administrators. Optional.
Folder type	The folder type that will be used to represent the project definition in Navigation views seen by end users. If no folder type is selected, normal folders will be used. If you select a folder type that was created to be used exclusively for a project definition, you should enable the Can be used for projects only option on the **General** tab of the folder type. This will prevent the folder type from showing in the Meridian Enterprise clients and inadvertently being used to create non-project folders.
Can be created in the vault root	Controls whether or not the project folder can be created at the root level of the vault or must be created at lower levels of the vault. Optional. This option only controls the *creation* of projects at the vault root level. It does not prevent projects from being created elsewhere then being moved to the root level.

To configure a vault to automatically create project folders and sub-folders, set the following options:

- Configure the Field-Path Definition with one or more sub-folders below a project folder level.
- Assign a default folder type to the project folder level in the Field-Path Definition.
- Configure the default folder type to only be used for project folders.
- Assign only one project definition to the default folder type.

This completes the basic configuration of a project definition. You can now continue to configure the project definition in any of the following topics.

Create a Project Workflow

The workflow of a project definition establishes the routing rules for documents contained within project folders made from the project definition. A workflow consists of the following elements:

- **States**: Phases within a project where various types of work with the project's documents are performed by others.
- **Transitions**: Actions within a project that change the current state of the project from one state to another.

Create Project Workflow

1. Select the desired project definition in the configuration tree in the left pane of Meridian Enterprise Configurator.
2. Click the **States** tab in the right pane.

   The current workflow diagram displays in the right pane.
3. Click **Edit**.
4. Use the buttons on the **States** tab to add to or remove intermediate states, end states, and transitions from the workflow diagram until it represents the business process of the type of project the project definition will represent.
5. Click **OK**.

Working with the Workflow Editor

You can work in the Workflow Editor by using the buttons on the toolbar and the commands in the context menu.

Each button has a tooltip that displays when you hover your cursor over the button. Clicking a button activates it for one-time use. To use the same command again, click the button again. The state and transition commands are available as buttons and in the context menu.

Buttons

- **Selection cursor**: Use to select an element for editing or to move the element. Becomes the current tool after any of the other buttons are used.

- **Create new intermediate state**: Click the button, point to an empty location in the workflow diagram, and click again to place a new intermediate state.
- **Create new end state**: Click the button, point to an empty location in the workflow diagram, and click again to place a new end state. Enabled only when the workflow has no end state.
- **Create new transition**: Click the button, click the originating state, then click the destination state to add a transition between the two states. The workflow will follow the direction of the transition arrowhead that is created.

  To create a transition with other than a straight line between its two states, use one of the following options:

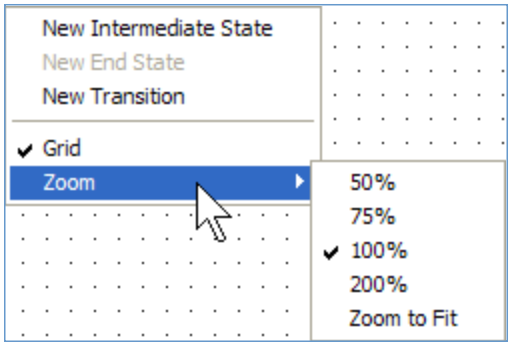
  1. Create a straight transition line between the two states as described above, then click and drag the transition label to a new location in an open area of the workflow diagram.

     The transition line will stretch to follow the transition label to its new location.
  2. After clicking the originating state, click at points in an open area of the workflow diagram to insert intermediate vertices in the transition line before clicking the destination state.

     The transition line will follow the points and the transition label will be located in the middle of the resulting line.
- **View properties**: Click to display the properties of the selected element. This command is also available by right-clicking the selected element.
- **Delete selection**: Click to delete the selected element. This command is also available by right-clicking the selected element.

Context Menu

To access the context menu, right-click in any open area of the workflow diagram, as shown in the following figure.



- **Grid**: Displays a grid of dots to help you align elements.
- **Zoom**: Offers preset magnification levels to view more or less of the current workflow diagram.

Create And Edit States

A workflow definition state represents a step in the change control of a workflow. Its options control:

- Who has access to documents
- What they can do with the documents
- How revisions are created (document workflows only)
- Automatic property assignments.

You cannot create new states for the QuickChange workflow definition. You can only edit the configuration options of the existing states.

The configuration options for QuickChange workflow states are described in the following articles:

- Assign Users To a Workflow State
- Assign Privileges To a Workflow State
- Allow New Revisions In a Workflow State
- Assign Property Values In a Workflow State

1. In Configurator, expand **Project** or **Workflow Definitions** in the configuration tree.
2. Select the workflow definition you want to edit.

   Its property pages appear in the right pane.
3. Click the **States** tab to display the current workflow.
4. Click **Edit**.
5. Choose between two options:
   - To create a new state, use the tools described in Draw a Workflow Diagram (document workflow) or Creating a project workflow (project workflow).
   - To edit a state, double-click the state.

     The state's **Properties** page appears.
6. On the **General** page, click options or type values using the descriptions in the following table.
7. Click the **To-Do Persons** tab and configure options as described in Assign Users To a Workflow State.
8. Click the **To-Do Person Privileges** tab and configure options as described in Assign Privileges To a Workflow State.

9. Click the **Revision Number** tab and configure options as described in Allow New Revisions In a Workflow State.
10. Click the **Property Assignments** tab and configure options as described in Assign Property Values In a Workflow Transition.
11. Click **OK**.

    The **Properties** dialog box closes.
12. Click **OK**.

Workflow definition state options

Option	Description
Display name	Type the name of the state as you want it to appear to users. This name should reflect the purpose of the state in the workflow.
Name	A default internal name is calculated. Accept the default in most cases.
Color	Select a color for the state shape. We recommend that you use standard colors for similar states in all workflows. This makes it easier for users to identify the states' purposes.
Consensus transition	Select a transition from the list that will require the consensus of all to-do persons before the transition will be executed. This is useful for parallel review states that require the approval of multiple users. As each person executes the transition, their name is removed from the list of users in the **By** workflow property. If one to-do person executes any other transition, the names of all to-do persons are removed. This option is not available for start and end states.
Document access	Select an access option from the list. This option determines the editing ability of the users when the document is in this state: • **Decision**: The to-do persons may run transitions only. • **Review**: The to-do persons may redline the document and run transitions. • **Edit**: The to-do persons may edit or redline the document and run transitions. This option is not available for start and end states.
Allow multiple Managers/To-Do Persons	Controls whether or not the workflow can have multiple managers assigned. If this option is enabled, an approval consensus of all managers is required for the workflow to proceed through the transition selected for the **Consensus Transition** option (above) to the next state. Optional. Select this option if multiple users may be assigned to a document routed to this state, such as for parallel review. This option is not available for start and end states.

Option	Description
Status text	Type a value for the **Status** property when in this state. This option is not available for start states.
To-do action	Configurable text to display as the task to be performed by the current To Do Person when in this state. Optional.
Entering document log comments is mandatory	If enabled, comments are mandatory. If disabled, comments can be entered but they are not mandatory.
Send to Meridian Portal for revision	If selected, and a user transitions to this workflow state in PowerUser or PowerWeb, the usual pane that allows you to select todo-persons is replaced with the **Select recipient in Meridian Portal project** pane where they can select the Meridian Portal users who are to receive the documents. This option is only available if the **Document access** option of the destination state is set to **Edit**. When using this option, make sure the Explorer synchronization job for the vault has the **Synchronize draft revision option** enabled. To learn more about this option, see the *Configure Synchronization Options* section of the *Meridian Enterprise Server Administrator's Guide*. This option is not available for QuickChange Workflow Definitions.

The project or workflow definition is now ready to be used.

Assign Property Values In a Workflow State

Each state in a workflow can assign or change property values when projects or documents are routed to that state. Property assignments can be useful for establishing defaults, due dates, and other metrics that depend on the workflow state itself.

To assign property values in a workflow state:

1. In Configurator, expand **Project** or **Workflow Definitions** in the configuration tree and select the workflow definition you want to edit.

   Its property pages appear in the right pane.
2. Click the **States** tab to display the current workflow.
3. Click **Edit**.
4. Double-click the state that you want to edit.

   The state's **Properties** page appears.
5. Click the **Property Assignments** tab.

   The current property assignments appear.
6. Choose one of the following options:
7. Use the **Add**, **Remove**, and **Remove All** buttons to configure the options described in the following table.
   - Double-click any cell to display the **Property** list for the next available property assignment.
   - The **Remove** and **Remove All** commands are also on the shortcut menu that is shown by right-clicking a property assignment.
   - Clearing the check box next to a property name is equivalent to clicking the **Remove** button. The assignment will be removed when you click the **OK** button.
8. Click **OK**.

   The **Properties** dialog box closes.
9. Click **OK**.

Workflow definition state property assignment options

Option	Description
Property	Select a property to assign a value when this state is achieved.
Value	Type a new value to assign to the property when this state is achieved.

Note:
Property assignments configured on workflow transitions override any property assignments configured on workflow states for the same property. For example, assume that a transition named **Release** routes to a state named **Issued**. If both the transition and the state are configured to assign different values to the same property, the property assignment on the **Release** transition prevails over the property assignment on the **Issued** state.

Create And Edit Transitions

Each transition in a workflow represents the change in an engineering project from one phase to another. The transition can implement rules that force the workflow to progress in a predetermined path. These rules can be based on:

- Properties of the document or project definition itself
- VBScript expressions that evaluate any system properties
- The status of document workflows or other project definition workflows

When transitions occur, they can assign project property values and display custom wizard pages to prompt users for required and optional information.

A workflow definition transition is an action that users run to move documents from one workflow state to another during the revision of a document. Its options control:

- Which transitions are equivalent within a batch of documents
- Local workspace unlocking of documents
- When transitions are visible to users
- When transitions can be executed and who can run them
- When the transition can be executed
- How it can be interlocked with the workflows of individual documents
- Who will perform work in the next state
- Wizard pages that appear for additional input
- How revisions are created
- Automatic property assignments

> **Note:**
> You cannot create new transitions for the QuickChange workflow definition. You can only edit the configuration options of the existing transitions.
>
> The configuration options for QuickChange workflow transitions are described on the following pages:
>
> - Configure Transition Visibility
> - Configure Transition Authorization
> - Create New Revisions In a Workflow Transition
> - Assign Property Values In a Workflow Transition

To create or edit a workflow definition transition:

1. In Configurator, expand **Workflow Definitions** in the configuration tree.
2. Select the workflow definition you want to edit.

   Its property pages appear in the right pane.
3. Click the **States** tab to display the current workflow.
4. Choose between two options:
   - Click the **Edit** button to modify the workflow.
   - To create a new transition, use the tools described in Draw a Workflow Diagram (document workflow) or Create a Project Workflow (project workflow).
5. To edit a transition, double-click the transition.

   The transition's **Properties** page appears.
6. On the **General** page, click options or type values using the descriptions in the following table.
7. Click **OK**.

   The **Properties** dialog closes.
8. Click **OK**.

Workflow definition transition general options

Option	Description
Display name	Type the name of the transition as you want it to appear to users. This name should reflect the purpose of the state in the workflow.
Name	A default internal name is calculated. Accept the default in most cases.
Icon	Select an icon to be shown next to this transition's name in the Meridian client applications.
Description	Type an optional description.
All transitions to the same destination state	The transitions of all items in the batch being routed to the same destination state will be executed. For more information, see Transition Equivalence.
Transitions with the same equivalence tag	The transitions of all items in the batch with the same equivalence tag will be executed. Type the tag in the input box. For more information, see Transition Equivalence.

Option	Description
All transitions from the same source state	The transitions of all items in the batch being routed from the same source state will be executed. For more information, see Transition Equivalence.
No other transition	No other transitions will be executed in the batch. For more information, see Transition Equivalence.
Release project copies of documents as master revisions	If the Meridian Advanced Project Workflow Module is installed and this document is a project copy, when this transition is executed the document is also released as a new revision of the master document from which it was copied in addition to releasing the document as a new revision of itself.
Update rendition	Generates a document rendition when this transition occurs. The new rendition will replace an existing rendition if it exists. This option is ignored if renditions are not generated for the vault (the **Use renditions option** is cleared as described in Configure General Vault Settings.)
Disable notification	If this transition is included in the actions of an event notification as described in Configure Event Notifications, disables sending notification email messages when this transition occurs.

Transition Equivalence

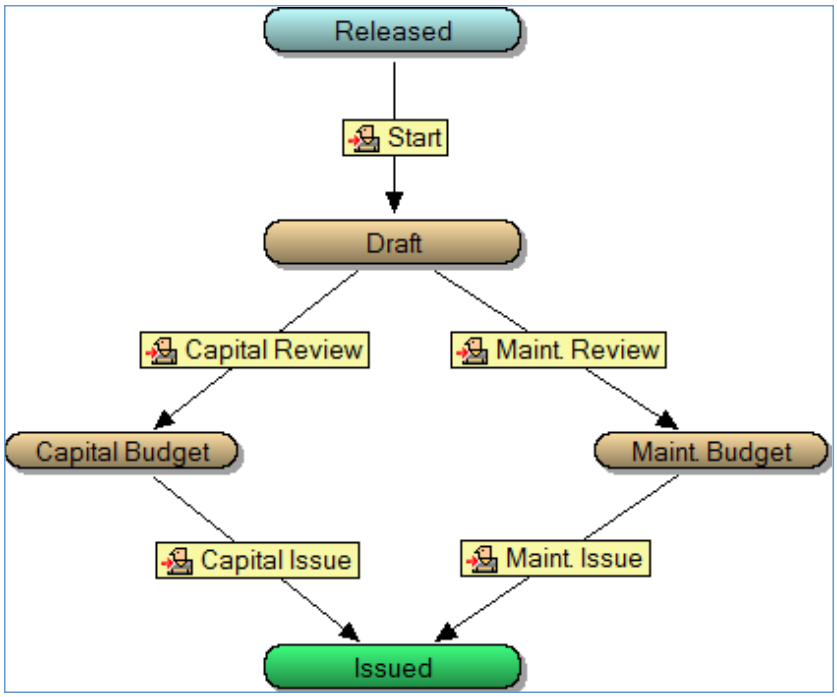
Transition equivalence is the ability to run the transitions of a batch of documents all at the same time, even if the documents are currently in different states or different workflows. Transition equivalence makes multiple transitions equivalent in terms of their effectivity on the change control of documents. Without transition equivalence, a batch of documents in different states cannot be routed at the same time. Instead, each document must be routed individually with its valid transitions.

Transitions can be made equivalent based on the following conditions:

- They have the same source state.
- They have the same equivalence tag.
- They have the same destination state.

An equivalence tag is simply a keyword that the transitions have in common. Equivalence tags are useful if the transitions cannot meet either of the other conditions, that is, the same source or destination states.

For example, consider the workflow definition in the following figure. The transitions **Capital Issue** and **Maint. Issue** have both been configured with the equivalence tag **Issue** (not shown).



If a batch of documents contains some that are in the state **Capital Budget** and some that are in **Maint. Budget**, they can all be routed to the **Issued** state in one batch because they have the same equivalence tag. Incidentally, they could also be routed if the transition equivalence options of both transitions were set to **All transitions to the same destination state.**

Configure Transition Document Control

By default, the changes to documents that reside in a project folder and that are under change by a user in their local workspace are uploaded to the vault automatically by their own workflows. This happens independent of the project workflow unless there are Interlocks configured. But if your business process requires that document changes be uploaded at a specific project workflow transition, the transition can be configured to do so automatically so that users don't have to upload the files manually.

> **Important!**
> Use this option with care. Documents that are simultaneously locked and downloaded to a different user's local workspace while the synchronization is processing are not detected and the transition will succeed.

The transition will:

- Upload to the vault any changed files from the user's local workspace who executes the transition
- Unlocks any documents that are locked by that user

Keep in mind:

- The transition may fail if some documents are locked by a user other than the one executing the transition.
- This option is supported only when a site cache is connected.
- Only documents in the project folder are synchronized to the vault and unlocked, not any references that reside outside the project folder.

To enable local workspace unlocking:

1. In Configurator, expand **Workflow Definitions** in the configuration tree and select the workflow definition you want to edit.

   Its property pages appear in the right pane.
2. Click the **States** tab to display the current workflow.
3. Click **Edit**.
4. Double-click the transition the transition that you want to configure.

   The transition's **Properties** page appears.
5. On the **Document Control** tab, click options or type values using the descriptions in the following table.

6. Click **OK**.

   The **Properties** dialog closes.

7. Click **OK**.

Document control options

Option	Description
Unlock all project documents from local workspace	Enable this option to upload changed files from the local workspace of the user who is executing the transition.

Configure Transition Visibility

Not all workflow transitions may be applicable for all documents, current property values, or other conditions. The **Visibility** page contains options that control when a transition is visible for users to select.

To configure transition visibility:

1. In Configurator, expand **Workflow Definitions** in the configuration tree and select the workflow definition you want to edit.

   Its property pages appear in the right pane.
2. Click the **States** tab to display the current workflow.
3. Click **Edit**.
4. Double-click the transition the transition that you want to configure.

   The transition's **Properties** page appears.
5. On the **Visibility** tab, click options or type values using the descriptions in the following table.
6. Click **OK**.

   The **Properties** dialog box closes.
7. Click **OK**.

Workflow definition transition visibility options

Option	Description
Apply the following filters to show the transition	Select this option to configure property value conditions that must be met to show the transition. 1. Click **Add**. 2. Enable Show system properties to show the system properties in the **Property** list in addition to the custom properties. Double-click any cell to create a new condition using the default options. 3. In the **Match Scope** column, select either **selected document** or **Never**. 4. In the **Property** column, select the property to be evaluated. 5. In the **Condition** column, select the condition to evaluate. 6. In the **Value** column, type the value to evaluate. 7. To remove a condition, select it and click **Remove** or clear its check box. Clearing the check box next to a condition **Name** has the same effect as clicking the **Remove** button. The condition is removed when you click the **OK** button. 8. To remove all current conditions, click **Remove All**. You will also find the **Remove** and **Remove All** commands on the shortcut menu shown by right-clicking a condition. Select **All of these criteria** if all (Boolean AND operation) of the property value conditions must be met for the transition to be shown. Select **Any of these criteria** (Boolean OR operation) if all of the property value conditions must be met for the transition to be shown.

Note:
The options configured on this page are evaluated together with the options configured on the **Authorization** page to determine the effective visibility of a transition. For more information about transition visibility options, see Configure Transition Authorization.

Configure Transition Authorization

If not all workflow transitions should be available all of the time or for all users, you can configure the **Authorization** page contains options to control when users are allowed to run the transition.

To configure transition authorization:

1. In Configurator, expand **Workflow Definitions** in the configuration tree and select the workflow definition you want to edit.

   Its property pages appear in the right pane.
2. Click the **States** tab to display the current workflow.
3. Click **Edit**.
4. Double-click the transition that you want to configure.

   The transition's **Properties** page appears.
5. On the **Authorization** tab, click options or type values using the descriptions in the following table.
6. Click **OK**.

   The **Properties** dialog closes.
7. Repeat steps 4 to 6 for each transition that you want to configure.
8. Click **OK**.

Workflow definition transition authorization options

Option	Description
To allow executing the transition, this expression must be True	Select this option to type a VBScript expression that must be met to show the transition. Type a VBScript expression or click the Meridian Enterprise Script Editor button to build a VBScript expression. For information on using VBScript for configuration expressions including their limitations, see the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference*.
Allow the transition for members of these groups	Select this option to restrict the execution of this transition to the selected Meridian groups. Select the groups that you want to be able to run this transition.

Option	Description
Allow the transition for users with these roles	Select this option to restrict the execution of this transition to members of the selected Meridian security roles. Select the roles that you want to be able to run this transition.
If the user is not allowed to run the transition, show this message	Type text that will be shown if the VBScript expression evaluates to **False**.
Require electronic signature	If the Meridian FDA Module is enabled and configured, enable this option if you want to require users to enter their electronic signature credentials to run this transition.

Note:
The options configured on this page are evaluated together with the options configured on the **Visibility** page to determine the effective visibility of a transition. For more information about transition visibility options, see Configure Transition Visibility.

Apply An Interlock To a Workflow Transition

Workflow transition interlocks control whether or not a particular workflow transition is visible for execution. Interlocks are created independently of the project definition's workflow, but are applied by name to the transitions to which the interlocks should apply.

To apply a workflow transition interlock:

1. Create the necessary interlocks first.
2. Select the desired project definition in the configuration tree in the left pane of Meridian Enterprise Configurator.
3. Click the **States** tab in the right pane.

   The current workflow diagram displays in the right pane.
4. Click **Edit**.
5. Double-click the transition you want to edit.

   The **Properties** dialog for the transition appears.
6. Click the **Interlocks** tab.

   The interlocks for the transition are shown.
7. Enable the check boxes for your desired options and use the **Add**, **Remove**, and **Remove All** buttons to configure the options on the **Interlocks** tab from the descriptions in the following table.
   - Double-click any cell to create a new interlock using the default conditions.
   - You will also find the **Remove** and **Remove All** commands on the context menu by right-clicking an interlock condition.
   - Clearing the check box next to a condition's **Name** is equivalent to clicking the **Remove** button. The condition will be removed when the **OK** button is clicked.
8. Click **OK**.

   The **Properties** dialog closes.
9. Click **OK**.

Interlocks options

Option	Description
All of these Interlocks	Requires that all listed interlock conditions be met. Equivalent to applying the Boolean AND operator to the interlocks.

Option	Description
Any of these Interlocks	Requires that at least one of the listed interlock conditions be met. Equivalent to applying the Boolean OR operator to the interlocks.
Name	Type the internal name of an existing interlock listed on the **Interlocks** tab of the project definition. See Configure Interlocks,
Location	Choose from **Parent Project**, **Current Project**, or **Topmost Project**
Default Result	Choose from **True** or **False** to specify that the transition should be visible (True) or invisible (False) for a project folder in the position configured for the **Location** criterion in a project/sub-project hierarchy.

This completes the creation of the interlock conditions of a workflow transition. You can now continue to configure the workflow in any of the following topics.

Assign Property Values In a Workflow Transition

Each transition in a workflow can be assigned initial or changed property values when that transition occurs. Property assignments can be useful for establishing due dates and other metrics that depend on the workflow transition itself.

1. In Configurator, expand **Project** or **Workflow Definitions** in the configuration tree and select the workflow definition that you want to edit.

   Its property pages appear in the right pane.
2. Click the **States** tab to display the current workflow.
3. Click **Edit**.
4. Double-click the transition that you want to configure.

   The transition's **Properties** page appears.
5. Click the **Property Assignments** tab.

   The current property assignments for the transition appear.
6. Use the **Add**, **Remove**, and **Remove All** buttons to configure the options described in the following table.
   - Double-click any cell to display the **Property** list for the next available property assignment.
   - The **Remove** and **Remove All** commands are also on the context menu by right-clicking a property assignment.
   - Clearing the check box next to a property name is equivalent to clicking the **Remove** button. The assignment will be removed when the **OK** button is clicked.
7. Click **OK**.
8. Click **OK**.

Workflow definition transition property assignment options

Option	Description
Property	Select a property to assign a value when this transition occurs. Enable Show system properties to show the system properties in the **Property** list in addition to the custom properties.

Option	Description
Value	Type a value to assign to the property when this transition occurs. You can include any of the following system variables in a value to make the property more specific. • **%CURRENTUSER%**: Name of the current user. • **%CURRENTDATE%**: Current date expressed as a date data type that can be used to calculate past or future dates by adding or subtracting days, for example, %CURRENTDATE% + 30. • **%CURRENTDATETIME%**: Effective date and time of the vault database expressed in Greenwich Mean Time (GMT).

Property assignments configured on workflow transitions override any property assignments configured on workflow states for the same property. For example, assume a transition named **Release** routes to a state named **Issued**. If both the transition and state are configured to assign different values to the same property, the property assignment on the **Release** transition will prevail over the property assignment on the **Issued** state.

Apply Property Pages To a Workflow Transition

When a document is routed through a workflow based on a workflow definition, wizard pages can be shown when certain transitions are executed to request information from the user.

The wizard pages that you want to apply must already be created, as described in Create a New Property Page.

The values on a wizard page that is assigned to a workflow transition will be applied to the latest released revision of the document, not to the unreleased revision in the workflow. This can seem counter intuitive. The values are assigned before the transition executes that creates the new revision.

To apply property pages to a workflow transition:

1. In Configurator, expand **Workflow Definitions** in the configuration tree and select the workflow definition you want to edit.

   Its property pages appear in the right pane.
2. Click the **States** tab to display the current workflow.
3. Click **Edit**.
4. Double-click the transition that you want to configure.

   The transition's **Properties** page appears.
5. On the **Pages** page, select pages in **Available pages** and click the right arrow button to add them to the **Show as wizard page** list.

   To remove a wizard page from the list, select the page and click the left arrow button .
6. After you have selected the appropriate pages for the transition, use the up arrow button and down arrow button to arrange the order of the pages in the list.

   Their order determines the order in which they will display in the Meridian client applications, from left to right.
7. Click **OK**.

   The **Properties** dialog closes.
8. Click **OK**.

Configure Sub-Projects

Large, lengthy, or complicated engineering projects are often composed of numerous sub-projects in order to break down an overall project into more manageable pieces. Meridian Enterprise accommodates this kind of project organization through its ability for sub-projects to be nested within other projects. Essentially, for any project definition for which you want to allow sub-projects to be made, you configure the sub-project definitions that may be selected by users. However, sub-projects (children) cannot be created from the same project definition as the (parent) project. Only different project definitions are allowed.

To configure the allowable sub-projects of a project definition:

1. Select the desired project definition in the configuration tree in the left pane of Meridian Enterprise Configurator.
2. Click **Edit**.
3. Click the **Sub-Projects** tab.

   The list of other project definitions in the vault appears.

   If no project definitions are listed, the vault contains only one project definition, the one you are currently configuring. You must create at least one other project definition in order to select it for use for sub-projects.
4. Select the project definitions that you want to allow as sub-projects.

   The selected project definitions will appear with the available folder types on menus for end users. Clear the project definitions that you do not want to allow as sub-projects.
5. Click the **OK** button on the **Sub-Projects** tab to save your changes.

   This completes the configuration of the sub-projects of a project definition. You can now continue to configure the project definition in any of the following topics.

Interlocks

Interlocks are rules based on the values of certain properties of project folders or of documents. Interlocks determine the validity, and therefore visibility, of a project workflow transition to be executed. The validity is based on the organization's business procedures.

Interlocks are defined in a project definition and are applied to the transitions of the project definition's workflow or a document workflow definition. Since interlocks are independent of any specific workflow transition, they can be used with any workflow transition.

The system supports two kinds of interlocks: project workflow interlocks and document workflow interlocks. Project workflow interlocks can be based upon the current project or its sub-projects. Document workflow interlocks can be based upon all, any, or no documents contained with a project folder. Both types of interlocks can affect the workflow of the project itself, its parent project, or the topmost project of a project hierarchy.

Project workflow example

As an example of a project workflow interlock, assume the following:

- According to the organization's business procedures, any electrical sub-projects should not start before their overall project has started.
- A simple project folder hierarchy consisting of one project folder that contains several sub-project folders.
- The project folder was created from a project definition that uses a folder type named **Commercial**.
- The Commercial folder type uses a property named **Is Under Revision**.
- The sub-project folders were created from a project definition with a workflow that contains a transition named **Start**.

In this example, a project workflow interlock should be created based on the **Commercial** folder type, the **Discipline** property equal to **Electrical**, and based on the project itself. After the interlock has been created, it should be applied to the **Start** transition of the project definition of the sub-project folder.

Document workflow example

As an example of a document workflow interlock, assume the following:

- According to the organization's business procedures, no sub-projects should complete until all their project plan, detailed drawing, and specifications documents have been released from change.
- The vault is configured with document types named **Project Plan**, **Detail Drawing**, and **Specification**.
- The document types use a property named **Status**.
- The sub-project folders were created from a project definition with a workflow that contains a transition named **Complete**.

In this example, a document workflow interlock should be created based on the **Project Plan**, **Detail Drawing**, and **Specification** document types, the **Status** property equal to **Released**, and based on all documents. After the interlock has been created, it should be applied to the **Complete** transition of the project definition of the sub-project folder.

Configure Interlocks

Interlocks are rules based on the values of certain properties of project folders or of documents. Interlocks are created and managed within a project definition and are applied individually to the transitions of the project definition's workflow or to document workflow definitions. A project definition can have any number of interlocks, each defining a rule based on certain conditions that should apply to a transition in a project or document workflow. Project interlocks apply to the current project or its sub-projects. Document interlocks can apply to all, any, or no documents contained with a project folder. Document interlocks can affect the project itself, its parent project, or the topmost project of a project hierarchy.

To configure interlocks:

1. Select the desired project definition in the configuration tree in the left pane of Meridian Enterprise Configurator.
2. Click **Edit**.
3. Click the **Interlocks** tab.

   The list of interlocks applied to the current project definition appears.
4. Use the **Add**, **Edit**, **Remove**, and **Remove All** buttons to apply or modify interlocks from the descriptions in the following table.
5. Click **OK**.

Interlocks options

Option	Description
Add Project Workflow Interlock or Add Document Workflow Interlock	Creates a new interlock. See Create a Project Workflow Interlock or Create a Document Workflow Interlock depending on which button was clicked.
Edit	Opens the selected interlock for editing.
Remove	Removes the selected interlock from the list of those applied to the current project definition.
Remove All	Removes all interlocks from the list of those applied to the current project definition.

This completes the configuration of the interlocks of a project definition. You can now continue to configure the workflow in any of the following topics.

Create a Project Workflow Interlock

A project workflow interlock is a rule that can be used to determine the validity of a project workflow transition to be executed. The interlock is composed of one or more folder types and one or more property values for the project folder itself or any number of its sub-projects.

To create a project workflow interlock:

1. Select the desired project definition in the configuration tree in the left pane of Meridian Enterprise Configurator.
2. Click **Edit**.
3. Click the **Interlocks** tab.

   The list of interlocks applied to the current project definition appears in the right pane.
4. Click **Add Project Workflow Interlock**.

   The **New Workflow Interlock Properties** dialog box appears.
5. Type information on the **General** tab for the options described in the following table.
6. Click **OK**.

General options

Option	Description
Display Name	The editable name of the interlock for System Administrators. Required.
Name	The permanent Meridian internal name of the interlock for System Administrators. Required.
Description	A description of the interlock for System Administrators. Optional.

This completes the basic configuration of a project workflow interlock definition. You can now continue to configure the project workflow interlock in any of the following topics.

Create an Interlock Folder Filter

An interlock folder filter restricts the specific folder types, out of all possible folder types, to which the interlock should apply. Since the project definition of every sub-project has a folder type assigned to it, by specifying certain folder types, the filter also restricts the sub-project to which the interlock should apply.

To create an interlock folder filter:

1. Select the project definition in the left pane of Meridian Enterprise Configurator.
2. Click **Edit**.
3. Click the **Interlocks** tab.

   The list of current interlocks appears in the right pane.
4. Select the project workflow interlock you want to edit and click the **Edit** button.

   The **Properties** dialog of the interlock appears.
5. Click the **Folders** tab.

   The list of available folder types appears.

   If the interlock does not have a **Folders** tab, but **Document Type Filters** and **Logical Scope** tabs instead, you have selected a document type interlock. See Create a Document Workflow Interlock,
6. Select the folder types used by sub-projects that you want to interlock with this project definition.

   Clear the folder types that you do not want to interlock.
7. Click **OK**.
8. Click **OK**.

This completes the configuration of an interlock folder filter for a project definition. You can now continue to configure the interlock in any of the following topics.

Create a Project Workflow Interlock Property Filter

A project workflow interlock property filter restricts the specific folder property values that sub-projects must have for this interlock to apply.

To create a project workflow interlock property filter:

1. Select the project definition in the left pane of Meridian Enterprise Configurator.
2. Click **Edit**.
3. Click the **Interlocks** tab in the right pane.

   The list of interlocks applied to the current project definition appears in the right pane.
4. Select the interlock you want to edit and click the **Edit** button.

   The **Properties** dialog of the interlock appears.
5. Click the **Property Filters** tab.

   The list of current property filters appears.
6. Enable the check boxes for your desired options and use the **Add**, **Remove**, and **Remove All** buttons to configure the options on the **Property Filters** tab from the descriptions in the following table.
   - Double-click any cell to create a new property filter using the default conditions.
   - You will also find the **Remove** and **Remove All** commands on the context menu by right-clicking an interlock condition.
   - Clearing the check box next to a filter's **Name** is equivalent to clicking the **Remove** button. The condition will be removed when the **OK** button is clicked.
7. Click **OK**.

   The **Properties** dialog closes.
8. Click **OK**.

Property Filters options

Option	Description
all these conditions are met	Requires that all listed property filters be met. Equivalent to applying the Boolean AND operator to the filters.
any of these conditions are met	Requires that at least one of the listed property filters be met. Equivalent to applying the Boolean OR operator to the filters.
Property	Select a property to filter on its value.

Option	Description
Condition	Select a condition by which to filter the value of the property.
Value	Type the property value that will activate this interlock.
Show system properties	By default, only custom properties are listed. Enable this option to also see the system properties.

This completes the configuration of an interlock property filter of a project definition. You can now continue to configure the interlock in any of the following topics.

Configure Interlock Objects And Scope

The objects and scope to which an interlock applies determine what is affected by the interlock, either the project itself or any number of sub-projects.

To configure an interlock's objects and scope:

1. Select the desired project definition in the configuration tree in the left pane of Meridian Enterprise Configurator.
2. Click **Edit**.
3. Click the **Interlocks** tab in the right pane.

   The list of interlocks applied to the current project definition appears in the right pane.
4. Select the interlock you want to edit and click the **Edit** button.

   The **Properties** dialog of the interlock appears.
5. Click the **Objects and Scope** tab.

   The selected object and scope options applied to the interlock appear.
6. Enable the options on this tab from the descriptions in the following table.
7. Click **OK**.

   The **Properties** dialog closes.
8. Click **OK**.

Objects and Scopes options

Option	Description
Project itself	This interlock will only apply to the current project.
Subprojects of this Project	This interlock will only apply to sub-projects of the current project.
All subprojects	This interlock will apply to all sub-projects of the current project.
Any subproject	This interlock will apply to any sub-projects of the current project.
No subprojects	This interlock will apply if there are no sub-projects of the current project.

This completes the configuration of the interlock objects and scope of a project definition. You can now continue to configure the project definition in any of the following topics.

Create a Document Workflow Interlock

A document workflow interlock is a rule that can be used to determine the validity of a project workflow transition to be executed. The interlock is composed of one or more document types and one or more property filters based for any number of documents within a project or sub-project.

To create a document workflow interlock:

1. Select the desired project definition in the configuration tree in the left pane of Meridian Enterprise Configurator.
2. Click **Edit**.
3. Click the **Interlocks** tab.

   The list of interlocks applied to the current project definition appears in the right pane.
4. Click **Add Document Workflow Interlock**.

   The **New Workflow Interlock Properties** dialog box appears.
5. Type information on the **General** tab for the options described in the following table.
6. Click **OK**.

   The **Properties** dialog closes.
7. Click **OK**.

General options

Option	Description
Display Name	The editable name of the interlock for System Administrators. Required.
Name	The permanent Accruent internal name of the interlock for System Administrators. Required.
Description	A description of the interlock for System Administrators. Optional.

This completes the basic configuration of a document workflow interlock. You can now continue to configure the interlock in any of the following topics.

Create an Interlock Document Type Filter

An interlock document type filter restricts the specific document types, out of all possible document types, to which the interlock should apply.

To create an interlock document type filter:

1. Select the project definition in the left pane of Meridian Enterprise Configurator.
2. Click **Edit**.
3. Click the **Interlocks** tab.

   The list of current interlocks appears in the right pane.
4. Select the interlock you want to edit and click the **Edit** button.

   The **Properties** dialog of the interlock appears.
5. Click the **Document Type Filters** tab.

   The list of available document types appears.
6. Select the document types that you want to interlock with this project definition.

   Clear the document types that you do not want to interlock.

   > **Note:**
   > Clearing all document types, in effect, removes all document type filters and interlocks all document types.
7. Click **OK**.

   The **Properties** dialog closes.
8. Click **OK**.

This completes the creation of an interlock document type filter. You can now continue to configure the interlock in any of the following topics.

Create a Document Workflow Interlock Property Filter

A document workflow interlock property filter restricts the specific property values that documents contained in a project folder made from this project definition must have for this interlock to apply.

To create a document workflow interlock property filter:

1. Select the project definition in the left pane of Meridian Enterprise Configurator.
2. Click **Edit**.
3. Click the **Interlocks** tab in the right pane.

   The list of interlocks applied to the current project definition appears in the right pane.
4. Select the interlock you want to edit and click the **Edit** button.

   The **Properties** dialog of the interlock appears.
5. Click the **Property Filters** tab.

   The list of current property filters appears.
6. Enable the check boxes for your desired options and use the **Add**, **Remove**, and **Remove All** buttons to configure the **Property Filters** tab from the descriptions in the following table.
   - Double-click any cell to create a new property filter using the default conditions.
   - You will also find the **Remove** and **Remove All** commands on the context menu by right-clicking an interlock condition.
   - Clearing the check box next to a filter's **Name** is equivalent to clicking the **Remove** button. The condition will be removed when the **OK** button is clicked.
7. Click **OK**.

   The **Properties** dialog closes.
8. Click **OK**.

Property Filters options

Option	Description
all these conditions are met	Requires that all listed property filters be met. Equivalent to applying the Boolean AND operator to the filters.

Option	Description
any of these conditions are met	Requires at least one of the listed property filters to be met. Equivalent to applying the Boolean OR operator to the filters.
Property	Select a property to filter on its value.
Condition	Select a condition by which to filter the property's value.
Value	Type the property value that will activate this interlock.
Show system properties	By default, only custom properties are listed. Enable this option to also see the system properties.

This completes the creation of a property filter for a document workflow interlock. You can now continue to configure the interlock in any of the following topics.

Configure Interlock Scope

An interlock's logical scope restricts which, if any, of the documents must meet the other criteria of the interlock in order to be affected by the interlock.

To create an interlock property filter:

1. Select the project definition in the left pane of Meridian Enterprise Configurator.
2. Click **Edit**.
3. Click the **Interlocks** tab in the right pane.

   The list of interlocks applied to the current project definition appears in the right pane.
4. Select the interlock you want to edit and click the **Edit** button.

   The **Properties** dialog of the interlock appears.
5. Click the **Logical Scope** tab.

   The current interlock scope appears.
6. Configure the options on the **Logical Scope** tab from the descriptions in the following table.
7. Click **OK**.

   The **Properties** dialog closes.
8. Click **OK**.

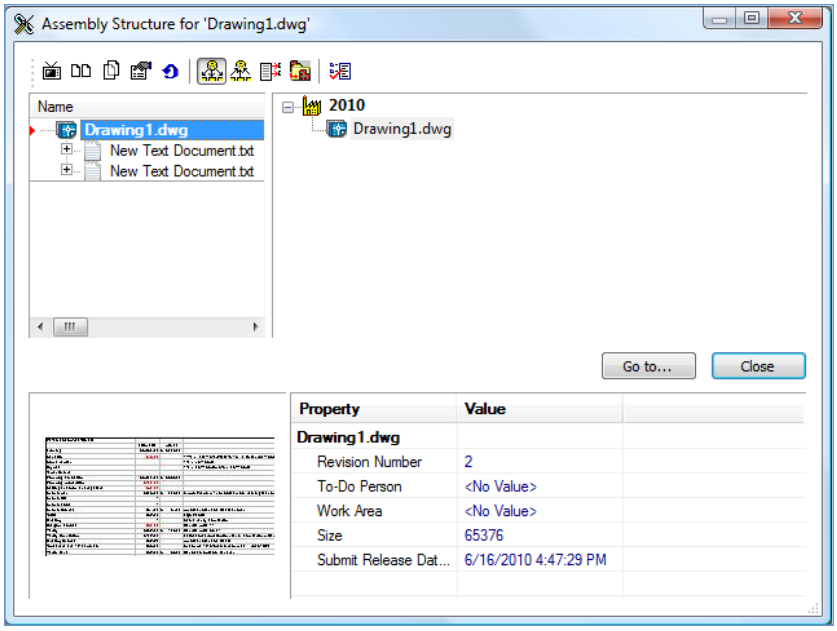
Logical Scope options

Option	Description
All Documents	All documents in the project folder must meet the criteria of the interlock in order to activate the interlock.
Any Document	One or more documents in the project folder must meet the criteria of the interlock in order to activate the interlock.
No Documents	No documents in the project folder must meet the criteria of the interlock in order to activate the interlock.

This completes configuration of an interlock's scope. You can now continue to configure the interlock in any of the following topics.

Configure Reference Browser Properties

End users can view the relationships between master documents and project copies with the **Show Project Copies** command. The command displays a reference browser that, among other things, shows a limited set of document properties as shown in the following figure.



The document properties that are visible in rows in the lower pane are configurable by a System Administrator in the Meridian Enterprise Configurator as the Folders View Columns.

For more information on master documents and project copies, see the *Project Folders* section of the *Meridian Enterprise User's Guide*.

To configure the properties visible in columns in the upper-left pane of the reference browser:

1. In Meridian Enterprise Configurator, expand **Environment** in the configuration tree in the left pane.
2. Click **Column Collections** in the left pane.

   The **Column Collections** tabs appear in the right pane.
3. Click the **Project Copies Columns** tab in the right pane.

   The current configured properties appear in the **Displayed columns** list.
4. Use the left and right arrow buttons to move properties from the **Available columns** list to the **Displayed columns** list.

5. To display folder properties in the reference browser, select the folder type to which the properties are applied in the **From Folder of type** list.

   The folder type's properties appear below the folder type name. Use the lower-right arrow button to move properties from the property list to the **Displayed columns list**.
6. Use the up and down arrow buttons to rearrange the order in which the properties appear in the reference browser.
7. Click **OK**.

Configure Managed Change

Under normal circumstances, you should not need to configure the behavior of the Managed Change functions. The default settings are adequate for most environments. However, they can be configured to meet unique requirements or for compatibility with customization.

1. Choose between two options:
   - To configure AllowWorkflowAcrossProject or CreateProjectCopyForRetired:
     a. In Configurator, expand **Environment** in the configuration tree and select **Vault Settings**.

        The vault's settings appear in property pages in the right pane.

     b. Click the **Settings** tab.

        The **Settings** page appears in the right pane.
   - To configure CreateProjectCopyInWebAccessMode, CreateProjectCopyInSelectedFolder, DiscardProjectRefs, DoNotRerouteRefs2Master, or RtmRenditionAction:
     a. In Configurator, expand **Environment** in the configuration tree and select **Application Link Settings**.

        The settings for each application link appear in property pages in the right pane.

     b. Click the **Application Integration** tab.

        The **Application Integration** page appears in the right pane.
2. Click **Edit**.

   To export the settings file to your computer, click the **Export** button. This can be useful if you want to edit the file in another text editor. You can then copy your changes to the Clipboard and paste them into Configurator.
3. Locate the section of the file titled **[Vault]** and locate the setting that you want to configure.

   Create the section and setting if they do not already exist.
4. To change the default behavior, set the value of the setting to one of the values described for the setting in the following table.

   If the setting begins with a semicolon (;) character, the setting is disabled. Enable the setting by removing the semicolon.
5. Click **OK**.

   The setting becomes effective the next time that the client applications are started or open the vault.

Managed Change settings

Setting	Description
AllowWorkflowAcrossProjects	If set to **Y** (the default is **N**), allows a batch of documents that reside in separate project folders to be routed together in the same operation. Enable this setting with care because the documents may have references that reside in other projects and the results might not be as expected.
CreateProjectCopyInWebAccessMode	If set to **Y** (the default is **N**) and a project copy is made, this setting suppresses the **Reference Explorer** dialog box in the PowerUser client and also suppresses the resolution and copying of referenced documents. This causes the PowerUser to behave similar to PowerWeb for this operation. This can dramatically shorten the time required to create project copies that reference many other documents. This setting is the most beneficial in vaults that contain many references to asset tags related to a maintenance management system. We do not recommend enabling this option in vaults that do not contain asset tags but instead references are primarily to assembly parts or related documents.
CreateProjectCopyForRetired	If set to **Y**, project copies can be made from retired documents. If set to **N** (default), retired documents cannot be copied.
CreateProjectCopyInSelectedFolder	If set to **Y** (default), Meridian creates project copies in the project folder that is selected by the user. If customized event procedures attempt to move the document to a different location, folder locking errors can occur if more than one procedure is active at the same time. When set to **N** (No), the copy is made without any parent folder. Meridian then moves the document to its destination folder as calculated by the Field-Path definition, if it is defined. If the Field-Path definition is not defined, the copy is moved to the folder that is current at the time that the copy is made.

Setting	Description
DiscardProjectRefs	Controls the disposition of references between project copies made in the same project folder when one of the project copies is discarded. The possible values are: **0**: Discard all references (default) **1**: Do not discard references made by the CAD links **2**: Do not discard custom (manual) references **3**: Do not discard any references. When set to a value other than **0**, references between project copies will be redirected to the master document if one of the project copies is discarded from the project. If the remaining project copy is released from the project, both master documents will then be related by a reference that did not exist prior to the project copies being made. In some scenarios, such as assembly relationships, this might be desirable. In other scenarios, such as custom references, this might not be desirable. Carefully consider and test all scenarios with all available reference types and your business processes before changing this setting in a production environment.
DoNotRerouteRefs2Master	If set to **Y** (Yes), incoming references are not rerouted to the master document after a project copy is released. The references remain routed to the inactive project copy. The default is **N** (No).
RtmRenditionAction	Controls the disposition of the master document rendition when a project copy is released as a new revision of the master document. The possible values are: **0**: Copy the rendition from the project copy to the master document. This is the default. **1**: Queue the master document in Publisher to regenerate the master document rendition. Use this setting if Publisher is configured to add a watermark to the previous version of the rendition **2**: Do nothing. This setting is provided for compatibility with custom event handlers that determine what is done.

Lookup Lists

Meridian can present lists of predefined values from which users can select when editing property pages or wizard pages. Depending on your specific needs, Meridian offers the following types of value lists from which to choose:

- **Lookup lists**: Suitable for small lists that seldom change. Lookup lists may have only one column of data. The data is stored within the Meridian vault and edited with the Configurator. Users with the **Can Type Unlisted Values** privilege for a specific lookup list may type new values within the Meridian client applications.
- **Tables**: Suitable for moderate to large lists. Tables may have multiple columns of data. The data is stored outside of the Meridian vault in Microsoft Access format. Users cannot add new values with the Meridian client applications.
- **Queries**: Suitable for lists of data that reside in existing external data sources. Users cannot add new values with the Meridian client applications.

Assigning a value list to a property is done on the **Validation** page of the property in Configurator, as described in Restrict User Input.

Configuring each type of value list is described in the following topics.

Create And Edit Lookup Lists

Lookup lists are suitable for small lists of standard values that seldom change or that you want users to be able to add new values to without modifying the vault's configuration. Lookup lists may have only one column of data, so they are not as useful for cascading value lists as using tables. Lookup list data is stored within the Meridian vault and may be edited with the Configurator. Users with the **Can Type Unlisted Values** privilege for a specific lookup list may type new values with the Meridian client applications.

> **Note:**
> The total of all lookup list values must not exceed 4K characters and no more than 255 characters per value.

To create or edit a lookup list:

In Configurator, expand **Lookup Lists** in the configuration tree to display the existing lookup lists.

1. Choose between three options:
   - To create a new lookup list:
     a. On the **Edit** menu, select **New Lookup List**.

        A new lookup list is added to the configuration tree and its property pages appear in the right pane.

     b. Proceed to step 2.
   - To edit an existing lookup list:
     a. Select the lookup list.
     b. Click **Edit**.
     c. Proceed to step 2.
   - To delete an existing lookup list:
     a. Select it in the configuration tree.
     b. On the **Edit** menu, select the **Delete** button.
2. On the **General** page, type a name for the lookup list in **Display Name**.

   This name will not be visible to users. A default internal name is calculated in **Name**. Accept the default in most cases.
3. To restrict the use of this report to specific users, click the **Privileges** button.

   For more information about security roles, see Security Roles.
4. Click the **Entries** tab to edit or add values.

   The existing list values are shown.

5. To change an existing entry, select it and click **Remove Entry**.

   Then click **Add Entry** and type the correct value.
6. To add a new value, click **Add Entry** and type the value.
7. To import entries from a text file, click the **Import** button.

   Each value must reside on a separate line in the text file.
8. Click **OK**.

> **Note:**
> To edit multiple entries, first export the existing list to a text file by clicking the **Export** button. Then edit the text file with any text editor. Clear the existing list by clicking the **Clean All** button. Last, import your edited values by clicking the **Import** button and selecting the edited text file.

Create And Edit Tables

Standard value tables are suitable for moderate to large lists that you do not want users to be able to edit. Tables may have multiple columns of data, which makes them much more useful for cascading value lists, that is, lists that only show values related to the selection of a specific value in another value list. A single table is also useful for storing multiple columns of related data that can be used as value lists for multiple properties. Table data is presented on a property page by way of a VBScript expression.

Create a Table

To create a table:

1. In the Configurator, expand **Tables and Queries** in the configuration tree to display the existing tables and queries.
2. On the **Edit** menu, select **New Table or Query**.

   The **Select Data Source Type** dialog box appears.
3. Select **Table** and click **OK**.

   A new table is added to the configuration tree and its property pages appear in the right pane.
4. On the **General** page, type a name for the table in **Display Name**.

   This name will not be visible to users. A default internal name is calculated in **Name**. Accept the default in most cases. Select **Include values when exporting configuration** if you want the table data to be exported along with the table's definition when the vault configuration is exported. This can be useful if you want to import this table into another vault configuration without having to manually copy the table.
5. Click **Apply**.
6. Click the **Columns** tab to add columns to the table.
7. Click **Add**.

   The **Add New Column** dialog box appears.
8. Type a name in **Column name**, select a data type for the column from **Column type**, and click **OK**.

   The column is added to **Available lookup list columns**.

   > **Note:**
   > Column names cannot be the same as any Microsoft Jet reserved words.

9. To change the order in which the new column is displayed, select the column and click the arrow buttons in the upper-right corner of the page.

   > **Note:**
   > After you save the table's definition in step 11, you cannot change the columns' order using the Configurator. You must use the native database administration tools instead. If the table is stored in Microsoft Access, you can open the table in Microsoft Access using the **Open in Microsoft Access** button in the lower-left corner of the page when not editing the table in Configurator.
   >
   > Microsoft Access must be installed on the current computer to open the file successfully.

10. Repeat steps 6 to 8 for each column that you want to create.
11. Click **OK**.

Edit Existing Table

To edit an existing table:

1. In the Configurator, expand **Tables and Queries** in the configuration tree to display the existing tables and queries.
2. Select the table that you want to edit.
3. Click **Edit**.
4. Follow the appropriate procedures below.
5. Click **OK**.

Edit a Column Name

To edit a column name:

1. Click the **Columns** tab.

   The existing columns are shown.
2. Click the column name that you want to edit.

   The column name becomes editable.
3. Edit the column name and click **Apply**.

   The column name is changed.

Edit Table Entries

To edit table entries:

1. Click the **Entries** tab.

   The existing data is shown.

2. Edit the existing values or click the asterisk (*) in the last row of the table to create a new row.

   If the table is stored in Microsoft Access, you can edit the table in Microsoft Access using the **Open in Microsoft Access** button in the lower-left corner of the page when not editing the table in Configurator. Microsoft Access must be installed on the current computer to open the file successfully.

3. Click **Apply**.

Sort Table Entries

To sort the table entries:

1. Click the **Entries** tab.

   The existing entries are shown.

2. Click **Sort On**.

   The **Configure Sort Order** dialog box appears.

3. Select the columns upon which you want the entries sorted.
4. To change the column order of the sorting, select a column name and click **Move Up** or **Move Down** accordingly.
5. Click **OK**.
6. Click **Apply**.

Remove a Column

To remove a column:

1. Click the **Columns** tab.

   The existing columns are shown.

2. Select the column that you want to remove and click the **Remove** button.

   To remove all of the column definitions, click the **Remove All** button.

3. Click **Apply**.

Restrict Security Privileges for a Table

By default, all security roles are granted all privileges to new tables and tables that are imported to a vault's configuration.

To restrict the security privileges for a table:

1. In the Configurator, expand **Tables and Queries** in the configuration tree to display the existing tables and queries.
2. Select the table for which you want to set privileges.
3. Click **Privileges**.

   The **Roles and Privileges** dialog for the table appears.
4. Select the check box for each privilege (row) that should be granted for each security role (column) and click **OK**.

   Privileges may also be granted together with other objects as described in Manage Security Roles.

   You may now create a VBScript function to retrieve data from the table, as described in the *Meridian Enterprise VBScript API Reference*.

   If the table data is stored in Microsoft Access, all of the tables for the same vault are stored in an Microsoft Access database located in a subfolder of the `BC-Meridian Extensions` folder on the Meridian server. The name of the subfolder is the same as the name of the vault where it is used. The name of the database is `<VaultName>$LL.MDB`. For example, the database for a Meridian vault named MyVault would be:

   `<Drive>:\BC-Meridian Extensions\MyVault\MyVault$LL.MDB`

Cascading Value Lists

Cascading value lists filter the values available for one property based on values previously selected for other properties. They are useful to help users select only correct combinations of related property values.

For example, refer to the following table of standard values for the properties **Name**, **Project**, **Contract**, and **Contact**. Without cascading value lists, a user could easily select unrelated values. Cascading value lists would only present valid values for **Project** that are related to the value selected for **Name**, values for **Contract** that are related to the value selected for **Project**, and values for **Contact** that are related to the value selected for **Contract**.

Example cascading value list data

Name	Project	Contract	Contact
Addison Homes Ltd.	AHL-1678-UC	1678UA-A01	Bill Higgins
Addison Homes Ltd.	AHL-1678-UC	1678UA-A01	Jock Wallace
Addison Homes Ltd.	AHL-2006-03	JR54	Jane Foresyth
Blue Sky Construction	CY345	CTN-56782	Hans Lustenhower
Blue Sky Construction	CY345	CTN-56782	Jim Wallace
Blue Sky Construction	CY345	CTN-76554A	John Wilson
Blue Sky Construction	CY345	CTN-76554A	Steve Maloney
Blue Sky Construction	CY346	CTN-4511-C2	Edwin Forsythe
Blue Sky Construction	CY346	CTN-4511-C2	Jim Robinson
James Properties	JP1165-A	ZD43567	Dan Smith

Configuring lookup lists is described in the following topic. The preceding example table would require four levels of cascading value lists. The same technique can be used for any number of interrelated properties.

Configure Cascading Value Lists

Cascading value lists are configured by writing a VBScript function for each property that will retrieve only the values related to the value already selected for a different property. The functions are based on the Meridian **GetValues** methods, which are further described in the *Query Object* article of the *Meridian Enterprise VBScript API Reference*. The functions are typed as a validation rule for each property.

The following example procedure creates four levels of cascading value lists and assumes that a standard value table named **Clients** is used to store the data. The example data is shown in the table in Cascading Value Lists. A standard value query may also be used by specifying the **Vault.Query** property instead.

To configure cascading value lists:

1. In Configurator, on the **Edit** menu, select **Edit Events**.

   The Meridian Enterprise Script Editor appears, showing the vault's existing VBScript event procedures, functions, and other code. For information on customizing the Meridian event procedures, see the *Meridian Enterprise VBScript API Reference*.

2. Scroll to the bottom of the existing code, and create a new function similar to the following code to present a list of values for the first (top) level property (**Name**) of the cascading value lists:

   ```
   Function GetClients
     GetClients = Vault.Table ("Clients").GetValues (Null, Null,
   "Name", True, "Name")
   End Function
   ```

   This function retrieves all values from the **Name** column of the **Clients** table.

3. Click **OK**.

4. Select **This expression** and type **GetClients** on the **Validation** page of the **ClientName** property.

5. On a new empty line in the Meridian Enterprise Script Editor, create a new function similar to the following code to present a list of values for the next lower (second) level property (**ProjectNumber**) of the cascading value lists:

   ```
   Function GetClientProjects
     GetClientProjects = Vault.Table ("Clients").GetValues ("Name",
   Document.ClientName, "Project", True, "Project")
   End Function
   ```

   This function retrieves only values from the **Project** column of the **Clients** table based on the value selected for **Document.ClientName** at that moment.

6. Click **OK**.
7. Select **This expression** and type **GetClientProjects** on the **Validation** page of the **ProjectNumber** property.
8. On a new empty line in the Meridian Enterprise Script Editor, create a new function similar to the following code to present a list of values for the next lower (third) level property (**ProjectNumber**) of the cascading value lists:

   ```
   Function GetClientProjectContracts
     GetClientProjectContracts = Vault.Table ("Clients").GetValues
   (Array ("Name", "Project"), Array (Document.ClientName,
   Document.ProjectNumber), "Contracts", True, "Contracts")
   End Function
   ```

   This function retrieves only values from the **Contracts** column of the **Clients** table based on the value selected for **Document.ClientName** and **Document.ProjectNumber** at that moment.
9. Click **OK**.
10. Select **This expression** and type **GetClientProjectContracts** on the **Validation** page of the **ContractNumber** property.
11. On a new empty line in the Meridian Enterprise Script Editor, create a new function similar to the following code to present a list of values for the next lower (fourth and final) level property (**ContactName**) of the cascading value lists:

    ```
    Function GetClientProjectContractContacts
      GetClientProjectContractContacts = Vault.Table
    ("Clients").GetValues (Array ("Name", "Project", "Contract"),
    Array (Document.ClientName, Document.ProjectNumber,
    Document.ContractNumber), "ContactName", True, "ContactName")
    End Function
    ```

    This function retrieves only values from the **ContractName** column of the **Clients** table based on the value selected for **Document.ClientName**, **Document.ProjectNumber**, and **Document.ContractNumber** at that moment.
12. Click **OK**.
13. Select **This expression** and type **GetClientProjectContractContacts** on the **Validation** page of the **ContactNames** property.

In all of the preceding example functions, the fourth argument of the **GetValues** method is **True**. This is to ensure that the [Distinct] SQL query argument is also True, which ignores duplicate values.

> **Note:**
> When using column names that contain spaces, you must enclose the column name within square brackets, for example: "[Column name with spaces]".

Create And Edit External Data Queries

External data queries are suitable for standard value lists that reside in existing external (to the Meridian vault) OLE DB data sources such as in Meridian Enterprise Server, SQL Server, Oracle, Excel, or text files. These can be useful for reusing project, customer, or related document data stored in other information systems.

Notes about this Functionality

- You will need an OLE DB connection string and user account credentials for the external data source. You might need to consult with the data source's System Administrator to obtain this information.
- Users cannot add new entries to an external data source from the Meridian client applications. The data can only be edited by the data source's native application or by VBScript. To edit external data using VBScript, construct `SQL INSERT` or `SQL UPDATE` query statements and run them with the **Vault.ExecSQL** method described in the *Meridian Enterprise VBScript API Reference*.
- If the data source does not reside on the Meridian server, ensure that the account under which the AutoManager EDM Server service is run can access that location. If necessary, change the EDM Server service account.
    - If you use SQL Server, see *Configure the SQL Server Account Used By Meridian* in the *Meridian Enterprise Administrator's Guide* .
    - If you use Oracle, see *Configure the Oracle Account Used By Meridian* in the *Meridian Enterprise Administrator's Guide*.
- If SQL Server or Oracle is used for the database of the Meridian vault, do not attempt to store the tables used by these queries in the same database as the Meridian vault. Instead, create a new database in SQL Server or Oracle for the tables. Accruent does not support storing query tables in the same database as the Meridian vault.

Create an External Data Query

To create an external data query:

1. In the Configurator, expand **Tables and Queries** in the configuration tree to display the existing tables and queries.
2. On the **Edit** menu, select **New Table or Query**.

   The **Select Data Source Type** dialog box appears.

3. Select **Query** and click **OK**.

   A new query is added to the configuration tree and its property pages appear in the right pane.

4. On the **General** page, type a name for the query in **Display Name**.

   This name will not be visible to users. A default internal name is calculated in **Name**. Accept the default in most cases.

5. Click the **Query** page to define the query.

   The query's parameter options appear.

6. Type a valid OLE DB connection string in **Connection string** or click the **Connection String** hyperlink to build a connection string.

   The **Data Link Properties** dialog box appears. For assistance in creating a connection, click the **Help** button.

   > **Note:**
   > The user name and password typed in the **Data Link Properties** dialog are not shown in the **Connection string** text box for increased security.

7. Type the name of an existing table or view in the data source in **From**.

   A query may also be typed. To calculate the table name, view name, or query from existing vault properties, enable the **VBScript** option and click the Meridian Enterprise Script Editor button to build a VBScript expression. For information on using VBScript for configuration expressions including their limitations, see the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference*.

   For more information on valid values for **From**, see Using the FROM Clause on the Microsoft Developer Network (MSDN) SQL Server Developer Center website.

8. Click the **Test** button to preview the results, which will appear in the data grid.

9. Click **OK**.

   You may now create a VBScript function to retrieve data from the query, as described in the *Accruent Meridian Enterprise VBScript API Reference*.

Edit a Query

To edit an existing query:

1. In the Configurator, expand **Tables and Queries** in the configuration tree to display the existing tables and queries.
2. Select the query.
3. Click **Edit**.

4. Click the **Query** tab.

   The existing query parameters are shown.

5. If necessary, edit the existing value for **Connection string** or click the **Connection String** hyperlink to build a connection string.

   The **Data Link Properties** dialog box appears. For assistance in creating a connection, click the **Help** button.

6. If necessary, edit the existing value for **From**:

   - If the **Use Enterprise Server lookup table** option is selected, select the table from the list.

     This setting queries the external lookup list in Meridian Portal using the Cloud API for lookup lists.

   - If the **VBScript** option is enabled, click the Meridian Enterprise Script Editor button to edit the VBScript expression. For information on using VBScript for configuration expressions including their limitations, see the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference*.

   > **Note:**
   > For more information on valid values for **From**, click the **From** hyperlink, which will display reference information from the Microsoft Developer Network (MSDN) SQL Server Developer Center website.

7. Click the **Test** button to preview the results.

Delete a Query

To delete a query:

1. In the Configurator, expand **Tables and Queries** in the configuration tree to display the existing tables and queries.
2. Select the query.
3. On the **Edit** menu, select **Delete**.

Security Roles

Security roles are a very important part of configuring a vault. Security roles determine which users can perform which actions on which documents. Security roles are named sets of security privileges. Each security privilege controls a particular Meridian command or function that can be either granted or revoked. Meridian users or groups are assigned to security roles for specific folders in a vault using the Meridian client applications.

By default, users can perform the same actions on documents regardless of the document type. If additional control is required, the privileges of security roles can be different for each document type. This is called *document type security* and is configured with the **Use document type security** option on the **General** page of a vault's **Environment** settings, as described in Configure General Vault Settings.

When this option is enabled, the actions that users can perform on documents are determined both by the user's role and the document type. When you combine this option with assigning users to different roles for different folders, you can meet virtually any possible security requirement. An example would be users that have different privileges for the different document types that reside in different project folders based on their functional roles in the projects.

Manage Security Roles

Each Meridian vault can have any number of security roles, but the fewer there are, the easier they are to manage and assign.

To manage security roles:

1. In Configurator, on the **Vault** menu, select **Roles and Privileges**.

   The **Roles and Privileges** dialog box appears showing the current security roles that have been configured, if any.

2. To view the privileges for custom objects in the vault such as navigation views, reports, lookup lists, document types (if document type security is enabled), and so on, select the **Show object privileges** check box in the lower-left corner of the window.

   The custom object names appear in blue text.

   > **Note:**
   > - When the **Use document type security** option is enabled for a vault , the **Document** privileges group that would otherwise apply to all document types is removed from the **Privileges** column. The privileges for each document type can then be found below the name of each document type in the **Document Types** group.
   > - Custom command names do not appear in the list until after their **Can Execute** privilege has been created by clicking the **Privileges** button at least once as described in Create And Edit Custom Commands.

3. Follow the appropriate procedures below.

Security Role Behavior

- Changes to existing roles take effect immediately. New roles must be assigned to vault folders as described in *Assign Security Roles to a Folder* in the *Meridian Enterprise User's Guide*.
- By default, new vaults have no security roles assigned and the first role that is assigned is granted exclusive access to the vault until other security roles are assigned. Create the role with the highest level of access first (for example, Administrator) and assign the system's administrators to it at the root of the vault before assigning any other security roles. This will prevent you from accidentally denying System Administrators access to the vault and assigning other roles. It will also grant System Administrators access to the entire vault unless role inheritance is overridden by assignments at any folders.

Important!
Before configuring security, be sure to create a rescue account to ensure you do not accidentally deny access to all System Administrators. To learn how to create a rescue account, see the *Create a Rescue Account For Security Administration* article in the *Meridian Enterprise Administrator's Guide*.

- By default, folders inherit their security role assignments from their parent folder recursively all the way to the root of the vault. This makes setting security for the entire vault as easy as assigning roles just once at the root of the vault.

  Role assignments for specific folders may then be overridden, if necessary, as described in *Assign Security Roles to a Folder* in the *Meridian Enterprise User's Guide*.
- After configuring and testing the roles in a vault, create a Windows user group for each role. The groups should be domain or local groups, as described in *Meridian Support For Microsoft Active Directory* in the *Meridian Enterprise Administrator's Guide*. Then, assign the Windows user groups to roles in the vault. You may then easily add new users to the system by simply assigning them to the correct Windows user group without the need to change the role assignments in the vault.
- To export, import, or clear the security role assignments of a folder and its sub-folders, see *Assign Security Roles to a Folder* in the *Meridian Enterprise User's Guide*.

Note:
If a user is a member of multiple roles assigned to the same folder, their effective rights in that folder are those of the more permissive role. Therefore, avoid assigning users to multiple groups that are assigned to roles applied to the same folders.

Add Security Role

Configure the role with the most privileges first, and then copy the privileges of that role to the next role. Clear unnecessary privileges from the new role. Repeat copying the privileges of the role and clearing privileges until all roles have been created.

To create a role:

1. Click the **New Role** button.

   The **New Role** dialog box appears.
2. Click options or type values using the descriptions in the table below.
3. Click **OK**.

   A new column is added to the **Roles and Privileges** window with the copied privileges.
4. Select or clear the check box in the **Privileges** column for that role.

   For information about each privilege, see Security Privilege Descriptions.

> **Note:**
> Privileges for tables created prior to Meridian 2010 are not available until after they have been created by clicking the **Privileges** button on the **General** tab of the table in Configurator.

5. When you are finished creating roles, click **OK**.

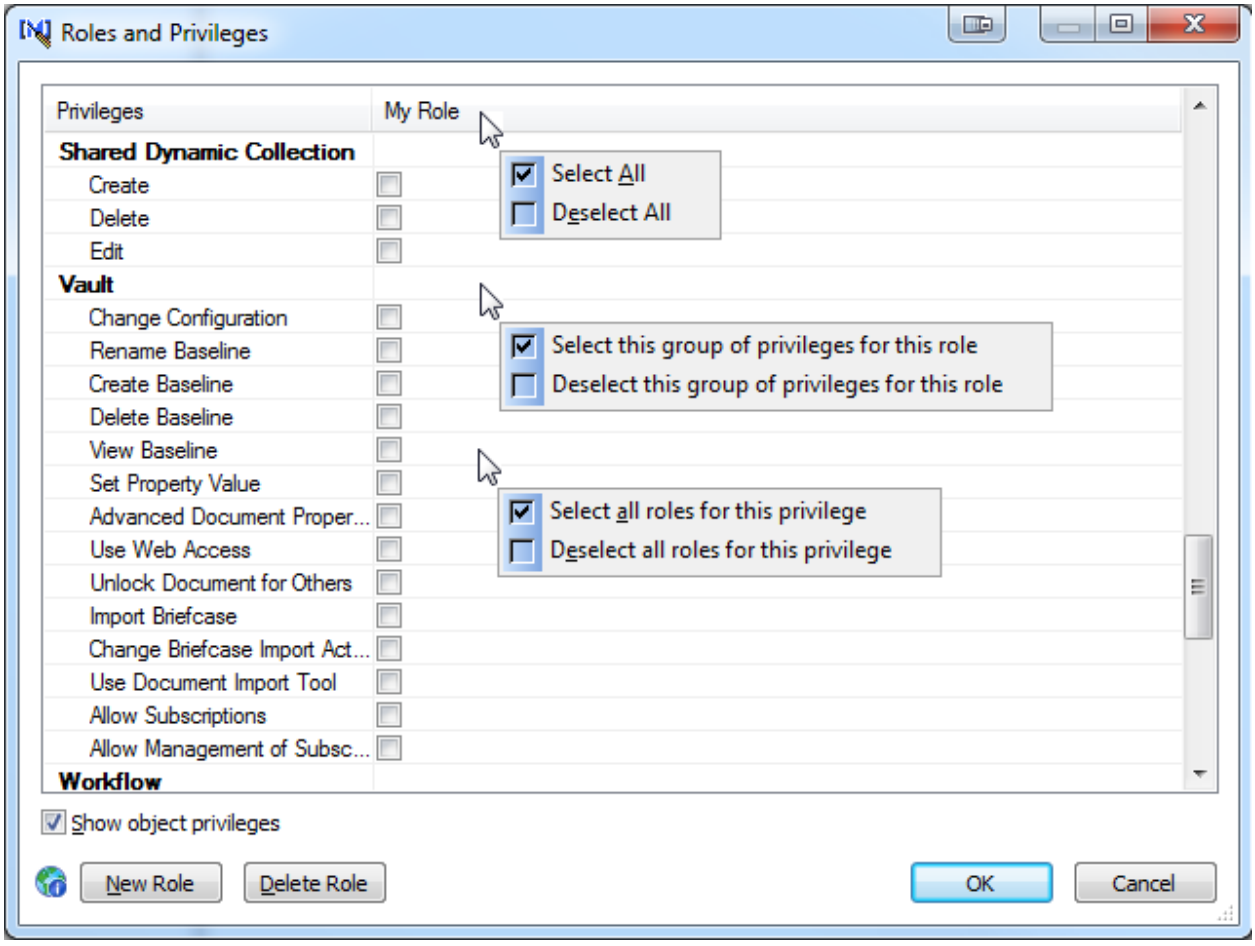
Edit Security Role

To edit a role:

1. Select or clear the check boxes in the **Privileges** column for the role.

   For information about each privilege, see Security Privilege Descriptions.

   Refer to the cursors in the below figure when reading the following instructions to quickly select or deselect groups of privileges or roles.



2. Choose one of the following options:

- To select or deselect all privileges for a role:
    a. Right-click the role name.
    b. Click **Select All** or **Remove All**.
- To select or deselect all privileges in a group for single role:
    a. Right-click the empty cell at the intersection of the privilege group name row and the role column.
    b. Click **Select this group of privileges for this role** or **Deselect this group of privileges for this role**.
- To select or deselect all roles for a single privilege:
    a. Right-click the name of a privilege.
    b. Click **Select all roles for this privilege** or **Deselect all roles for this privilege**.

3. Click **OK**.

Delete Security Role

To delete a role:

1. Click the **Delete Role** button.

   The **Delete Role** dialog box appears.
2. Select the role that you want to delete.
3. Click **OK**.

   The role is deleted.

Security Role Options

Security role options

Option	Description
Display Name	Type the name of the role as you want it to appear to users. This name should reflect the functional role of the user with respect to documents. Example names are Administrator, Manager, Author, Reviewer, and Viewer.
Name	A default internal name is calculated. Accept the default in most cases.
Copy privileges from	Select an existing role from the list that has privileges equal to or greater than the new role. This will make editing the privileges of the new role easier if you simply delete the privileges that do not apply to the new role.

Security Privilege Descriptions

There are many security privileges in Meridian. Privileges control access to document content, metadata, and redlines. They also control access to the commands that act upon documents. All privileges are effective regardless of the method with which the vault is opened, whether with one of the Meridian client applications or with Application Integration. Privileges are assigned to security roles, as described in Manage Security Roles, and then security roles are assigned to vault folders as described in *Assign Security Roles To a Folder* in the *Meridian Enterprise User's Guide*.

The topics that follow are organized according to object type and describe each privilege in more detail.

Asset Management Privileges

The Meridian asset management privileges are described in the following table.

Asset management privilege descriptions

Privilege	Description
Create Tags	Required to create new tags in the vault.
Edit Tag Assignments	Required to create and delete references to tags.
View Asset Management pages	Required to view the **Tags** and **Where Used** property pages in the Meridian Enterprise client applications.

Document Privileges

Document privileges control access to document data and commands within the folders to which the privileges have been assigned. If the **Use Document Type Security** option is enabled for the vault, these privileges are available for each document type.

Document privileges

Privilege	Description
Attach Hybrid Part	Allows the user to attach a hybrid part file to a hybrid main part document that is under change, either using drag and drop or, in the case of CAD documents, by saving the main part document with its native application when the application link is loaded. For information on creating hybrid document types, see Assign Document Types To Imported Files.
Change Document Type	Allows the user to change the document type of an existing document. It can be useful after a bulk import to assign the correct document types to each of the imported documents. Be aware that changing the document type may mean that some properties are not displayed anymore if the new document type uses different property pages. However, the associated values for these properties are not lost; they are just not shown. For more information on document types, see Create And Edit Document Types.
Change Properties	Allows the user to edit the property values of documents.
Change Revision Number Manually	Allows the user to change the revision number of documents manually. For information on configuration revision numbers, see Configure Document Revision Numbers.
Change waiting list	Allows the user with the privilege to change the priorities in the waiting list.
Confirm Superseded	Allows the user to confirm that a project copy is obsolete because the master document has changed since the project copy was made.
Confirm Merge	Allows the user to confirm that the changes that have been made to a project copy have been manually merged into the master document.
Convert to Hybrid	Allows the user to change the revision number of documents manually. For information on configuration revision numbers, see Configure Document Revision Numbers.
Copy Outside Vault	Allows the user to copy documents (including renditions) to outside the vault and download documents with PowerWeb. **Note:** • Users also need the **Edit in Application** privilege to be able to download source documents with PowerWeb. • PowerWeb users need this permission to be able to view documents (except with server-based viewers) because a copy of the document is made outside the vault in the user's Local Workspace.

Privilege	Description
Copy With References	Allows the user to copy documents including all references. For more information on using references, see Reference Types.
Delete Hybrid Part	Allows the user to delete a part from its parent hybrid document. For information about configuring hybrid document types, see Configure Document Type General Options. Hybrid documents can also be created during import as described in Assign Document Types To Imported Files.
Derive With References	Allows the user to derive a new document from an existing document, including all references. For more information on using references, see Reference Types.
Detach Hybrid Part	Allows the user to detach (but not delete) a part from its parent hybrid document. For information about configuring hybrid document types, see Configure Document Type General Options. Hybrid documents can also be created during import as described in Assign Document Types To Imported Files.
Discard from Project	Allows the user to discard a project copy from a project folder. The project copy is destroyed along with all changes made to it and cannot be restored.
Draft Print	Allows the user to print documents using the viewer. This privilege cannot prevent printing from Adobe Acrobat or Adobe Reader in Protected Mode. Batch printing from Adobe Reader is not supported.
Edit In Application	Allows the user to edit a document in its native application. **Note:** This privilege is also required for the **Replace Content**, **Release as Master Revision**, and **Lock Document** commands in PowerWeb in addition to the other more directly related privileges. Similarly, documents are locked in the user's local workspace by the **Download Document** and **Open** commands in PowerWeb if the user also has this privilege.
Edit Redlines Of Other Users	Allows the user to edit redlines of other users. After changing the annotations of other users, the owner of the annotation is changed to the current user. When a user makes an edit to the annotation of another user, the edit is recorded in the document log. **Important!** If you do not have roles defined in your vault, all users will have this privilege by default. If you do not want all users to have this privilege, create a role that has this privilege disabled, and then assign the role to all users in the fault.
Edit Redlines Outside Workflow	Allows the user to redline released documents.

Privilege	Description
Edit Rendition Redlines Outside Workflow	Allows the user to redline released document renditions.
Edit Retention Properties	Allows the user to edit the properties shown on the **Retention** property page.
Issue file name	Allows the user to use the **Issue New file name** command to rename the selected documents according to the calculation specified for their document type. For more information on calculating file names, see Create And Edit Document Types. **Note:** The **Rename** privilege is also required.
Link to Master	Allows the user to link a master document to a new document that was not copied from the master document.
Lock master document	Required to run the **Lock Master Document** command to prevent changes to the master document by document workflow or project copies.
Manually Synchronize Properties from File	Controls whether the Synchronize Properties from File command appears in the user interface for the user. This privilege will not prevent changes made by a workflow transition.
Manually Synchronize Properties to File	Controls whether the Synchronize Properties to File command appears in the user interface for the user. This privilege will not prevent changes made by a workflow transition.
Manually Synchronize References from File	Controls whether the Synchronize References from File command appears in the user interface for the user. This privilege will not prevent changes made by a workflow transition.
Manually Update Rendition	Allows the user to manually replace the content of document renditions using drag-and-drop.
Rename	Allows the user to rename a document after it has been created.
Release as master revision	Required to run the **Release as Master Revision** command to create a new master document. This privilege should be granted in project folders.
Send to Portal	Allows the user to send the selected document to a project in Meridian Portal.

Privilege	Description
Set Layer Translation Table	Allows the user to select the translation table to use for a particular document.
Show Revisions	Allows the user to view the revision history of documents.
Transfer to Next	When using waiting lists and there is no active project copy, allows the user to make the project copy, which is next in the waiting list, the active project copy and set its priority to zero.
Unlock from Project	Allows the user to unlock documents that are locked in a project folder. For more information about project folders, see Project Definitions.
Update hotspots	Allows the user manipulate hotspots. With this privilege, the user can: • add • delete • move and resize • update
Update master document	Required to run the **Release as Master Revision** command to produce a new revision of an existing master document. This privilege should be granted in the master documents branch of the vault.
View Content	Allows the user to view documents in the viewer window. Use the **View Rendition** privilege to control access to document renditions. **Note:** • This privilege is also required to download documents.
View Redlines	Allows the user to view redlines created using the viewer.
View Rendition	Allows the user to view renditions using the viewer. This privilege is also required to download renditions.
View Rendition Properties	Allows the user to view the **Rendition** property page.
View Rendition Redlines	Allows the user to view rendition redlines created using the viewer.

Document References Privileges

Document references privileges control access to the custom reference types that you have created. For more information about created reference types, see Create And Edit Reference Types.

Document references privileges

Privilege	Description
Create References Manually	When applied to the parent folder of a source document, allows the user to manually create references between the source document and other documents using the reference type.

Folder Privileges

Folder privileges control access to the folders to which the privileges have been assigned. Some of these privileges are only available for custom folder types.

Folder privileges

Privilege	Description
Assign Roles	Allows the user to assign other users to security roles for the folder. This privilege should be restricted to managers or administrators. As soon as a role is assigned to a folder, access to that folder is restricted to the users that are assigned to that role. For more information on creating and using security roles, see Manage Security Roles.
Copy Document	Allows the user to copy existing documents in the folder.
Create Child Folder	Allows the user to create subfolders of the parent folder to which this privilege is assigned. **Note:** This privilege is also required for users to create documents that would result in the creation of a new folder in the Field-Path definition. For more information on the Field-Path definition, see Field-Path Definition.
Create Child Folder Manually	Allows the user to create subfolders manually.

Privilege	Description
Create Document	Allows the user to create documents in the folder.
Create Document from Script	Allows vault script to create documents on behalf of the user in folders of that type. An example of such scripting is the **Document.MoveTo** method that technically creates a new document object. This privilege is intended to support customization in which the user is not granted the **Create Document** privilege for the destination folder. This privilege is only available for custom folder types, not normal folders.
Create folder of this type	Allows the user to create folders of the custom folder type. The folder type is the name of the group in which the privilege appears.
Delete Child Folder	Allows the user to delete subfolders of the parent folder to which this privilege is assigned.
Delete Released Files from Shared Workspace	When the shared folder option **Delete documents from workspace when released from workflow** is enabled, this privilege allows the documents to be deleted if the user has not been granted the **Delete Document** privilege.
Create project copy from	Required to run the **Create Project Copy** and **Create Project Copy and Lock** commands on documents in the selected folder.
Create project copy in	Required to run the **Create Project Copy** and **Create Project Copy and Lock** commands with the selected folder as the destination.
Delete Document	Allows the user to delete documents from the folder.
Edit shared workspace settings	Allows the user to modify the options on the **Sharing details** group on the **Folder** tab of a folder that is configured as a shared workspace.
Link to Portal Project	Allows the user to link the current folder to a project in Meridian Portal.
List Content	Allows the user to view documents within the folder. A user that does not have this privilege cannot see the folder if the vault option **Hide documents and folders from users with insufficient privileges** is enabled. If the user does not have this privilege to the root folder of the vault and the **Hide vaults to which a user has no access** option is enabled for the EDM Server in the Meridian Enterprise Administrator, the vault will be hidden for that user in all vault selection dialogs and in PowerWeb.
Move Away From Folder	Allows the user to move documents to a different folder.

Privilege	Description
Override Duplication Rules Defaults	Allows the user to override the **Duplicator Default Action** setting of document types when using the **Copy with References** or **Derive with References** commands. For more information on this setting, see Create And Edit Document Types.
Purge Document	Allows the user to use the **Purge** command to permanently destroy documents.
Rename	Allows the user to rename folders.
Undelete Child Folder	Allows the user to recover deleted subfolders.
Undelete Document	Allows the user to recover deleted documents.
Unlock Document For Others	Allow the user to unlock documents that have been assigned to other users.

Lookup List Privileges

The lookup list privileges control access to edit the lookup lists configured for a vault. The **Show object privileges** option must be enabled for this privilege to be visible. For information about creating lookup lists, see Create And Edit Lookup Lists.

Lookup list privileges

Privilege	Description
Can Type Unlisted Values	Allows the user to add new values to lookup lists when editing document properties in the Meridian client applications.
Edit	Allows the user to edit this lookup list in Configurator. Also allows the user to add new values to lookup lists when editing document properties in the Meridian client applications.

Navigation View Privileges

Access to each navigation view is controlled by its own **Use Navigation View** privilege. The **Show Object Privileges** option must be enabled for this privilege to be visible.

Report Privileges

Access to each report is controlled by its own **Build Report** privilege and affects the entire vault. The **Show object privileges** option must be enabled for this privilege to be visible.

Scope Privileges

Access to each scope is controlled by its own **Can Use** privilege. The **Show object privileges** option must be enabled for this privilege to be visible.

Shared Dynamic Collection Privileges

The shared dynamic collection privileges control access to create, delete, edit, and query the shared dynamic collections of a vault.

Shared dynamic collection privileges

Privilege	Description
Create	Allows the user to create new shared dynamic collections.
Delete	Allows the user to delete existing shared dynamic collections.
Edit	Allows the user to edit existing shared dynamic collections.
Run Query	Access to each shared dynamic collection is controlled by its own privilege. The **Show object privileges** option must be enabled for this privilege to be visible.

Table Privileges

The table privileges control access to the values stored in a vault table.

Table privileges

Privilege	Description
Get entries	Allows the user to retrieve entries from a table.
Update entries	Allows the user to update existing entries in a table.
Add entries	Allows the user to add new entries to a table.
Delete entries	Allows the user to delete entries from the table.

Note:
These privileges do not apply to the **Vault.ExecSQL** method.

Vault Privileges

The vault privileges control access to data and commands that apply anywhere within a vault.

> **Note:**
> By default, users may still see the presence of vaults for which they have not been granted any privileges. They will be able to open them but they will not be able to see any documents. To hide a vault completely from vault selection dialog boxes, enable the **Hide vaults to which a user has no access** option of the EDM Server and do not grant the user the **List Content** privilege for the root folder of the vault.

Vault privileges

Privilege	Description
Advanced Document Properties	Allows the user to view all property data for documents in the **Advanced Document Information** dialog and to select from all properties in the **Find** dialog as described in the *Find* article in the *Meridian Enterprise User's Guide*. Users without this privilege are limited to the properties specified in the **Preferred for Search** column collection as described in .
Advanced Set Property Value	Allows the user to use the **Set Property Value** command in the Meridian client applications to set the property values of documents. As opposed to the **Set Property Value** privilege, this privilege allows the user to select the **Ignore Validation Rules** option of properties and to select from all possible properties, not just the default properties or the ones specified in the **Set Property Value** collection described in Configure Column Layouts.
Allow Subscriptions	Allows the user to subscribe to event notifications for documents.
Allow Management of Subscriptions of Others	Allows the user to manage the subscriptions of other users to event notifications for documents.
Change Configuration	Allows the user to edit the vault configuration with Configurator. This privilege must be assigned to a role that is assigned to the root of a vault in order to edit the configuration.
Configure Views and Reports	Allows the user to configure access to views and reports.
Create Baseline	Allows the user to create new baselines.
Delete Baseline	Allows the user to delete existing baselines.

Privilege	Description
Rename Baseline	Allows the user to rename existing baselines.
Set Property Value	Allows the user to use the **Set Property Value** command in the Meridian client applications to set the property values of documents. This privilege imposes restrictions unlike the **Advanced Set Property Value** privilege.
Use Document Import Tool	Allows the user to use the **Document Import Tool** to import documents from a database. For information about the **Document Import Tool**, see the *Document Import Tool* article in the *Meridian Enterprise User's Guide*.
Use Web Access	Allows the user to log in to vaults with PowerWeb.
View Baseline	Allows the user to view baselines.
View Audit Log	Allows the user to view the vault's audit log.

Workflow Privileges

The following privileges control access to workflow transitions and commands related to workflow states. These privileges apply to the workflows configured for document types. For more information on configuring document type workflow, see Configure Document Type Workflow.

Workflow privileges

Privilege	Description
Change Manager	Allows the user to assign a different workflow manager.
Change Released Document	Allows the user to change released documents.
Change To-Do Person	Allows the user to assign a different person to the current state of document type workflows.
Derive	Allows the user to use the **Derive Document** and **Derive with References** commands to create new documents.
Edit Redlines Inside Workflow	Allows the user to redline documents while the documents are in active workflows.

Privilege	Description
Edit Rendition Redlines Inside Workflow	Allows the user to redline document renditions while the documents are in active workflows.
Initiate	Allows the user to initiate workflows to create new revisions.
Release	Allows the user to release documents from workflows. **Note:** This privilege is required in order to save email messages in a vault with the Outlook link installed.
Release Quick Change	Allows the user to release documents from Quick Change workflows. **Note:** This privilege is also required for PowerWeb users to release Managed Change project copies.
Release Quick Change For Others	Allows the user to release documents that are in Quick Change workflows assigned to other users.
Replace	Allows the user to use the **Replace Document** and **Replace with References** commands to create new documents.
Retire	Allows the user to run the **Retire** transition to documents to the **Retired** state.
Review	Allows the user to run the transitions of the **Review** workflow state.
Revoke	Allows the user to revoke documents in active workflows.
Revoke Quick Change	Allows the user to revoke documents in Quick Change workflows.
Revoke Quick Change For Others	Allows the user to revoke documents that are in Quick Change workflows assigned to other users.
Start Quick Change	Allows the user to initiate Quick Change workflows for documents and to assign them to themselves. **Note:** This privilege is also required for PowerWeb users to create Managed Change project copies.
Start Quick Change For Others	Allows the user to initiate Quick Change workflows for documents and to assign them to other users.
Unretire	Allows the user to run the **Unretire** transition to route documents out of the **Retired** state.

Workflow Definition Privileges

The following privileges control access to workflow transitions and commands related to project workflow states. These privileges apply to the workflows configured for project definitions. For more information on configuring project workflow, see Create a Project Workflow.

Workflow Definition Privileges

Privilege	Description
Reassign	Required to reassign a workflow's project manager to another user.
Reroute within workflow	Required to reroute a workflow to a state that is normally invalid for the workflow.
Reroute within workflow from script	Required to reroute a workflow via VBScript to a state that is normally invalid for the workflow.

Reference Types

Very often, two or more documents may be related to each other. The documents may or may not reside in the same folder. These relationships may be of several kinds. One kind of relationship is content-related. This relationship is characterized by the content of the related documents and is established by the applications used to create the documents. Examples of content-related documents are:

- **AutoCAD X-Refs**: X-Refs are drawings that either reference other drawings or are themselves referenced by other drawings. This applies to all derivations of AutoCAD, including Architectural and Mechanical Desktop products.
- **AutoCAD sheet sets**: Sheet sets are drawing layouts that are printed together as sets.
- **Autodesk Inventor assemblies, parts, and drawings**: Autodesk Inventor assembly models incorporate part models, and Autodesk Inventor drawings incorporate views of assembly or part models.
- **SolidWorks assemblies, parts, and drawings**: Same as for Autodesk Inventor.
- **MicroStation model references**: MicroStation model references relate drawings to other models or layout views.

A second kind of relationship is revision-related. This relationship is characterized by the revisions of related documents and is established by Meridian when the revisions or versions are created. Examples of revision-related documents are:

- **Derived documents**: A new document is derived from an existing document.
- **Replacement documents**: A new document is created that replaces an existing document.
- **Master documents and project copies**: One or more copies of a master document are created for concurrent editing in different projects.

A third kind of relationship is business-related. This relationship is characterized by the business processes that use the related documents and must be established by the users of the documents. Examples of business-related documents are:

- Drawings and a bill of materials or sheet schedule.
- Drawings and specifications, installation and operations manuals, or design calculations.
- Project plans, schedules, and meeting minutes.

In order to represent these relationships in a Meridian vault, Meridian uses links called *references*. A reference is a link from one document to another that represents a specific relationship. Like many other things in Meridian, references are created from templates called *reference types*.

- A document may have any number of references to another document, called *outgoing references*.
- Conversely, a document may be referenced by any number of other documents, called *incoming references*.
- References between documents are created in the Meridian client applications by users as described in the *Create References* article in the *Meridian Enterprise User's Guide*.

Meridian can automatically create references for the first two kinds of relationships. The third kind of relationship requires custom references that are created in Configurator.

Creating and editing custom reference types are described in the following topic.

Create And Edit Reference Types

Reference types are the templates from which document references are created.

To create and edit reference types:

1. In Configurator, expand **Reference Types** in the configuration tree to display the existing reference types.

   Some reference types are included in vaults by default, and others are created automatically when optional Meridian modules are installed.

2. Choose between three options:
   - To create a new reference type:
     a. On the **Edit** menu, select **New Reference Type**.

        A new reference type is added to the configuration tree and its property pages appear in the right pane.

     b. On the **General** tab, click options or type values using the descriptions in the following table.

     c. On the **Document Types** tab, click options or type values using the descriptions in the following table.

   - To edit a reference type:
     a. Select the reference type.

     b. Click **Edit**.

     c. On the **General** tab, click options or type values using the descriptions in the following table.

     d. On the **Document Types** tab, click options or type values using the descriptions in the following table.

   - To delete a reference type:
     a. Select the reference type.

     b. On the **Edit** menu, select **Delete**.

3. Click **OK**.
4. If you want to prevent some users from creating references of this type, click **Privileges** and select the groups that you want to allow to create the references.

General Reference type options

Tab	Option	Description
General	Display Name	Type the name of the reference type as you want it to appear to users. This name should reflect the business relationship of the linked documents.
General	Name	A default internal name is calculated. Accept the default in most cases.
General	Destination	Select the document type from which this reference may be created. This option allows you to limit the document types that may use this reference type to only those for which it was created.
General	Source	Select the document type to which this reference may be created. This option allows you to limit the document types that may use this reference type to only those for which it was created.
General	When source document is copied, also copy reference to destination document	Also copies the references of this type for a source document that is copied.
General	Reference between documents can be created manually in Meridian clients	Allows the reference type to be created manually by users. Otherwise, it may not be selected. Disable this option only for references created programmatically. **Note:** This check box causes the rest of the settings on the **General** tab to appear.
General	Only if the source document is in an editable state	Restricts the manual creation of references of this type to source documents that are in a workflow.
General	Include to a Portal package	Allows you to specify that References belonging to the Reference Type should be included when a package is sent to Portal or an Export Package is created.
General	Is an integral part of source document and participates in all operations	If enabled, references of this type are always downloaded to the local workspace by applicable project copy commands.

Tab	Option	Description
General	Can participate in creating project copies of source document	If enabled, references of this type are only downloaded to the local workspace by the **Create Project Copy** command. This setting is also affected by the vault settings described in Configure the Assembly Options and by the **Duplicator Default Action** setting of each document type as described in Create And Edit Document Types.
General	Participates only in releasing project copies of source document to masters	If enabled, references of this type are uploaded from the local workspace by the **Release to Master** command. This setting is also affected by the vault settings described in Configure the Assembly Options and by the **Duplicator Default Action** setting of each document type as described in Create And Edit Document Types.
General	Is not involved in any project operations	If enabled, references of this type are never downloaded to the local workspace by project copy commands. **Note:** • This setting is not applied to document types that have their **Type** option set to **Hybrid document** as described in Configure Document Type General Options. • If this option is enabled, the client registry value of **SkipSyncForOpen** must be empty or absent as described in *HKEY_LOCAL_MACHINE\Software\Cyco\AutoManager Meridian\CurrentVersion\Client* article in the *Meridian Enterprise Administrator's Guide*. This setting is also affected by the vault settings described in Configure the Assembly Options and by the **Duplicator Default Action** setting of each document type as described in Create And Edit Document Types.
Document Types	Destination	Select the document type from which this reference may be created. This option allows you to limit the document types that may use this reference type to only those for which it was created.
Document Types	Source	Select the document type to which this reference may be created. This option allows you to limit the document types that may use this reference type to only those for which it was created.

Navigation Views

A navigation view is a multi-level graphical view of the contents of a vault. A navigation view looks and acts like Windows Explorer except that, instead of showing documents organized into folders where they reside, it shows documents organized according to the property values of the documents themselves. Navigation views make documents easier to find when users know information about documents other than their folder locations. For example, if a user is looking for all documents related to a specific manufacturer but the vault folder structure is organized according to a manufacturing plant's physical layout, the user will have difficulty finding all of the documents, which may be located throughout the vault in various folders. The user could perform a search, but a navigation view would be faster, easier to use, and would not place as much of a load on the Meridian server.

A vault can have any number of navigation views. Navigation views can be configured with

- Any combination of property values
- Different icons for each view level
- Document type filters that restrict view contents to specific document types
- Property filters that restrict view contents to specific property values
- Different columns related to the view's configuration

These features make navigation views a powerful solution for finding documents for a variety of user requirements. Navigation views are particularly well suited to finding documents using hierarchical information. Each level of the information hierarchy can correspond to a folder level in the view. As users open each level of the view, they are presented with subfolder choices that represent a subset of the current level's information.

Every vault contains the following default views, most of which you can edit, delete, or use as examples for your own designs.

Default navigation views

View	Description
Explorer	All documents within the folder structure where they reside in the vault. This structure may be controlled by the Field-Path definition, as described in Create the Initial Field-Path Definition. This view cannot be edited or deleted. For more information about the differences between the **Folders** view and other navigation views, see the *Folders View* article in the *Meridian Enterprise User's Guide*.

View	Description
All To-Do Lists	All documents with active workflows grouped by user name and the action to be performed.
Document Type – File Type	All documents grouped by document type and file type.
My To-Do List	All documents assigned to the current user grouped by the action to be performed.
Status – Person	All documents with active workflows grouped by current status and the user to which they are assigned.
Recent Documents	Up to 30 documents you add to the list by clicking the clock icon next to the filename in the **Document** tab.

Create And Edit Navigation Views

Well-designed navigation views meet the needs of every type of system user.

We recommend that you gather the search requirements of the system's various user types before creating new navigation views. Design each view on paper first, trying to consolidate the requirements of different user types into a single view wherever possible. Also strive to reduce the number of levels of each view to four or less to minimize the number of mouse clicks users must perform to find documents. Begin creating navigation views when your designs are optimized.

To create and edit navigation views:

1. In Configurator, expand **Views** in the configuration tree to display the existing navigation views.
2. Choose between three options:
    - To create a new navigation view:
        a. On the **Edit** menu, select **New Navigation View**.

        A new navigation view is added to the configuration tree and its property pages appear in the right pane.

        b. Proceed to step 3.
    - To edit a navigation view:
        a. Select the navigation view.
        b. Click **Edit**.
        c. Proceed to step 3.
    - To delete a navigation view:
        a. Select the navigation view.
        b. On the **Edit** menu, select **Delete**.
3. On the **General** page, click options or type values using the descriptions in the following table.

Navigation view general options

Option	Description
Display Name	Type the name of the navigation view as you want it to appear to users. This name should reflect properties or documents that it displays or the business purpose for which it is designed.
Name	A default internal name is calculated. Accept the default in most cases.
Can be used in the past	Allows this view to be selected when the user is viewing the vault as it existed in the past.
Flexible depth view	If enabled, the branches of the view can be different lengths, depending on the presence or absence of the property values of documents. If disabled (default), all branches of the view are the same length and all of the documents that are included in the view appear at the last level of each branch. **Note:** • Enabling this option makes the **Show a folder named <No Value> for documents that do not use this property** option unavailable on the **Levels** tab that is described in Configure the Levels of a View. • This option only hides branches when the document properties are Null. Null is different than Empty. Empty is considered a value. To set an empty value, use an empty string (""). A property is Null before it has been set to any value or if it has been set to Null with scripting.

4. To restrict the use of this view to specific users, click the **Privileges** button.

   For more information about security roles, see Security Roles.
5. Select or type options on the **Levels** page, as described in Configure the Levels of a View.
6. Select or type options on the **Document Type Filters** page, as described in Limit the Document Types Shown In a View.
7. Select or type options on the **Property Filters** page, as described in Limit the Documents Shown In a View.
8. Select or type options on the **Columns** page, as described in Configure Navigation View Columns.
9. If you need to give site specific access to a view and you have privileges to do so:
   a. Select the **Scope** page.
   b. Select the check boxes for the scopes that you want the view to be available for.
10. Click **OK**.

Configure the Levels of a View

The **Levels** tab specifies the property values that are used as folder names at each level of a navigation view.

To configure the levels of a view:

1. In Configurator, expand **Views** in the configuration tree to display the existing navigation views.
2. Select the view that you want to configure.

   The view's property pages appear in the right pane.
3. Click the **Levels** tab.

   The view's current levels as are shown.
4. Click **Edit**.
5. Choose one or more of the following options:
   - To edit an existing level, select the level.

     The level's property assignment and icon are selected at the bottom of the page.
   - To create a new level, select **<New Level>**.
   - To assign a property to the level, select a property from the list at the bottom of the page.

     The name of the property is applied to the selected level, the default folder icon is applied to the level, and a new undefined level is added to the view.
   - To assign a different icon to the level, select an icon from the list at the bottom of the page.

     The icon is applied to the selected level.
   - If some documents might not have a value for this property but should be shown in the view anyway, enable **Show a folder named <No Value> for documents that do not use this property**.
   - To arrange the hierarchy of the levels, select levels to move and click the **Up** and **Down** buttons to move them into the correct order.
   - To delete an existing level, select the level and click **Delete**.
6. Click **OK**.

Limit the Document Types Shown In a View

The **Document Type Filters** page specifies the document types that are shown in a navigation view.

To limit the document types shown in a view:

1. In Configurator, expand **Views** in the configuration tree to display the existing navigation views.
2. Select the view that you want to configure.

   The view's property pages appear in the right pane.
3. Click the **Document Type Filters** tab.

   The view's selected document type filters are shown.
4. Click **Edit**.
5. Select the check boxes next to the document types that should be shown in this view.

   Clear the check boxes next to the document types that should not be shown in this view.
6. Click **OK**.

Limit the Documents Shown In a View

The **Property Filters** page specifies property filters that determine which documents are shown in a navigation view.

To limit the documents shown in a view:

1. In Configurator, expand **Views** in the configuration tree to display the existing navigation views.
2. Select the view that you want to configure.

   The view's property pages appear in the right pane.
3. Click the **Property Filters** tab.

   The property filters for the view are shown.
4. Click **Edit**.
5. Choose between three options:
   - To add a property filter:
     a. Click **Add**.

        You can double-click any cell to create a new property filter using the default options.
     b. In the **Property** column, select the property to be evaluated.
     c. In the **Condition** column, select the condition to evaluate.
     d. In the **Value** column, type the value to evaluate.

        If a date type property is selected, the **Value** can be specified either by selecting a date from the calendar (default) or by entering an expression. To type an expression, right-click the current value, select **Type date expression** and type the expression. The expression can use the **%CURRENTDATE%** system variable to calculate acceptable dates. For example, **%CURRENTDATE% + 10** will include property values for the next ten days. The variable supports addition and subtraction operations.

        Similarly, the **%CURRENTUSER%** variable can be used in properties that specify a user name such as **To-Do Person** and **Manager** and will evaluate to the current user's name.

        If your organization uses waiting lists, you can use the value of the **Waiting PC Priority** property to create views that list active project copies and waiting project copies:

    - Empty: The first active project copy or waiting list functionality is not in use
    - Zero: Active project copy
    - > 1: Waiting project copy
    - 1: Next project copy
- To remove a property filter, select it and click **Remove** or clear its check box.

  Clearing a check box in the **Property** column is the same as clicking the **Remove** button. The condition is removed when you click the **OK** button.
- To remove all current property filters, click **Remove All**.

  You will also find the **Remove** and **Remove All** commands on the shortcut menu that opens when you right-click a property filter.

6. Choose between two options:
   - Select **All of these criteria** if all (Boolean AND operation) of the property filters must be met for a document to be shown in the view.
   - Select **Any of these criteria** (Boolean OR operation) if only some of the property filters must be met for a document to be shown in the view.
7. Click **OK**.

Configure Navigation View Columns

The **Columns** page specifies properties that are shown in a navigation view in addition to any that are specified on the **Levels** page.

To configure the **Columns** page options:

1. In Configurator, expand **Views** in the configuration tree to display the existing navigation views.
2. Select the view that you want to configure.

   The view's property pages appear in the right pane.
3. Click the **Columns** tab.

   The view's current columns are shown.
4. Click **Edit**.
5. To show a document property in the view, select a property in **Available columns** and click the right arrow button to add it to the **Displayed columns** list.

   To remove a property from the list, select the property and click the left arrow button .
6. To show a folder property in the view, select a folder type from **From folder of type** and then select a folder property and click the right arrow button to add it to the **Displayed columns** list.

   To remove a property from the list, select the property and click the left arrow button .
7. After you have selected the appropriate properties, use the up arrow button and down arrow button to arrange the order of the properties in the **Displayed columns** list.

   Their order determines the order in which they will display in the Meridian client applications, from left to right.
8. Click **OK**.

Reports

Meridian supports report definitions configured in Meridian Configurator or reports defined in third-party applications that use the Meridian Data Library as a data source. Meridian reports are configurable templates that users can select when building reports from the Meridian client applications. Report templates can also be used to automatically generate transmittal sheets that can be included in briefcases. These report templates define the properties in the report output, the format of the output, and optionally, the documents upon which the report is based. Most of a report's configuration entails specifying the report's format, which can be one of the following:

- Plain text file. The report data can be either unformatted or formatted using VBScript expressions.
- XML data with or without an XSLT stylesheet applied (produces an HTML file).
- Unformatted Microsoft Excel (up to 65535 records) or Microsoft Access (unlimited) data file.
- Microsoft Word (up to 1000 records) file formatted using a Microsoft Word template.

> **Note:**
> Briefcase transmittal sheets can also be generated by an external reporting application as described in Link To External Applications.

In addition to which report template they choose, users can specify an alternate output format, the output location, the documents upon which the report is based, and optionally, to append report data to an existing report.

For information about the Meridian Data Library, see the *Meridian Enterprise Administrator's Guide*.

Creating and configuring reports in Meridian Configurator are described in the following topics.

Create And Edit Reports

To create or edit a report:

1. In Configurator, expand **Reports** in the configuration tree to display the existing report definitions.
2. Choose between three options:
   - To create a new report:
     a. On the **Edit** menu, select **New Report**.

        A new report is added to the configuration tree and the report's property pages appear in the right pane.

     b. Proceed to step 3.
   - To edit an existing report:
     a. Select the report.

        The report's property pages appear in the right pane.

     b. Proceed to step 3.
   - To delete a report:
     a. Select the report.
     b. On the **Edit** menu, select **Delete**.
3. On the **General** tab, click options or type values using the descriptions in the following table.
4. To restrict the use of this report to specific users, click the **Privileges** button.

   For more information about security roles, see Security Roles.
5. Select options on the **Report Format** page as described in Formatting report output.
6. Select options on the **Report Data** page as described in Specify Report Properties.
7. Specify characters on the **Report Options** page if the report will use a standard text format.
8. If you need to give site specific access to a report and you have privileges to do so:
   a. Select the **Scope** page.
   b. Select the check boxes for the scopes that you want the report to be available for.
9. Click **OK**.

Report definition general options

Option	Description
Display Name	Type the name of the report as you want it to appear to users. This name should reflect the business purpose for which the report is designed.
Name	A default internal name is calculated. Accept the default in most cases.
Scope	Select an existing shared dynamic collection from the list for which the report should be a scope option for users. This option is useful for common reports that must always contain information about the same set of documents. Click **Definition** to edit the collection. If no collection is specified, the users must select a different scope for the report.

Specify Report Properties

Each report definition specifies the properties of each document that are output when the report is built.

To specify report properties:

1. In Configurator, expand **Reports** in the configuration tree to display the existing report definitions.
2. Select the report that you want to edit.

   The report's property pages appear in the right pane.
3. Click the **Report Data** tab.

   The report's current properties are shown. These properties are output to the report if users do not select a Microsoft Word or Excel report template, in which case the template specifies the properties that are output.

   > **Note:**
   > For reports formatted with a Microsoft Word template, properties used by the hyperlinks placed in the template must be included in the **Report properties** list.
4. Click **Edit**.
5. To include a property in the report, select a property from **Available properties** and click the right arrow button to add it to the **Report properties** list.
6. To remove a property from the list, select the property and click the left arrow button .
7. After you have selected the appropriate properties, use the up arrow button and down arrow button to arrange the order of the properties in the **Report properties** list.

   Their order determines the order in which they will appear in unformatted (not Word) reports, from left to right.
8. Select a property from **Sort on** to sort the rows (values) in the report.
9. To include document paths in the report, select options from **Calculated properties**.
10. Click **OK**.

Custom Commands

You can add custom commands to the vault to increase the functionality of your configuration. Custom commands can use any of the events, procedures, and objects available in VBScript. This generally limits command functionality to within a vault. To create custom functionality that extends outside of a vault, consider using external applications, as described in Configure External Pages and Link To External Applications or develop custom Visual Basic expressions as described in the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference Guide*.

Custom commands can appear as buttons on a property page or as items on the shortcut menus of documents or folders.

Custom commands have the following limitations:

- They can be restricted to specific security roles.
- They do not affect folder contents recursively.
- Their scope is different depending on the object that is selected by the user, as listed in the following table.

Custom command scopes

Selected object	Command scope
Normal folder	Documents within the folder
Empty custom folder type	The selected folder
Non-empty custom folder type	The selected folder and the documents that it contains
Document	The selected document

The commands are defined in the Meridian Enterprise Script Editor as described in the following topics and using the event procedures described in the *Meridian Event Procedures* article in the *Meridian Enterprise VBScript API Reference* Guide.

Create And Edit Custom Commands

You create a custom command by specifying how and where it appears to users, applying it to document types or folder types, and implementing its VBScript event procedures.

To create or edit a custom command:

1. In Configurator, expand **Commands** in the configuration tree to display the existing commands.
2. Choose between three options:
   - To create a custom command, on the **Edit** menu, select **New Command**.

     A new command is added to the configuration tree and its property pages appear in the right pane.
   - To edit an existing command, select the command and click the **Edit** button.
   - To delete an existing command, select the command and on the **Edit** menu, select **Delete**.
3. Type or select options on the **General** page using the descriptions in the following table.

Custom command options

Option	Description
Display name	Type the name of the command as you want it to appear to users as a button caption or shortcut menu item.
Name	A default internal name is calculated. Accept the default in most cases.
Type command script	Type a VBScript expression or click the Meridian Enterprise Script Editor button to build a VBScript expression. For information on using VBScript for configuration expressions including their limitations, see the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference*.
Submenu name	By default, custom command names appear on the folder or document shortcut menu together with the available Meridian Enterprise commands. To place custom commands on a submenu of the shortcut menu, type the name of the submenu as you want it to appear in the shortcut menu. All custom commands with the same value for this option will appear on the same submenu.
Sort priority	By default, custom command names appear grouped together on the folder or document shortcut menu and in alphabetical order. To configure a different order, type a number to set this command's position among the other custom commands.

Option	Description
Display line separator above the command	Enable this option to display a line above this command's name in the shortcut menu.
Reference types affected	If the command should also affect documents that are related to the documents that the user currently has selected, select **Automatic**, **Manual**, or both options. **Automatic** references are those created by the Meridian application links for AutoCAD, Microsoft Office, Autodesk Inventor, and so on. **Manual** references are those that users can create manually in the Meridian client applications. For more information on creating and using references, see References in the *Meridian Enterprise User's Guide*.
Execute recursively if applied to folders	If enabled, this command can be run on a selected folder and the command will execute for each document in the folder and its sub-folders.
Execute recursively for referenced documents	If enabled (default), this command can be run on a document and the command will execute for each child reference of the parent document.

4. Click the **Applies to** tab.

   A list of the document types and folder types to which this command can be applied appears.

5. Select each document type or folder type to which you want this command to be available.
6. Click the **Pages** tab.

   A list of the custom property pages appears.

7. Select pages that you want to appear when this command is executed, for example, to prompt the user for input before execution.
8. If you want the command to only be available to the members of particular security roles, click **Privileges** and select the **Can Execute** privilege for the roles.

   This creates the privilege for the new command and makes it available in the **Roles and Privileges** dialog box as described in Manage Security Roles. For more information about security roles, see Security Roles.

9. Click **OK**.

10. To make the command appear on the shortcut menus of the document types and folder types to which you applied it in step 6, select the command on the **Commands** page of the document types and folder types, as described in Create And Edit Document Types and Create And Edit Folder Types.
11. To add a button for the command to a property page, select the **Command** option when adding a panel element, as described in Configure the Property Type Of a Panel Element.

Confirmation Pages

In 2020 R2, we added VBScript support for implementing custom confirmation pages. Confirmation pages are custom dialog boxes which are triggered at certain points of a workflow, as part of a wizard, or as part of a command. There are multiple events that can be used to trigger a confirmation page. See examples of how confirmation pages can be implemented in our KnowledgeBase.

This topic describes the purpose of confirmation pages, their benefits and limitations, and provides a simplified script sequence to demonstrate where in a script confirmation pages can be triggered. In this topic you can also find the VBScript events that support confirmation pages, the properties and methods you can use to build confirmation pages, and how to add confirmation pages to your VBScript.

To learn more about creating and editing event procedures, see the *Create and Edit Event Procedures* article in the *Meridian Enterprise VBScript API Reference Guide*.

Background

When a user executes an operation in Meridian, it may be necessary to gather input or show information about the item being processed. What input is needed or what information should be shown can depend on the metadata of the item, and complex logic can be involved in making the decision.

In PowerWeb, the Meridian script is executed on the web server. Due to the nature of web applications, it is not possible to trigger a window to display in the browser from a script executing on the server. To address this, the Confirmation Page functionality has been added as an alternative to the **WinMsgBox** and **WinInputBox** functions.

Confirmation pages offer more user interface customization options than **WinMsgBox** and **WinInputBox**. There are more options for input fields and multiple inputs can be combined in a single page. This simplifies the data collection process.

However, there are limitations to when confirmation pages can be triggered. Displaying a window and gathering user input requires a round trip between the server and the browser. To initiate this process, additional events with the prefix **Pre**have been added. You can use the handlers for these events to control the display of input fields.

After processing the script, the browser will show a confirmation page. The user will view the information and enter the required data. Their input is then posted back to the server and can be read using script functions in the next event.

Simplified Script Sequence

The numbered list below describes the general sequence of events for confirmation pages in VBScript. This sequence can vary depending on the event type, and whether the confirmation page is part of a wizard.

The general sequence is:

1. The user selects a batch of items.
2. The user executes a command.
3. The **PreInitialize** event fires.
    - This occurs once for the entire batch.
    - Script logic can be added to this event to show information or gather input applicable to the entire batch.
4. The Confirmation Page for batch initialization is shown.
5. The **Initialize** event fires.
    - This occurs once for the entire batch.
    - In this event, the captured user input can be used to control the script processing. Often the input will be stored in global variables for use in later events.
6. The **PreBefore** event fires.
    - This occurs for each item selected by the user.
    - Script logic can be added to this event to show information or gather input applicable to the item being processed.
7. The Confirmation Page for the item is shown.
8. The **Before** event fired.
    - This occurs for each item selected by the user.
    - In this event, the captured user input can be used to control the script processing for the item being processed.
9. The actual operation is executed.
10. The **After** event is fired.
    - Script logic can be added to this event to show information applicable to the item that was processed.
11. If configured, an Information Page can be shown for the item.
12. The **Terminate** event is fired.

- This occurs once for the entire batch.
- Script logic can be added to this event to show information applicable to the entire batch; however, you cannot make changes to the batch at this time.

13. If configured, an Information Page can be shown for the batch termination.
    - This occurs once for the entire batch.
    - Only summary information is shown. It is not possible to gather user input in this page.

Supported Events

The following VBScript events support confirmation pages.These events are described in the following articles in the *Meridian Enterprise VBScript API Reference Guide*.

- Custom Command Events
- Document Copy/Move Events
- Document Project Copy Events
- Document Type Workflow Events
- Workflow Definition Events

Supported VBScript Events

Event Type	Event	Description
Custom	PreExecute	Used to add a confirmation page before a custom command has been executed.
Custom	PreInitialize	Used to add a confirmation page before a custom command is initialized.
Custom	Terminate	Occurs after the command has executed. This event does not support making changes to the batch, but you can use it to display information about the batch.
Document Copy / Move	PreBeforeCopyWithReferences	Occurs before the BeforeCopyWithReferences event. This event is used to add a confirmation page before the **Copy with References Wizard**.
Document Copy / Move	PreInitializeCopy	Used to add a confirmation page before the InitializeCopy event. This event can be used as part of a wizard.

Event Type	Event	Description
Document Copy / Move	PreBeforeCopy	Used to add a confirmation page before the BeforeCopy event. This event can be used as part of a wizard. PreBeforeCopy is not called when executing Copy with References. Copy with References will call PreBeforeCopyWithReferences.
Document Copy / Move	TerminateCopy	Occurs when a copy event is terminated. Applies only to **Copy** and **Paste** commands. This event does not support making changes to the batch, but you can use it to display information about the batch.
Document Generic	PreInitializeChangeDocumentType	Used to add a confirmation page before the InitializeChangeDocumentType event. This event can be used as part of a wizard.
Document Generic	PreBeforeChangeDocumentType	Used to add a confirmation page before the BeforeChangeDocumentType event. This event can be used as part of a wizard.
Document Project Copy	PreInitializeReleaseToMaster	Used to add a confirmation page before the InitializeReleaseToMaster event. This event can be used as part of a wizard.
Document Project Copy	PreBeforeReleaseToMaster	Used to add a confirmation page before the BeforeReleaseToMaster event. This event can be used as part of a wizard.
Document Workflow	PreBeforeRevokeWF	Occurs when a document type workflow is revoked by a user. This event is used to add a confirmation page before the revoke a document workflow action.
Document Workflow	PreInitializeRevokeWF	Occurs when a document type workflow is revoked by a user. This event is used to add a confirmation page before initializing the action.
Document Workflow	TerminateRevokeWF	Occurs when a document type workflow is revoked by a user. This event does not support making changes to the batch, but you can use it to display information about the batch.

Event Type	Event	Description
Workflow Definition	PreInitializeExecuteTransition	Occurs at batch-level, before a workflow transition is initialized. This event can be used to add a confirmation page before initializing the transition.
Workflow Definition	InitializeExecuteTransition	Occurs at batch-level, when a workflow transition is initialized. This event applies the parameters specified in the confirmation page for the batch.
Workflow Definition	PreBeforeExecuteTransition	Occurs at document-level, before a workflow transition is executed. This event can be used to add a confirmation page for an individual document, before initializing the transition. The document name is visible to the user.
Workflow Definition	BeforeExecuteTransition	Occurs at document-level, when a workflow transition is executed. This event applies the parameters specified in the confirmation page for the document.
Workflow Definition	AfterExecuteTransition	Occurs at document-level, after a workflow transition is executed. Any changes to the event parameters are ignored.
Workflow Definition	TerminateExecuteTransition	Occurs at document-level and ends the execution of the workflow transition. Any changes to the event parameters are ignored. This event does not support making changes to the batch, but you can use it to display information about the batch.

Relevant Properties and Methods

The following properties and methods are used with confirmation pages. The **Confirmation** method is used to trigger the confirmation page, while the rest of the properties and methods are used to configure the layout of the confirmation page.

The properties and methods used to format the confirmation page are displayed from top to bottom in the confirmation dialog according to the order in which they are called in the script.

Properties and methods usable in confirmation pages

Object	Type	Name	Purpose	Description
Batch	Property	ConfirmationTitle	Formatting	Allows you to set the title of the confirmation dialog box.
Batch	Method	Confirmation	Trigger	The method used to call your custom confirmation page.
Batch	Method	AskConfirmation	Formatting	Allows you to add **Yes** and **No** buttons to the confirmation page.
Batch	Method	AskInput	Formatting	Allows you to add an editable text field to the confirmation page.
Batch	Method	ShowInfo	Formatting	Allows you to add static text to the confirmation page.

Procedures

You can add confirmation pages by using the VBScript Editor. For most confirmation pages, you will use the editor which is accessible from the toolbar at the top of the Configurator.

However, for custom commands, you also have the option to add confirmation pages to the script you created for the command. There is no functional difference between adding confirmation pages for custom commands to the VBScript editor or to the command script itself.

Add Confirmation Pages to VBScript

To add confirmation pages to a command or wizard:

1. In Configurator, click the **Edit Events** button in the toolbar at the top of the screen.

   The **VBScript Editor** opens.
2. Enter your custom script.

   To learn more about creating and editing event procedures, see the *Create and Edit Event Procedures* article in the *Meridian Enterprise VBScript API Reference Guide*.

   The contents of the confirmation dialog will be ordered from top to bottom according to the order in which they are called in the script.
3. Click **OK**.

Add Confirmation Pages to Custom Command record

To add confirmation pages to an individual custom command record:

1. In Configurator, expand **Commands** in the configuration tree to display the existing commands.
2. Select the command you want to configure.
3. Click **Edit**.

   To learn about other configuration options for custom commands, see the *Create and Edit Custom Commands* article in the *Meridian Enterprise VBScript API Reference Guide*.
4. Click the **Meridian Enterprise Script Editor** button to build a VBScript expression.

   The VBScript editor opens.
5. Enter your script into the editor.

   To learn more about creating and editing event procedures, see the *Create and Edit Event Procedures* article in the *Meridian Enterprise VBScript API Reference Guide*.

   The contents of the confirmation dialog will be ordered from top to bottom according to the order in which they are called in the script.
6. Click **OK**.
7. Click **Apply**.

Scopes

Meridian Enterprise is used to manage a wide variety of documents and the information about them. For some users, this breadth of information might seem overwhelming when they are trying to perform their day-to-day tasks. Scopes are way of limiting vault functionality and information to specific categories that are easier to use.

Scopes limit access to elements in the user interface, such as commands or options in drop-down lists. Scopes are *not* used to control access to specific objects in the vault. So, for example, if a vault has a project with a project type that is not in a user's scope, the user can still access the project if he has the required role assignments.

As another example, a vault used for managing facilities might benefit from having different scopes for as-built documents, design projects, archived documents, or maintenance management. A vault used for managing AEC documents might use a different scope for each customer. And a vault used for manufacturing documents might use different scopes for standard parts, active projects, and inactive projects.

If any scopes are defined in a vault, users must select one when opening the vault. Users may select only those scopes for which they have the **Can Use** privilege.

Scopes limit users' ability to create or work with the following objects:

- Custom (and standard) commands
- Document types
- Folder types
- Workflow definitions
- Project definitions
- Reference types
- Navigation views
- Reports

Scopes also limit some Meridian Enterprise functions:

- Folder access is restricted to a configurable root folder.
- Searches are restricted to accessible folders.

Each scope also defines a toolbar that can contain buttons that are most frequently used by users of that scope.

Create And Edit Scopes

Scopes limit access to elements in the user interface, such as commands or options in drop-down lists. Scopes are *not* used to control access to specific objects in the vault. If any scopes are defined in a vault, users must select one when opening the vault. Users may select only those scopes for which they have the **Can Use** privilege.

Scope Tabs

The following table gives brief descriptions of each tab in the **Scope** editing pane, and what you can configure on that tab.

Tabs in the Scope editing pane

Tab	Description
General	High-level information about the scope and the roles that can use the scope.
Command Filter	Commands available to the scope.
Toolbar	Commands available to the scope which are displayed in the toolbar. If you disable all of the commands that appear in a PowerWeb ribbon group, that group will be hidden from users of that scope.
Document Type Filter	Document types available to the scope.
Folder Type Filter	Folder types available to the scope.
Workflow Definition Filter	Workflow Definitions available to the scope.
Project Definition Filter	Project Definitions available to the scope.
Reference Type Filter	Reference types available to the scope.
Navigation View Filter	Navigation views available to the scope.
Report Filter	Reports available to the scope.

Procedures

To create or edit a scope:

1. Open the Meridian Enterprise Configurator.
2. Choose between two options:
   - To create a scope, use one of the following methods:
     - Select **New Scope** from the **Edit** menu.
     - Click the **New Scope** button .
     - Right-click **Scopes** in the configuration tree in the left pane and choosing **New Scope**.

     The scope property pages appear in the right pane.
   - To edit an existing scope:
     a. Expand **Scopes** in the configuration tree.
     b. Select the scope you want to edit.
     c. Click **Edit** in the lower-right corner of the screen.

     The scope becomes editable.
3. Type information on the **General** tab for the options described in the following table.
4. To manage a security role's access to this scope:
   a. Click **Privileges**.

   This button appears at the bottom of the **General** tab.
   b. Choose between two options:
      - To give access to the scope, select the check box in the **Can Use** row for a security role.
      - To deny access to the scope, clear the check box in the **Can Use** row for a security role.
   c. Click **OK**.
5. On each of the tabs, select the items and commands that you want to be available to users of this scope.

   Not all commands are available in scopes, particularly some of the managed change and Meridian Advanced Project Workflow Module commands. Also, access to the document type workflow transition commands and the **Retire** and **Unretire** commands cannot be removed from scopes.
6. Click **Apply**.

Scope general options

Option	Description
Display Name	The editable name of the scope definition as seen by users. Required.
Name	The permanent internal name of the scope definition. Required.
Root folder	The root folder that will be visible to users of this scope. Click the **Select Folder** icon to select an existing folder. Required.
Privileges	Select the Meridian roles that can use the current scope. If you disable all of the commands that appear in a PowerWeb ribbon group, that group will be hidden from users of that scope.

Document Synchronization Methods Overview

There are three different methods you can use to synchronize document contents, title blocks, and references with PowerWeb. You can use one or more of these methods in the same environment. The methods are listed below, from most desirable to least desirable.

Synchronize via IIS

Some file types can be synchronized directly through PowerWeb via IIS. . See *Meridian PowerWeb* in the *Meridian Enterprise Administrator's Guide* to learn more about how PowerWeb uses IIS.

- **Benefits**: Synchronization is done immediately after a workflow transition is completed. Specialty software is not needed to update documents supported by this method.
- **Drawbacks**: Not all file extensions are supported.

Configuration

1. Navigate to the **HKEY_LOCAL_MACHINE\Software\Cyco\AutoManager Meridian\CurrentVersion\WebLink** registry key in the Windows Registry Editor.

   You can learn more about this registry key in the *Registry Keys* section of the *Meridian Enterprise Administrator's Guide*.
2. Modify the **SynchronizeDirect** setting so that it contains the file extensions you want to synchronize via IIS.

   The file extensions must be entered as a semicolon-delimited list. The supported extensions are as follows: dst; dgn; dwg; doc; docx; docm; xls; xlsx; xlsm; ppt; pptx; pptm; vsdx; vsdm. If you remove one of the extensions from this list, it will no longer synchronize immediately via PowerWeb after a workflow transition is completed.

   A use case for when a System Administrator may want to remove a file extension from this setting is if they wanted to run a Macro in Microsoft Office. In that scenario, they would remove the appropriate file extension from the **SynchronizeDirect** setting and create a publishing job for that file type.

End-User Procedures

The following end-user procedures are impacted by this configuration:

- *Run a Workflow Transition on a Project*
- *Route a Document In a Workflow*

To read these procedures, see the *Meridian Enterprise User's Guide*.

Synchronize via Publisher

Publisher provides links to the most common engineering document management systems. Publisher also includes rendering modules for the most popular engineering content authoring applications. See the *Rendering Modules* article in the *Meridian Enterprise Supported Software* document for a list of file extensions and the modules that support them.

- **Benefits**: Some file extensions require specialty software for editing. This method allows users to edit documents without needing the software installed on their workstation.
- **Drawbacks**: Synchronization is NOT immediate, but instead is asynchronous. While Publisher is processing the synchronization, the affected document will be locked.

Configuration

For cluster node scanning to work when using SQL Server, the Publisher nodes need to have the SQL driver installed, and they need to be able to connect to the SQL Server configuration database. This is a requirement for the *Create And Edit a Rendering Profile* procedures in step 2.

To configure synchronization via Publisher:

1. Configure a Vault For Publisher.

   The **Publisher Jobs** settings cannot be configured until after you have created publishing jobs in step 3 below.
2. Create a rendering profile for the rendering module you want to use for your publishing job.

   To learn how to create a rendering profile, see *Create And Edit a Rendering Profile* in the *Meridian Enterprise Server Administrator's Guide*.

   See the *Rendering Modules* article in the *Meridian Enterprise Supported Software* document for a list of file extensions and the modules that support them.
3. Create publishing jobs for your rendering profiles.

   To learn how to create a publishing job, see *Create a Publishing Job* in the *Meridian Enterprise Server Administrator's Guide*.

   At least one rendering profile must be specified for each publishing job that will generate renditions.
4. Configure any applicable options for your publishing jobs.

   To learn how to configure these options, see the articles in the *Configure a Publishing Job* section in the *Meridian Enterprise Server Administrator's Guide*.
5. Configure the synchronize content options for your publishing jobs.

To learn how to configure these options, see *Configure the Synchronize Content Options* in the *Meridian Enterprise Server Administrator's Guide*.

6. If you want to link a publishing job to a specific command in PowerWeb, configure the Publisher Jobs settings in the Administrator.

End-User Procedures

The following end-user procedures are impacted by this configuration:

- *Update Renditions*
- *Synchronize File Properties*
- *Synchronize References*

To read these procedures, see the *Meridian Enterprise User's Guide*.

Synchronize via Application Integration

Meridian includes application links for the most popular applications used for engineering. The links provide specific Meridian functionality within each application for working with that application's data. This functionality is in addition to the functionality provided by Meridian Application Integration described in the Application Links section.

Application Integrations are application-independent and configurable by each user so that they can conveniently work with vault documents. Because the links work with application data, the application links can be configured by a System Administrator so that the data is managed in the same way for all Meridian users in the organization.

To learn more about the supported application integrations, see the Application Integration section.

- **Benefits**: Some file extensions require specialty software for editing. This method supports specialty software.
- **Drawbacks**: Users must have specialty software installed on their workstation. Updates are only made when the user triggers the update from within the application.

Configuration

To configure an application integration, see the relevant section in Application Integration.

End-User Procedures

The following sections in the *Meridian Enterprise User's Guide* are impacted by this configuration:

- *AutoCAD Link*
- *MicroStation Link*
- *Autodesk Inventor Link*
- *SolidWorks Link*
- *Revit Link*
- *Office Link*
- *Lotus Notes Link*

To read these procedures, see the *Meridian Enterprise User's Guide*.

Application Integration

Meridian includes application links for the most popular applications used for engineering. The links provide specific Meridian functionality within each application for working with that application's data. This functionality is in addition to the functionality provided by Meridian Application Integration described in the Application Links section.

Application Integrations are application-independent and configurable by each user so that they can conveniently work with vault documents. Because the links work with application data, the application links can be configured by a System Administrator so that the data is managed in the same way for all Meridian users in the organization.

See our Document Synchronization Methods Overview to learn about the three methods you can use to synchronize document contents, title blocks, and references with PowerWeb.

After files have been imported to a vault, document properties that were not explicitly set during the import (from title blocks, default property assignments, and so on) contain no values. Those properties will not be synchronized *to* the imported content files by the Meridian application links. This is by design to prevent overwriting existing values.

The properties can be synchronized *from* the imported content files. Such properties must be set in the vault to an explicit value at least once before the properties will be synchronized to the content files.

Integrations with CAD Applications

Meridian integrates extensively with popular CAD applications. The CAD application links support powerful features such as automatic bidirectional title block data exchange, sheet sets, external reference management, building information modeling (BIM) file structures, advanced viewing capabilities, and more.

Due to the complexity and special needs of BIM projects, we recommend the following best practices when configuring the vault:

- Create dedicated document types for each BIM application model type (Revit, AutoCAD Civil 3D, and so on).
- Store master model files either permanently in a special project folder or in a separate branch inside the vault where users can modify them.
- Master model files should never be released as as-built documents. Release only the exported 2D drawing sheets instead.
- Some models, like those produced by Revit, benefit from shared workspaces to allow concurrent use.

- Simple folder structures are often better in projects than complicated ones and give the project teams some freedom to organize files as they see fit based on the project requirements.
- Do not use hybrid document types for anything other than hybrid documents, for example, to link 2D drawings to 3D models. Exploiting hybrid document types for any other business purpose typically causes unforeseen problems.
- Minimize the number of custom workflows by making them flexible enough to handle multiple business processes, if possible. Multiple workflows often complicate the configuration unnecessarily.

Integrations with Microsoft Office

Meridian also integrates well with the Microsoft Office family of products. Users can store files created in any of the Office applications in a Meridian vault, even Outlook email messages and attachments, and view most of them without the need for the Office applications themselves or special viewers. The Microsoft Office link adds commands to the Office applications for viewing and synchronizing document properties such as Author, Title, Subject, and Keywords with the Meridian vault. Hyperlinks between Office documents are maintained throughout the document life cycle.

Application Link Impact on System Performance

The application links synchronize vault properties to and from documents whenever they are opened and again when they are saved. This can add to the time that it takes to perform these actions. The amount of time is determined by many factors but primarily by the number of vault properties to be synchronized.

To minimize this time, carefully consider modifying the **RedrawFieldsOnUpdate** setting described in Configure the Office Link, the **DisablePropertiesUpdate** settings (there are separate settings for Excel, PowerPoint, and Word, listed in the bullets below), and the **DisableTitleBlockUpdate** setting described in the HKEY_LOCAL_MACHINE\Software\Cyco\AutoManager Meridian\CurrentVersion\AutocadLink article in the *Meridian Enterprise Administrator's Guide*.

The **DisablePropertiesUpdate** settings for Excel, PowerPoint, and Word are described in the *Meridian Enterprise Administrator's Guide* in the following articles:

- HKEY_LOCAL_MACHINE\Software\Cyco\AutoManager Meridian\CurrentVersion\AMOfficeAddIn\Excel
- HKEY_LOCAL_MACHINE\Software\Cyco\AutoManager Meridian\CurrentVersion\AMOfficeAddIn\PowerPoint
- HKEY_LOCAL_MACHINE\Software\Cyco\AutoManager Meridian\CurrentVersion\AMOfficeAddIn\Word

Depending on your overall computing environment, using many custom properties can cause poor system performance, particularly when application links are enabled. For information about optimizing performance of application links with empty properties, see Configure Empty Property Synchronization.

Technical Support

Accruent technical support for specific versions of linked applications is limited. Review the *Meridian Enterprise Supported Software* document for this version of Meridian to determine if the application links that your organization uses are fully supported. The document is available from your Accruent Partner or the Accruent support portal.

AutoCAD Integration

Meridian Enterprise provides multiple links for AutoCAD and its vertical market editions.

Title block data synchronization is the primary configurable feature of the AutoCAD link. The link can synchronize attribute values in drawing title blocks with Meridian document properties. It is able to do this for AutoCAD and its different editions (Mechanical, Architectural, and so on) without requiring AutoCAD to be installed. For more information on AutoCAD attributes, see the AutoCAD documentation.

Meridian can synchronize property values automatically at key events in a document's life cycle and manually using commands in the Meridian client applications and provided by add-ins installed in the linked applications. The synchronization events are determined by the document's type, as described in Configure Title Block Updates.

You configure the AutoCAD link by specifying:

- Which blocks in drawings contain attributes to synchronize
- Which attributes in each block to synchronize
- Which Meridian property to map to (synchronize with) each attribute
- Which direction to synchronize each attribute, from AutoCAD to Meridian or from Meridian to AutoCAD

Title block synchronization can work with one title block per drawing file and also when one drawing file contains multiple title blocks (layouts or sheets).

Lastly, the AutoCAD link can synchronize AutoCAD file (also known as Summary) properties and AutoCAD sheet set properties with Meridian document properties.

> **Note:**
> For the AutoCAD vertical market editions (AutoCAD Civil 3D, AutoCAD Plant 3D) that create project files, consider using shared workspace folders as described in Configure Shared Workspaces.

You configure the AutoCAD link by editing a text file in Configurator as described in the following topics.

Configure Standard Title Block Synchronization

By configuring title block attribute synchronization, you specify the attribute tag values within your title blocks (static or dynamic) that you want to synchronize with Meridian document properties. Standard title block synchronization supports one title block per drawing. For a more advanced configuration, see Synchronize Multiple Blocks Per Drawing.

Compile a list of the block names used by your organization as title blocks in the past and present. For each block, list the attribute names that should be synchronized and their corresponding Meridian property names (and property set name). For each attribute, note whether it should be read or written, or both. In effect, determine which application will control the value of that attribute, Meridian or AutoCAD. When doing so, consider where the drawings will originate from, imported from outside the vault (title block attributes should be read) or created inside the vault with the aid of a wizard that prompts the user for title block properties (title block attributes should be written). Identify those blocks for which Meridian should synchronize the same attributes in the same way.

- Title block attributes that are inserted with their **Justification** option set to values other than **Left** might not be aligned properly after synchronization. This is caused by the Autodesk RealDWG library that is used by the AutoCAD link. To correct misalignment, insert the attributes with left justification or move the attributes manually in AutoCAD.
- By default, the AutoCAD link does not synchronize constant type attributes. To enable this type of synchronization, set the **SyncConstantAttributes** setting to **1** in the **[Settings]** section.
- Meridian Enterprise does not have a method to set order of title block updates. In AutoCAD, this is defined in the drawing title block table **AcDbBlockTable**. Meridian Enterprise uses this information.

To configure standard title block synchronization:

1. In Configurator, expand **Environment** in the configuration tree and select **Application Link Settings**.

   The settings for each application link appear in property pages in the right pane.

2. Click the **AutoCAD** tab.

   The AutoCAD settings appear in the right pane.

3. Click **Edit**.

   To export the settings file to your computer, click the **Export** button. This can be useful if you want to edit the file in another text editor. You can then copy your changes to the Clipboard and paste them into Configurator.

4. Locate the section of the file that begins with **[Settings]** and locate the **TitleBlocks** setting.

   The value of this setting contains the names of all blocks that the AutoCAD link will search for attributes to synchronize.

5. Edit the value of **TitleBlocks** to include the names of all blocks that you want to synchronize.

   You can delete all unused block names to simplify editing and increase synchronization performance.

6. For each block name in **TitleBlocks**, create a section in the file that begins with the block name surrounded by square brackets, for example, **[MyTitleBlock]**.

   You can type comments in the file by beginning each line with a semicolon (;). Use the default sections in the file as examples. You can delete all unused sections to simplify viewing and editing the file.

7. If the title block contains date attributes that will be synchronized, configure the **TitleBlockDateFormat** setting as described in Format Attribute Date Values .

8. If your organization uses multiple title blocks composed of the same attribute names, insert an **Aliases** setting in the first line after the section name.

   The value of this setting is a list of block names separated by commas that will use the same synchronization settings in that section. Wildcard characters are allowed to make this setting more convenient to specify, for example, **TBlock*** instead of **TBlock1, TBlock2, TBlock3** or ***** to apply to all titleblocks.

   - Use the empty wildcard (*) carefully, all title block configurations that follow it will be ignored.
   - The **Aliases** setting is useful if your organization uses a different title block for each sheet size but the attribute names are the same in all title blocks. You can then specify just one set of synchronization settings for all of the title blocks. You can also take advantage of this if the names of your title blocks have changed over time but the attribute names have stayed the same. The same title block settings can be used for all of the title blocks.

9. On consecutive lines in each section, list the attribute names that you want to synchronize, one line per attribute.

   For each attribute, specify the Meridian property set name (except for multiple title blocks per drawing as described in Synchronize Using Configuration Settings) and property name (for single or multiple title blocks per drawing) to which you want it synchronized.

   You can find the names of property sets and properties on the **Properties** page of each document type, as described in Create And Edit Document Types.

10. Specify a flag if the attribute (not Meridian property) should be read-only (RO) or write-only (WO).

Use the default lines in the file as examples. By default, attributes are read/write (RW). Use the following format for each line.

For a single title block per drawing:

<TagName>=<PropertySetName.PropertyName>,<Flag>

For multiple title blocks per drawing:

<TagName>=<PropertyName>,<Flag>

Although Meridian internal properties can be synchronized to document properties, you should never attempt to update internal properties or else **Access denied** errors can occur. Only write to Meridian properties in the **Custom** property set. Flag all attributes linked to Meridian internal properties as write-only (WO).

11. If you want to synchronize a property to a parent project (routed) property, specify the folder type name from which to get the folder property as in the following example.

    <TagName>=<FolderTypeName:PropertySetName.PropertyName>,<Flag>

12. If you want to synchronize one property to one of several possible routed properties, specify a unique identifier for each of the property on the left side of the setting as in the following example.

    <TagName,ID>=<FolderTypeName:PropertySetName.PropertyName>,<Flag>

    The value of ID is insignificant but must be unique among all of the lines in the same block section. Using this syntax, you can map the same attribute to multiple project folder types and the value will depend on the document's parent folder. The following example uses three different folder types **NewProject**, **UpgradeProject**, and **RepairProject**.

    ```
    PROJECTNUM,new = NewProject:PSProject.ProjectNum,WO
    PROJECTNUM,upgrade = UpgradeProject:PSProject.ProjectNum,WO
    PROJECTNUM,repair = RepairProject:PSProject.ProjectNum,WO
    ```

13. To control when the AutoCAD link synchronizes properties for the file, set the appropriate value for the **AutoUpdate** setting in the title block section.

    By default, the AutoCAD link synchronizes properties automatically from the vault to the files when the files are opened. The properties are synchronized from the files to the vault when the files are saved. You can configure when these synchronizations occur by adding **AutoUpdate** settings to the title block sections as appropriate for your needs. The possible values of **AutoUpdate** are as follows:

    - **0**: Updates are disabled on OPEN on SAVE
    - **1**: Updates are enabled on OPEN, but disabled on SAVE

- **2**: Updates are enabled on SAVE, but disabled on OPEN
- **3**: Updates are always enabled (the default)

To control the updates to all title blocks in the same way, instead of adding **AutoUpdate** settings to every title block section, you can set the **DisableTitleBlockUpdate** value in the following registry key as described in the *Meridian Enterprise Administrator's Guide*.

```
HKEY_LOCAL_MACHINE\Software\Cyco\AutoManager
Meridian\CurrentVersion\AutocadLink
```

By default, when a user saves a new drawing in the vault, possibly after having entered property values in wizard pages, those values are first saved in the vault but they are all overwritten (by possibly different values) next by the linked AutoCAD attribute values taken from the title block. Depending on how the properties are configured for the wizard pages and how they can be modified in the AutoCAD drawing, this can have unexpected consequences, especially for empty property values.

You can modify this behavior by setting the **SupportWizards** setting to **1** in the **[Settings]** section. This causes the AutoCAD link to synchronize the title block from the vault first. If the title block values are not modified in the drawing afterward, then they will remain unchanged when the vault properties are next taken from the title block. This effectively merges the values from the wizard pages with the values from drawing title block.

The exception is empty linked document properties; they will not be updated from the title block. Whether empty linked document properties are synchronized to the title block is controlled by the **CheckBlankPropertiesAssigned** setting described in Configure Empty Property Synchronization. For this setting to work as described, the **AutoUpdate** setting described above must not be disabled (**0** or **1**). This setting only affects new drawings saved to the vault by the AutoCAD link.

14. Click **OK**.
15. Test the link thoroughly by synchronizing each attribute and block.

    You can do this by changing the Meridian property values for a drawing in the vault and the title block attribute values in the same drawing and confirming that the synchronization occurs the way that you expect. Also test synchronization during drawing import from AutoCAD (saves) and other methods. You can manually synchronize properties with the Meridian client applications as described in *Synchronize File Properties* in the *Meridian Enterprise User's Guide*.

Synchronize Using Custom VBScript Functions

Synchronizing using custom VBScript functions is the most useful when you want to automate much of how the multiple title block attribute values are set. This method of synchronization uses two custom VBScript functions. The implementation of these functions is entirely up to you. The functions can have any valid names. The link simply calls the functions at the appropriate moment during standard title block synchronization. The functions should contain all of the logic necessary to read and write the appropriate attribute values in the drawings, such as with Visual Basic for Applications.

Both of the functions will be called by the AutoCAD link with one parameter. The parameter is an array of arrays that each contain strings in the following order:

1. Attribute name
2. Title block name
3. Layout name or tab number
4. Attribute value

Recommended logic for both functions to iterate through the parameter array is shown in the following example.

```
Function UpdateFromDoc(PropList)
   On Error Resume Next

   If IsArray(PropList) Then
      iSize = UBound(PropList)
      For i = 0 To iSize
         CurProp = PropList(i)
         If IsArray(CurProp) Then
            If UBound(CurProp) = 3 Then
               'Read the corresponding attribute value or write
               'the corresponding vault property here.
            End If
         End If
      Next
   End If

   UpdateFromDoc = True
End Function
```

The title block reading function may return any value, the value is not checked by the link.

If the return value of the title block writing function is True, the link will check all new values provided by the function and will set the corresponding attributes. To set an empty value, use an empty string (""). When the function is called, all parameter elements are Empty.

To synchronize multiple title blocks per drawing using custom VBScript functions:

1. Implement the title block reading and title block writing functions in the vault's VBScript block.

   For more information on the Meridian Enterprise VBScript API and modifying a vault's event script block, see the *CAD Link Events* section in the *Meridian Enterprise VBScript API Reference*.

2. Modify the AutoCAD link settings as described in Configure Standard Title Block Synchronization.

   a. In the **[Settings]** section, specify the name of the title block reading function in the **UpdatePropertiesFromDocument** setting.

   b. In the **[Settings]** section, specify the name of the title block writing function in the **UpdatePropertiesToDocument** setting.

   c. If the drawings to be synchronized do not use standard layout names and it is more convenient to refer to the layout tabs by their ordinal number in your custom functions, set the **UseTabOrderForScript** setting to **1**.

      The `Layout` parameter (`CurProp(2)` of `PropList(i)` in the preceding example) of the VBScript functions will then contain the tab number instead of the tab name. Setting this setting to **0** will disable this feature.

   d. In the section for each block, specify the keyword **UseScriptFunction** for each attribute that should use the script functions.

      Specify read/write flags the same as if a property name was specified, if necessary.

Following is an example of the preceding settings.

```
[Settings]
UseTabOrderForScript=1
UpdatePropertiesToDocument=UpdateToDoc
UpdatePropertiesFromDocument=UpdateFromDoc
[BLOCK_1]
PROJECT_NM=Custom.Projectname
FIELD1=UseScriptFunction
FIELD2=UseScriptFunction,WO
FIELD3=UseScriptFunction,RO
```

In this example, layout tabs are referred to by their number in the custom script functions instead of by their names. The script function **UpdateToDoc** will be called to update the attributes FIELD1 and FIELD2 for all instances of the block BLOCK_1. Those two attributes are controlled by the default and the WO flag. The script function **UpdateFromDoc** will be called to update the properties that correspond to attributes FIELD1 and FIELD3 for all instances of the block BLOCK_1. Those two attributes are controlled by the default and the RO flag.

Synchronize Multiple Blocks Per Drawing

By default, the Meridian Enterprise AutoCAD link assumes that each drawing contains one or more title blocks in one layout that is plotted. That is the typical configuration when each drawing file represents one drawing sheet, such as a typical 2D drawing. In that case, the AutoCAD link will synchronize the title blocks as described in Configure Standard Title Block Synchronization. All attributes with the same name will have the same value within the same layout.

AutoCAD drawings that contain multiple title blocks with different attribute values in more than one layout require special configuration. That is the typical configuration when one drawing file can represent multiple drawing sheets. Examples of such files are a 3D model from which multiple sheets of 2D views are plotted or a 2D energy distribution line drawing of a large geographical area from which multiple sheets of smaller-scale line segments are plotted. The layouts all communicate information about the same general object but each layout is also distinct and the title block in each layout specifies the differences.

The AutoCAD link can accommodate this configuration in one of the following ways:

- Two user-defined VBScript functions, one to read the attribute values of specified title blocks and one to write the attribute values of specified title blocks.

  These functions use the DocCADLink_AfterReadMTBProperties and DocCADLink_BeforeWriteMTBProperties events described in the *CAD Link Events* article in the *Meridian Enterprise VBScript API Reference Guide*.
- Configuration settings that specify what value to assign to each attribute of each title block in each layout.

Each title block can use one of these methods but not both methods. Implementing each of these methods is described in the following topics.

> **Note:**
> Meridian Enterprise does not have a method to set order of title block updates. In AutoCAD, this is defined in the drawing title block table **AcDbBlockTable**. Meridian Enterprise uses this information.

Synchronize Using Configuration Settings

Synchronizing multiple title blocks using configuration settings is most useful when you don't need to automate how the multiple title block attribute values are set or your requirements are not complex.

To synchronize multiple title blocks per drawing using configuration settings:

1. Enable the **Synchronize the title blocks in all layouts** option described in Configure Title Block Updates.
2. In Configurator, expand **Environment** in the configuration tree and select **Application Link Settings**.

   The settings for each application link appear in property pages in the right pane.
3. Click the **AutoCAD** tab.

   The AutoCAD settings appear in the right pane.
4. Click **Edit**.

   To export the settings file to your computer, click the **Export** button. This can be useful if you want to edit the file in another text editor. You can then copy your changes to the Clipboard and paste them into Configurator.
5. Locate the section of the file that begins with **[Settings]** and create or modify the **MultipleTitleBlocks** setting.

   This setting specifies a comma-separated list of the names of the configuration sections where the attributes for the title blocks that can exist in each layout in a drawing are mapped to property names as described in Configure Standard Title Block Synchronization (for example, **[MyTitleBlock]**). The attribute to property mapping settings are the same for single title blocks and for multiple title blocks except that for multiple title blocks, the settings must omit the property set name.
6. On a blank line in the file, create a new section named **[MULTIPLE_TB_DISPNAMES].**

   This section specifies the column names for the layouts, title blocks, and attributes as they will appear to users in Meridian Web Client when they set the values for each layout as described in *AutoCAD Link* in the *Meridian Enterprise User's Guide*.

   The following are predefined (internal) column names for objects other than attributes: **BlockName** (the title block name, always RO) and **Layout** (the layout name, always RO). If this section is not defined, the internal column names and attribute tag names will be shown instead.

7. On consecutive lines in the **[MULTIPLE_TB_DISPNAMES]** section, list the attribute names that you want to show to users on the **Title Blocks** page in the client applications, one line per attribute as in the following example.
8. List any of the preceding predefined column names for which you want to show other than the internal name.

   For each attribute and predefined column name, specify a display name (for example, your organization's term or in your local language). Surrounding the name in quotation marks is optional. You may also hide attributes that you do not want users to see by specifying the optional H flag.

   ```
   <ColumnName>=<Display Name>,[H]
   ```

   The following example specifies two block definitions and three visible display names, the revision number is hidden and not editable by users:

   ```
   MultipleTitleblocks=Mtitleblock1,Mtiteblock2

   [Mtitleblock1]
   CREATED_BY=CreatedBy
   REV_NO=Revision

   [Mtitleblock2]
   DWG_BY=CreatedBy
   REVNO=Revision

   [MULTIPLE_TB_DISPNAMES]
   Layout="Layout Name"
   BlockName="Title Block"
   DrawingNumber="Drawing No."
   RevisionNumber="Revision", H
   ```

9. Click **OK**.

Configure AutoCAD Document Property Synchronization

Similar to attribute synchronization, Meridian can synchronize vault properties with the document properties of AutoCAD files: **Title**, **Subject**, **Author**, **Keywords**, **Comments**, and so on. These properties appear on the **Summary** property page in Windows Explorer. Synchronization of document properties shown on the **Custom** property page are also supported.

To configure document property synchronization:

1. In Configurator, expand **Environment** in the configuration tree and select **Application Link Settings**.

   The settings for each application link appear in property pages in the right pane.

2. Click the **AutoCAD** tab.

   The AutoCAD settings appear in the right pane.

3. Click **Edit**.

   To export the settings file to your computer, click the **Export** button. This can be useful if you want to edit the file in another text editor. You can then copy your changes to the Clipboard and paste them into Configurator.

4. Locate the section of the file that begins with **[Settings]** and locate the **DocumentPropertiesSummary** setting if you want to synchronize properties that appear on the **Summary** property page.

   The value of the setting is the name of a section in the file that specifies the document properties that you want to synchronize, as shown in the following example. If the setting does not exist, the default name of the setting is the same as the name of the setting, **DocumentPropertiesSummary**. If the section does not yet exist, you can create it. If you want to use a different name, create the **DocumentPropertiesSummary** setting and set its value to the name you want. Then create a new section with that name.

   The configuration is the same for properties on the **Custom** property page but the name of the setting and the default section is **DocumentPropertiesCustom**.

   ```
   DocumentPropertiesSummary=MySummarySection
   DocumentPropertiesCustom=MyCustomSection
   ```

5. Locate the section of the file specified by **DocumentPropertiesSummary** or **DocumentPropertiesCustom** surrounded by square brackets, for example, **[MySummarySection]** or **[MyCustomSection]** or the default sections **[DocumentPropertiesSummary]** or **[DocumentPropertiesCustom]**.

If the section does not yet exist, create it. You can type comments in the file by beginning each line with a semicolon (;). Use the default sections in the file as examples.

6. On consecutive lines in the section, list the document property names that you want to synchronize, one line per property.
7. For each property, specify the vault property set and property name to which you want it synchronized.

   You can find the names of property sets and properties on the **Properties** page of each document type, as described in Create And Edit Document Types.
8. Specify a flag if the property should be read-only (RO) or write-only (WO).

   Use the default lines in the file as examples. By default, document properties are read/write. Use the following format for each line:

   <*DocumentPropertyName*>=<*PropertySet.PropertyName*>,<*Flag*>

   The following example maps the document property **Title** to the Meridian property **Title** such that the document property is written from Meridian and not vice versa:

   ```
   Title=Custom.Title, WO
   ```

   > **Note:**
   > Although Meridian internal properties can be synchronized to document properties, you should never attempt to update internal properties or else **Access denied** errors can occur. Only write to Meridian properties in the **Custom** property set. Flag all attributes linked to Meridian internal properties as write-only (WO). The following example shows how you can flag attributes as write-only:
   > ```
   > Revision=AMVersionablePropertySet._VERSIONNUMBER, WO
   > ```
9. If you want to synchronize a document property with a parent folder (routed) property, specify the folder type name from which to get the folder property, as in the following example.

   <*DocumentPropertyName*>=<*FolderTypeName:PropertySetName.PropertyName*>,<*Flag*>
10. If you want to synchronize one document property with one of several possible routed properties, specify a unique identifier for each of the properties on the left side of the setting, as in the following example.

    <*DocumentPropertyName,ID*>=<*FolderTypeName:PropertySetName.PropertyName*>,<*Flag*>

    The value of ID is insignificant but must be unique among all of the lines in the same section. Using this syntax, you can map the same document property to multiple folder types and the value will depend on the document's actual parent folder. The following example uses three different folder types **NewProject**, **UpgradeProject**, and **RepairProject**.

```
PROJECTNUM,new = NewProject:PSProject.ProjectNum,WO
PROJECTNUM,upgrade = UpgradeProject:PSProject.ProjectNum,WO

PROJECTNUM,repair = RepairProject:PSProject.ProjectNum,WO
```

11. Click **OK**.
12. Test the link thoroughly by synchronizing each document property.

    You can do this by changing the Meridian property values for a drawing in the vault and document property values in the same drawing and confirming that the synchronization occurs the way that you expect. You can manually synchronize properties with the Meridian client applications as described in *Synchronize File Properties* in the *Meridian Enterprise User's Guide*.

Configure Sheet Set Property Synchronization

As with attribute synchronization, Meridian can synchronize the properties in AutoCAD sheet set files with Meridian document properties. This allows users to import and manage sheet sets in a vault along with the drawings.

We recommend you create a document type dedicated to AutoCAD sheet set files. Create the document type as described in Create And Edit Document Types with the following options:

- **Hybrid document** cleared
- **Revision number** set to **None**
- Add the appropriate sheet set template files as templates for new documents
- File extension `.dst` assigned to the document type on import
- A property page with custom properties assigned to display the sheet set properties
- File name calculation that clearly associates the sheet set with its drawings

To configure sheet set property synchronization:

1. In Configurator, expand **Environment** in the configuration tree and select **Application Link Settings**.

   The settings for each application link appear in property pages in the right pane.
2. Click the **AutoCAD** tab.

   The AutoCAD settings appear in the right pane.
3. Click **Edit**.

   To export the settings file to your computer, click the **Export** button. This can be useful if you want to edit the file in another text editor. You can then copy your changes to the Clipboard and paste them into Configurator.
4. Locate the **[DrawingSheetSetsGeneral]** section of the file.

   If the section does not exist, you can create it. This section specifies Meridian internal properties that are synchronized with the sheet set file, as in the following example:

   ```
   Name=CommonPropertySet._DISPLAYNAME,WO
   ```

   > **Note:**
   > Although Meridian internal properties can be synchronized to document properties, you should never attempt to update internal properties or else **Access denied** errors can occur. Only write to Meridian properties in the **Custom** property set. Flag all attributes linked to Meridian internal properties as write-only (WO).
5. Locate the **DrawingSheetSetsCustom** section of the file.

If the section does not yet exist, you can create it. You can type comments in the file by beginning each line with a semicolon (;). Use the default sections in the file as examples.

6. On consecutive lines in the **DrawingSheetSetsCustom** section, list the sheet set property names that you want to synchronize, one line per property.

   For information on adding custom properties to sheet set files, refer to the AutoCAD documentation. For each property, specify the vault property set and property name to which you want it synchronized.

   You can find the names of property sets and properties on the **Properties** page of each document type, as described in Create And Edit Document Types.

7. Specify a flag if the property should be read-only (RO) or write-only (WO).

   Use the default lines in the file as examples. By default, document properties are read/write. Use the following format for each line:

   <*SheetSetPropertyName*>=<*PropertySet.PropertyName*>,<*Flag*>

8. Click **OK**.

9. Test the link thoroughly by synchronizing each sheet set property.

   You can do this by changing the Meridian property values for a sheet set in the vault and sheet set property values in Sheet Set Manager and confirming that the synchronization occurs in the way that you expect. You can manually synchronize properties with the Meridian client applications as described in *Synchronize File Properties* in the *Meridian Enterprise User's Guide*.

For information on special commands in AutoCAD to synchronize properties with a sheet set, see *Synchronize Sheet Set Data* in the *Meridian Enterprise User's Guide*.

Configure Advanced Settings - AutoCAD

Under normal circumstances, you should not need to configure the AutoCAD link's advanced settings. They are provided for integration into very specific environments. Change these settings only under the direction of Accruent Technical Support.

1. In Configurator, expand **Environment** in the configuration tree and select **Application Link Settings**.

   The settings for each application link appear in property pages in the right pane.
2. Click the **AutoCAD** tab.

   The AutoCAD settings appear in the right pane.
3. Click **Edit**.

   To export the settings file to your computer, click the **Export** button. This can be useful if you want to edit the file in another text editor. You can then copy your changes to the Clipboard and paste them into Configurator.
4. Locate the section of the file that begins with **[Settings]** and locate the setting that you want to change from the following table.

   If the setting does not exist, you can create it.
5. Type the value of the setting on the right side of the expression using the syntax:

   `<SettingName>=<Value>`
6. Click **OK**.

The available advanced settings are described in the following table.

Advanced settings

Setting	Description
AcadCallback	A COM object ProgID that provides a callback function. The default is **none**.

Setting	Description
Civil3DHideWCDialog	If set to **1**, the user is not prompted to select data shortcuts when the **Edit data shortcuts** command is run. Working copies of the data shortcuts are made automatically. The default is **0**. • The drawing must be saved in the vault and the shortcuts synchronized to the vault from the local workspace to enable the **Edit data shortcuts** command. Upon closing the drawing, the working copies of the shortcuts are not automatically released, which must be done manually. • This setting is overridden by the registry value with the same name in `HKCU\SOFTWARE\Cyco\AutoManager Meridian\CurrentVersion\AutoCADLink`, which itself is overridden by the same value in `HKLM\SOFTWARE\Cyco\AutoManager Meridian\CurrentVersion\AutoCADLink`.
HybridExSearch	If set to **1**, when Xref resolution is performed and only one Xref is unresolved, if a hybrid part is attached to but not inserted in the drawing, the Xref is resolved to the hybrid part. The default is **0**.
InventorRefSupport	If set to **1**, a reference of the type **AutoCAD Inventor Reference** is created from an AutoCAD drawing to an Inventor model that is inserted in the drawing with the VIEWBASE command as described in *Working with Inventor models* in the *Meridian Enterprise User's Guide*. The default is **0**.
LoadRedlines	By default, redlines are not shown when a document is opened in its authoring application. The user must show them manually as described in *View Renditions* in the *Meridian Enterprise User's Guide*. If set to **1**, this setting forces the redlines to be shown automatically after the document is opened. The default is **0**.
NoCustomObject	If set to **1**, prevents adding a custom object (AmLoader) to drawings when they are saved. The object is used to force AutoCAD to load the AutoCAD link before loading the drawing. If the link is loaded after the drawing is loaded, some references may not be resolved correctly. The default is **0**.

Setting	Description
NoRastersExSearch	If set to **1**, prevents adding vault information to raster objects extended entity data. This information is used by the link in some cases when opening drawings to locate the raster image in the vault and to get the correct path. The default is **0**.
NoSetHookContext	If set to **1**, prevents the link from changing the Application Integration context. The default folder of the Application Integration's **Open** and **Save** dialogs will then be the folder where it was last used. The default is **0**. By default, the link sets the Application Integration context according to the location of the selected document.
NotShowXrefDialog	If set to **1**, prevents showing a warning dialog that Xrefs are missing when they are actually present but located outside the vault. By default, Meridian expects all Xrefs to be located within the same vault as the active drawing. The default is **0**, and all vault paths selected by the user to specify the locations of unresolved Xrefs will be searched for subsequent missing Xrefs.
ReferencesCheckCircular	Controls circular reference checking and the user's ability to replace all or only individual references: **0**: Skips check circular reference checking **1**: Check circular references and prompt the user with **OK to All** and **Cancel to ALL** buttons. **2**: Check circular references with **OK** and **Cancel** buttons.
UseDBLock	If set to **1**, sets a lock in the vault database when a drawing is opened in AutoCAD. The lock prevents the document's properties from being changed by other users. The lock is removed when the drawing is closed. The default is **0**.

Disable the AutoCAD Link Programmatically

When creating a new vault document and immediately opening it in AutoCAD from VBScript or a custom program, the user is prompted to select a document type for the new document. This is because both actions occur within the same Meridian Enterprise transaction and the AutoCAD link is not yet aware that the document already exists in the vault. The document type selection dialog can be avoided by disabling the AutoCAD link for the document from within the custom code that opens the document. This allows the code to proceed without requiring user interaction with the AutoCAD link while leaving the link available for user-opened documents.

To clear the AutoCAD link programmatically, run the custom command **DisableICLinkForDoc** for the document within an AutoCAD session as shown in the following example:

```
On Error Resume Next

Dim objDoc
Set objDoc = objACAD.ActiveDocument

Let newDoc = False
If objDoc Is Nothing Then
   Set objDoc = objACAD.Documents.Add
   newDoc = True
End If

objDoc.SendCommand "DisableICLinkForDoc " & "<FullDocumentPath>" &
vbCr

If newDoc Then
   objDoc.Close False
End If

On Error GoTo 0
```

The fully-qualified document name must be <= 1024 characters. If the name is longer, the command will be skipped. The document name must be set before the document is opened by the link. Once set, the AutoCAD link will be cleared for the specified document when it is opened and until it is cleared by custom code or the drawing is closed in AutoCAD.

To clear the document name, run the command again without specifying a document name as in the following examples:

```
objDoc.SendCommand "DisableICLinkForDoc " & vbCr
```

Or

```
objDoc.SendCommand "DisableICLinkForDoc" & vbCr & vbCr
```

The **DisableICLinkForDoc** command is available in the standard AutoCAD links (`AmAcad****.arx` and `IcAsset****.arx`) beginning with build 2322. The command is also available at the AutoCAD command line to be invoked manually by a user.

Configure the AutoCAD Plant 3D Link

All the standard AutoCAD link features are available in AutoCAD Plant 3D plus the commands that are described in the *AutoCAD Plant 3D* section in the *Meridian Enterprise User's Guide*.

You can configure two parts of the AutoCAD Plant 3D link:

- Property synchronization as described in the following task.
- Project file synchronization to the local or shared workspace as described in Configure Project File Synchronization.

Synchronizing properties between AutoCAD Plant 3D project files and the vault is supported. Configuring this property synchronization is done similar to configuring standard AutoCAD document property synchronization as described in Configure AutoCAD Document Property Synchronization.

If AutoCAD Plant 3D is used with the Meridian Asset Management Module, consider configuring the AutoCAD Plant 3D link that is included with that module instead. It provides functionality for linking AutoCAD Plant 3D drawing tags to Meridian documents and managing synchronization states. For more information, see Configure the AutoCAD Link.

To configure property synchronization:

1. In Configurator, expand **Environment** in the configuration tree and select **Application Link Settings**.

   The settings for each application link appear in property pages in the right pane.

2. Click the **AutoCAD** tab.

   The AutoCAD settings appear in the right pane.

3. Click **Edit**.

   To export the settings file to your computer, click the **Export** button. This can be useful if you want to edit the file in another text editor. You can then copy your changes to the Clipboard and paste them into Configurator.

4. Locate the sections of the file labeled **[PnID_Project]** and **[PnID_Drawings]**.

   The section **[PnID_Project]** controls property synchronization with AutoCAD Plant 3D project files. The section **[PnID_Drawings]** controls property synchronization with AutoCAD Plant 3D drawing files. If the sections do not exist, you can create them. The lines in these sections specify the AutoCAD Plant 3D project properties that you want to synchronize.

5. On consecutive lines in each section, list the document property names that you want to synchronize, one line per property.

For each property, specify the vault property set and property name to which you want it synchronized. You can type comments in the file by beginning each line with a semicolon (;).

You can find the names of property sets and properties on the **Properties** page of each document type, as described in Create And Edit Document Types.

6. Specify a flag if the property should be read-only (RO) or write-only (WO).

   Use the default lines in the file as examples. By default, document properties are read/write. Use the following format for each line:

   <CategoryType.CategoryName.PropertyName>=<PropertySet.PropertyName>,<Flag>

   The AutoCAD Plant 3D link supports the **Project** and **Drawing** category types, not the **Pick List** type. If the category type is omitted, the type is taken from the section name (for example, **Drawing** for properties listed in the **PnID_Drawings** section. If the category name is omitted, the category **General** is assumed.

   The following properties are predefined as read-only (RO) and cannot be updated in the project:

   - Project.General.Source_Project
   - Drawing.General.PnPDrawingGuid
   - Drawing.General.DWG_Title

   The following example maps the project property **Source_Project** to the Meridian property **Project** such that the project name is read from AutoCAD Plant 3D and written to Meridian and not vice versa:

   ```
   Project.General.Source_Project=Custom.Project, RO
   ```

   Although Meridian internal properties can be synchronized to document properties, you should never attempt to update internal properties or else **Access denied** errors can occur. Only write to Meridian properties in the **Custom** property set. Flag all attributes linked to Meridian internal properties as write-only (WO).

7. Click **OK**.
8. Test the link thoroughly by synchronizing each property.

   You can do this by changing the property values for a project file in the vault and property values in a project file and confirming that the synchronization occurs the way that you expect. You can manually synchronize properties with the Meridian client applications as described in *Synchronize File Properties* in the *Meridian Enterprise User's Guide*.

By default, the AutoCAD Plant 3D link synchronizes properties automatically from the vault to the project files when the files are opened. The properties are synchronized from the project files to the vault when the files are closed. You can configure when these synchronizations occur by adding **AutoUpdate** settings to the **[PnID_Project]** and **[PnID_Drawings]** sections as appropriate for your needs. The values of **AutoUpdate** are as follows:

- **0**: Updates are disabled on OPEN and on SAVE
- **1**: Updates are enabled on OPEN, but disabled on SAVE
- **2**: Updates are enabled on SAVE, but disabled on OPEN
- **3**: Updates are always enabled (the default)

Configure Project File Synchronization

The AutoCAD Plant 3D link automatically creates copies of AutoCAD Plant 3D project files in the local workspace (or shared workspace) by default. It does this for any files that are referenced by the main AutoCAD Plant 3D project file. However, there can be other project files (`.pspx`, `.pspc`, for example) that are necessary for the correct functioning of AutoCAD Plant 3D that are not referenced by the main project file.

For the link to also copy these files, you must configure the link with search rules to find the files and with a custom reference type for the link to relate the files to the project. Because the file structure of each project can be different, you must specify the search rules for each project separately.

To configure project file synchronization:

1. In the project folder in the vault, create a plain text file.

   The filename can be anything but we recommend that you give it a descriptive name (for example, `MeridianLinkSearchRules.txt`) so that users can recognize it and not accidentally delete it.

2. On the first line of the file, create the section heading **[Definitions]**.

   This section defines rules that only apply to vault documents, not copies that reside in shared workspaces or in local workspaces.

3. Starting on the second line, specify at least one search rules with the keywords described in the following table.

   You might need to create multiple rules to specify multiple folders that are not in the same branch or multiple document types to search. Each rule must occupy a single line in the file and not continue on subsequent lines as in the example below.

4. On the next blank line, create a section heading **[LocalDefinitions]** to define rules that apply to document copies that reside in shared workspaces or in local workspaces.

5. On the following line, specify search rules in the same way as in the **[Definitions]** section.

   These rules may also include the **Release** keyword, which can be set to **1** to automatically release documents that are imported into the vault. To not automatically release the documents, set **Release** to **0**.

   Following is an example rule file with one rule in each section (ignore any line breaks within a rule) that uses all of the keywords:

   ```
   [Definitions]
   Folder="Isometric" Base="Project"
   Mask="Iso.atr;Iso*.dwt;IsoConfig.xml" Recursive="1" Type="Drawing"
   [LocalDefinitions]
   ```

```
Folder="CustomParts" Base="Project"
Mask="*.doc;*.xls;*.docx;*.xlsx;*.pdf" Recursive="1" Release="0"
```

6. Open the project in AutoCAD Plant 3D.
7. On the **Accruent Plant 3D** menu, click **Attach Custom**.

   The **Open File** dialog box appears.
8. Navigate to and select the search rule file that you created.

   The AutoCAD Plant 3D link creates a reference from the project file to the search rule file with the type **AcadPnID Custom Part**. It then uses the rules in the file to find the other files to be copied. It then creates references from the search rule file to the found files with the same type.

   If the search rule file is not locked, the link creates a **[Log]** section at the end of the file and a list of all of the files that were found and linked to the search rule file.

   When a user runs the **Prepare Project** command as described in the *Prepare Project Files for Viewing* procedures in the *Open a Project* article in the *Meridian Enterprise User's Guide*, the project file and all of the linked files are copied to the local workspace (or shared workspace).

   - References created in this way can be lost when a wildcard pattern is removed from a **Mask** definition and the project is resynchronized. To prevent this, add new file patterns to the definition and do not remove old ones.
   - References cannot be recreated when a document is revoked and then resynchronized in the same client session. To prevent this, reopen the project in Plant 3D.

Search rule keywords

Keyword	Description
Folder	Path to the folder that contains the project files that you want the link to find and copy. If this rule is omitted, the whole vault will be searched, which can be a very lengthy process.
Base	The type of path specified for **Folder**: • **Root**: Absolute path (default) • **Project**: Relative path from the folder that contains the main project file (`<ProjectName>.xml`) • **This**: Relative path from the folder that contains the search rule file
Mask	One or more semicolon-delimited filename wildcard patterns. The default is `*.*`.

Keyword	Description
Recursive	If enabled (**1**), searches in sub-folders. The default is disabled (**0**).
Release	If enabled (**1**), automatically releases imported documents. The default is disabled (**0**). For use in the **[LocalDefinitions]** section only.
Type	The internal name of the document type to search. If this rule is omitted, all document types are searched. For use in the **[Definitions]** section only.

Configure Automatic Release From Workflow

The link can automatically release a document from its current workflow after first saving the user's changes. If the document is in a document type workflow and the document's next workflow state is **Released** (regardless of its current state), the **Release** transition is executed automatically. But if the document is in a custom workflow (definition), there might be multiple end states with different names and you might want the document routed to only one of the states.

To configure the workflow state name for automatic release:

1. In Configurator, expand **Environment** in the configuration tree and select **Application Link Settings**.

   The settings for each application link appear in property pages in the right pane.

2. Click the **AutoCAD** tab.

   The AutoCAD settings appear in the right pane.

3. Click **Edit**.

   To export the settings file to your computer, click the **Export** button. This can be useful if you want to edit the file in another text editor. You can then copy your changes to the Clipboard and paste them into Configurator.

4. Locate the **[CDWFTransitionsToWC]** section of the file.

   If the section does not exist, you can create it. This section specifies the workflow name, starting state name (or **$BEGIN** to start the workflow from the **Released** state), and one or more transition names to execute in order to release documents.

   The configuration uses the following syntax:

   ```
   <WorkFlowInternalName>.<StateInternalName>=<TransitionInternalName>[,<TransitionInternalName>]
   ```

   A simple example:

   ```
   ProjectAs-Built.Review=CheckIn
   ```

   In this example, if the document is in a workflow with the internal name **ProjectAs-Built** and in the **Review** state, if the next transition is **CheckIn**, it will be executed when the user executes the **Save & Release** command in AutoCAD or the **Save** command in Revit.

   A more advanced example:

   ```
   ProjectAs-Built.$BEGIN=CheckOut,Review,Approve,CheckIn
   ```

In this example, if the document is in the **Released** state when the user executes the **Save & Release** command in AutoCAD, the workflow with the internal named **ProjectAs-Built** will be started and the document will be routed through the **CheckOut**, **Review**, **Approve**, and **CheckIn** states.

Autodesk Inventor Integration

Meridian includes a link to Autodesk Inventor that provides:

- Automatic management of Autodesk Inventor's complex file relationships. References between files are always maintained, even if the files are moved or renamed within the Meridian file system.
- The Assembly Import Tool for importing legacy assemblies and parts into the Meridian vault, while keeping the references between files. For more information, see the *Import Assembles* article in the *Meridian Enterprise User's Guide*.
- Automatic updating of replaced parts or assemblies when replacements are available.
- Autodesk Inventor browser integration.
- Integration with the Autodesk Inventor **Create Component** command to ensure that new parts are created in the Meridian vault.
- Integration of the Autodesk Inventor Viewer for viewing Autodesk Inventor files within the Meridian vault.

Note:

- For performance reasons, we recommend that the vault be configured to utilize the Local Workspace feature whenever Autodesk Inventor files are managed in the vault. All documentation relevant to the Autodesk Inventor link assumes that Local Workspace has been enabled.
- It is important to keep the Autodesk Inventor document type templates up to date with the version of Autodesk Inventor that you are currently using. This includes `.iam`, `.ipt`, and `.idw` documents. This also applies to existing Autodesk Inventor documents in the vault. Failing to update the documents and templates can result in problems when resolving references and synchronizing document properties.

  If you have a large number of Autodesk Inventor files in the vault that need to be updated, we recommend that you use the Autodesk Inventor Migration Tool with the Accruent service module that is installed by the Meridian Inventor link. This tool is described in *Import Autodesk Inventor Files* in the *Meridian Enterprise User's Guide*.

You configure the Autodesk Inventor link by editing a text file in Configurator as described in the following topics.

Configure Autodesk Inventor Link Options

The Autodesk Inventor link provides some options that control the way it works and requests confirmation from users. The **Inventor** application link tab may be used to centrally control how Meridian will prompt the user when write access to an Autodesk Inventor document is required. These dialogs are intended to guide users in making sensible decisions during the design of their CAD models, but experienced users may perceive these warnings to be unnecessary. Settings are also provided that control how library parts are imported into a vault.

Configure Link Options

1. In Configurator, expand **Environment** in the configuration tree and select **Application Link Settings**.

   The settings for each application link appear in property pages in the right pane.
2. Click the **Inventor** tab.

   The Autodesk Inventor link's settings page appears in the right pane.
3. Click **Edit**.

   To export the settings file to your computer, click the **Export** button. This can be useful if you want to edit the file in another text editor. You can then copy your changes to the Clipboard and paste them into Configurator.
4. Locate the **[Settings]**section and read the description of each setting.
5. To change a setting from its default value, remove the leading semicolon from the line that contains the setting and edit the setting's value, if necessary.
6. Click **OK**.

Settings that control the import of library parts include:

- **NewLibraryComponentDocType**: The internal name of the document type to use for automatically generated parts
- **ReleaseNewLibraryComponent**: If set to **0**, leaves imported parts in the workflow state configured for the document type. If set to **1**, automatically releases the part.
- **RedrawTitleBlocksOnUpdate**: Has a significant impact on the behavior of property linking. When enabled, this setting has three potential values:

- **0**: Default value. Only the iProperties are synchronized
- **1**: Not only are the iProperties synchronized, but the visible title block is also redrawn to reflect the updated values. Autodesk Inventor must be installed on the computer for this to occur; the Autodesk Inventor libraries are required to update the visible geometry.
- **2**: The iProperties are synchronized, but the visible title block is only redrawn (Autodesk Inventor started) when documents transition to the the workflow's released state. That is, by the **Release**, **Release Quick Change**, **Unretire**, and **Submit Working Copy** commands.

> **Important!**
> When the **RedrawTitleBlocksOnUpdate** setting is set to **1** or **2**, the time taken to release the documents will be significantly increased due to the execution of the Autodesk Inventor update process in the background for each component document. If system performance during workflow transitions becomes unacceptable, ensure that this setting is cleared (**0**).

Create Local Settings

By default, these settings will be read from the vault's configuration as defined above. However, registry keys may be set at the client computers that override the server settings.

To create local settings:

1. On the client computers, create the key `HKEY_LOCAL_MACHINE\SOFTWARE\Cyco\AutoManager Meridian\CurrentVersion\InventorLink`.
2. Create a DWORD value named **SettingsSource**.
3. Set the data of **SettingsSource** to **1**.

   If set to **0**, then the settings will continue to be read from the vault configuration.
4. Create additional DWORD values corresponding to any (or all) of the settings defined in the vault configuration and set the data accordingly.

Control Autodesk Inventor Link Dialogs

The **[Settings]** section of the **Inventor** application link tab may also be used to centrally control how Meridian will prompt the user when write access to an Autodesk Inventor document is required. These dialogs are intended to guide users in making sensible decisions during the design of their CAD models, but experienced users may perceive these warnings to be unnecessary.

The **HideIsReadOnlyMsg** setting suppresses the **Open Read Only** message that can appear when a document is under revision by someone else and a Quick Change or workflow change process cannot be started. The options for this setting are:

- **HideIsReadOnlyMsg=0**: This is the default value. When set to zero, the dialog will be shown as needed.
- **HideIsReadOnlyMsg=1**: When set to one, the dialog will be suppressed and the process will continue without further user notification. Keep in mind that the Meridian browser is readily available from within Autodesk Inventor for determining document availability.

The **HideGetWriteAccess** setting defines the action to be taken when a read-only document needs to be changed by Autodesk Inventor, such as during an Edit-In-Place operation within an assembly model. If the change cannot be initiated, the user will be notified accordingly. The options for this setting are:

- **HideGetWriteAccess=0**: This is the default value. When set to zero, a dialog will display that gives the user the option to start a change or leave the document in a read-only state.
- **HideGetWriteAccess=1**: When set to one, the dialog will be suppressed and the document will always be left as read-only
- **HideGetWriteAccess=2**: When set to two, the document will always be made writable by starting either a document workflow change or a Quick Change (based on the **CreatesQuickChange** setting)

The **CreatesQuickChange** setting determines the workflow path that will be taken when the Autodesk Inventor link automatically initiates a change process based on a user request to edit the document. The options for this setting are:

- **CreatesQuickChange=0**: This is the default value. When set to zero, the document will be placed into the document workflow process associated to the document type to complete the change.
- **CreatesQuickChange=1**: When set to one, a Quick Change will be started on the document

By default, these settings will be read from the server, as defined above. However, registry keys may be set at the local computer level, superseding the server side settings.

To create local overrides:

1. Create the key **HKEY_LOCAL_MACHINE\SOFTWARE\Cyco\AutoManager Meridian\CurrentVersion\InventorLink**.
2. Create the DWORD value **SettingsSource**.
3. Modify the value for **SettingsSource** to **1**.

   If set to **0**, then the settings will continue to be read from the server.
4. Create a DWORD value corresponding to any (or all) of the settings defined above. Values should be set as defined above.

Configure Autodesk Inventor Property Synchronization

Property synchronization is the primary configurable feature of the Autodesk Inventor link. The link can synchronize Autodesk Inventor property values with Meridian document properties. Title block property synchronization is supported in the PowerUser client only.

This feature works with the following Autodesk Inventor property sets (Meridian property set shown in parentheses):

- Summary Information (**Summary**)
- Document Summary (**DocSummary**)
- Design Tracking Properties (**Properties**)
- User Defined Properties (**Custom**)
- Material (**Material** for part documents, synchronized only from Autodesk Inventor to the vault)
- Mass (**Mass** for part and assembly documents, synchronized only from Autodesk Inventor to the vault)

Configuring the synchronization defines:

- Which Autodesk Inventor property to synchronize with which Meridian property
- Which direction to synchronize each property, from Autodesk Inventor to Meridian or from Meridian to Autodesk Inventor

For more information on configuring Autodesk Inventor properties, see the Autodesk Inventor documentation. For information about configuring Meridian document types for title block updates, see Configure Title Block Updates. Additional control over the behavior of the link can be configured as described in Configure Autodesk Inventor Link Options.

> **Note:**
> Compile a list of the Autodesk Inventor property names used by your organization. Note the Meridian property name (and property set name) that corresponds to each Autodesk Inventor property that you want to synchronize. Also, for each Autodesk Inventor property, note whether it should be read or written, or both.
>
> In effect, determine which application should control the value of that attribute, Meridian or Autodesk Inventor. When doing so, consider where the documents will originate from, imported from outside the vault (Autodesk Inventor properties should be read) or created inside the vault with the aid of a wizard that prompts the user for property values (Autodesk Inventor properties should be written).

To configure Autodesk Inventor property synchronization:

1. In Configurator, expand **Environment** in the configuration tree and select **Application Link Settings**.

   The settings for each application link appear in property pages in the right pane.

2. Click the **Inventor** tab.

   The Autodesk Inventor link's settings page appears in the right pane.

3. Click **Edit**.

   To export the settings file to your computer, click the **Export** button. This can be useful if you want to edit the file in another text editor. You can then copy your changes to the Clipboard and paste them into Configurator.

4. Locate the setting for each Autodesk Inventor property.

   Edit the value of each Autodesk Inventor property setting to include the corresponding Meridian property set and property name that you want to synchronize. You can delete any unused property settings to simplify editing and increase synchronization performance. You can type comments in the file by beginning each line with a semicolon (;). Use the default property settings in the file as examples.

   You can find the names of property sets and properties on the **Properties** page of each document type, as described in Create And Edit Document Types.

5. Specify a flag if the property should be read-only (RO) or write-only (WO).

   Use the default lines in the file as examples. By default, document properties are read/write. Use the following format for each line:

   ```
   <InventorPropertySet.InventorPropertyName>=
   <MeridianPropertySet.MeridianPropertyName>,<Flag>
   ```

   The following example maps the document property **Title** to the Meridian property **Title** such that the document property is written from Meridian and not vice versa:

   ```
   Title=Custom.Title, WO
   ```

   > **Note:**
   > - When referenced in the Autodesk Inventor application link, Meridian properties and property sets must always be referenced by their internal name (no spaces or special characters), not their display name.
   > - Although Meridian internal properties can be synchronized to Autodesk Inventor properties, you should never attempt to update internal properties or **Access denied** errors can occur. Flag all properties linked to Meridian internal properties as write-only (WO). Only write to Meridian properties in the **Custom** property set.

- For information about handling scenarios with empty property values, see Configure Empty Property Synchronization.

6. If you want to synchronize a document property with a parent folder (routed) property, specify the folder type name from which to get the folder property as in the following example.

   ```
   <DocumentPropertyName>=
   <FolderTypeName:PropertySetName.PropertyName>,<Flag>
   ```

7. If you want to synchronize one document property with one of several possible routed properties, specify a unique identifier for each of the properties on the left side of the setting as in the following example.

   ```
   <DocumentPropertyName,ID>=
   <FolderTypeName:PropertySetName.PropertyName>,<Flag>
   ```

   The value of ID is insignificant but must be unique among all of the lines in the same section. Using this syntax, you can map the same document property to multiple folder types and the value will depend on the document's actual parent folder. The following example uses three different folder types **NewProject**, **UpgradeProject**, and **RepairProject**.

   ```
   PROJECTNUM,new = NewProject:PSProject.ProjectNum,WO
   PROJECTNUM,upgrade = UpgradeProject:PSProject.ProjectNum,WO

   PROJECTNUM,repair = RepairProject:PSProject.ProjectNum,WO
   ```

8. Click **OK**.
9. Test the link thoroughly by synchronizing each Autodesk Inventor property.

   You can do this by changing the Meridian property values for a drawing in the vault and Autodesk Inventor property values in the same drawing and confirming that the synchronization occurs that way that you expect. You can manually synchronize properties with the Meridian client applications as described in *Synchronize File Properties* in the *Meridian Enterprise User's Guide*.

Configure Component Names

The Autodesk Inventor Link provides an optional command named **Rename Components**. This command can be used by Autodesk Inventor users to rename the components shown in the Autodesk Inventor **Model** pane using the value of a Meridian property. The name may use the following syntax:

<Prefix><PropertyValue><Suffix>

This can be useful if users would prefer to see more meaningful names than the Autodesk Inventor file names. The command is cleared unless the **NodeNameProperty** setting is configured as described in the following procedure.

To configure component names:

1. In Configurator, expand **Environment** in the configuration tree and select **Application Link Settings**.

   The settings for each application link appear in property pages in the right pane.
2. Click the **Inventor** tab.

   The Autodesk Inventor link's settings page appears in the right pane.
3. Click **Edit**.

   To export the settings file to your computer, click the **Export** button. This can be useful if you want to edit the file in another text editor. You can then copy your changes to the Clipboard and paste them into Configurator.
4. Locate the **[ModelNodes]** section.

   If it does not yet exist, you may create it at the end of the file.
5. Modify the each setting in this section using the descriptions in the following table.
6. Click **OK**.

Component name settings

Setting	Description
NodeNamePrefix	Prefix string
NodeNameSuffix	Suffix string
NodeNameProperty	Meridian property set and property name
UpdateAfterOpen	Update the component names after a component is opened.
UpdateBeforeSave	Update the component names before a component is saved.

Following are example settings:

```
[ModelNodes]
NodeNamePrefix=PFX
NodeNameSuffix=SFX
NodeNameProperty=Custom.DocumentNumber
UpdateAfterOpen=N
UpdateBeforeSave=N
```

For more information on using this command, see *Rename Components Using Properties* in the *Meridian Enterprise User's Guide*.

Resolve Assembly in Inventor

The Meridian integration with Autodesk Inventor automatically locates and links the components of an assembly, even when the files are in different folders within the vault. This ensures that complex assemblies open with all references resolved, reducing manual effort and improving efficiency in both online and remote mode.

When you open an assembly in Meridian PowerWeb, Inventor integration searches the Meridian vault to find missing component files. Meridian matches components by name. The search stops when Meridian finds a match or confirms no match in the vault. Meridian matches components by name. The search stops when Meridian finds a match or confirms no match in the vault.

Meridian handles matches as follows:

- One match: Resolves the assembly automatically.
- Multiple matches: Displays the **Resolve Link** dialog, allowing you to select the correct file.
- No match: The component stays unresolved, and you must locate it manually.

We recommend clearing the **Search for other unresolved references using this location** checkbox in the Inventor **Resolve Link** dialog.

Configuration to avoid false matches

As a system administrator, you must configure the **ExcludeFolderForMatch** setting in Meridian Configurator > **Inventor Application Link Settings** > **Settings**. This setting informs Meridian which folders to skip when searching for matching components in an Inventor assembly. It helps avoid false matches and improves resolution accuracy.

Each folder path must end with a **** character.

```
[Settings]
ExcludeFolderForMatch=\Archive:\Documentation\
;ExcludeFolderForMatch - Excludes the given folders from search when matching a document to a name
;Possible values:
A colon-separated list of folder paths from the Root of the Vault.
```

Search details

When you open an assembly in Meridian PowerWeb, Inventor integration searches the Meridian vault to find missing component files in the following order:

1. The folder of the main assembly and its subfolders.
2. The project of the main assembly and its subfolders. If the assembly does not belong to a project, Meridian skips this step.
3. The entire vault, excluding:
    - Other projects
    - Archive folders

SolidWorks Integration

Data synchronization is the primary configurable feature of the SolidWorks link. The link can synchronize SolidWorks property values (linked to drawing title block text, for example) with Meridian document properties. Title block property synchronization is supported in the PowerUser client only. For more information on linking SolidWorks properties (evaluated values) to title block text, see the SolidWorks documentation.

Meridian can synchronize property values automatically at key events in a document's life cycle and manually using commands in the Meridian client applications and provided by add-ins installed in the linked applications. The synchronization events are determined by the document's type, as described in Configure Title Block Updates.

You configure the SolidWorks link by specifying:

- Which SolidWorks property to synchronize with which Meridian property
- Which direction to synchronize each property, from SolidWorks to Meridian or from Meridian to SolidWorks

You configure the SolidWorks link by editing a text file in Configurator as described in the following topics.

Configure SolidWorks Property Synchronization

We recommend you compile a list of the SolidWorks property names used by your organization. Determine the Meridian property name (and property set name) that corresponds to each SolidWorks property that you want to synchronize. Also for each SolidWorks property, determine whether it should be read or written, or both. In effect, determine which application should control the value of that attribute, Meridian or SolidWorks. When doing so, consider where the documents will originate from, imported from outside the vault (SolidWorks properties should be read) or created inside the vault with the aid of a wizard that prompts the user for title block properties (SolidWorks properties should be written).

To configure SolidWorks property synchronization:

1. In Configurator, expand **Environment** in the configuration tree and select **Application Link Settings**.

   The settings for each application link appear in property pages in the right pane.

2. Click the **SolidWorks** tab.

   The **SolidWorks** link's settings page appears in the right pane.

3. Click **Edit**.

   To export the settings file to your computer, click the **Export** button. This can be useful if you want to edit the file in another text editor. You can then copy your changes to the Clipboard and paste them into Configurator.

4. Locate the setting for each SolidWorks property within its property set section.

   The property set section names are defined in the **[PropertySets]** section using the following syntax:

   <*COMPropertySetName*>/<*FMTID* >=<*PropertySetName*>, <*ProgID*>

   Under normal circumstances, the definition should not be edited. If necessary, only <*PropertySetName*>and its corresponding property set section name may be changed. For example, changing both occurrences of **SWCustom** to **SolidWorksCustom**.

5. Edit the value of each SolidWorks property setting to include the corresponding Meridian property set and property name that you want to synchronize.

   You can delete any unused property settings to simplify editing and increase synchronization performance. You can type comments in the file by beginning each line with a semicolon (;). Use the default property settings in the file as examples.

   The numbers shown following the document property names are IDs that resolve the property mapping when the property name is localized into multiple languages.

You can find the names of property sets and properties on the **Properties** page of each document type, as described in Create And Edit Document Types.

6. Specify a flag if the property should be read-only (RO) or write-only (WO).

   Use the default lines in the file as examples. By default, document properties are read/write. Use the following format for each line:

   ```
   <SolidWorksPropertyName>=<MeridianPropertySet.Meridian
   PropertyName>,<Flag>
   ```

   The following example maps the document property **Title** to the Meridian property **Title** such that the document property is written from Meridian and not vice versa:

   ```
   Title=Custom.Title, WO
   ```

   > **Note:**
   > Although Meridian internal properties can be synchronized to document properties, you should never attempt to update internal properties or else **Access denied** errors can occur. Only write to Meridian properties in the **Custom** property set. Flag all attributes linked to Meridian internal properties as write-only (WO).

7. If you want to synchronize a property to a parent folder (routed) property, specify the folder type name from which to get the folder property, as in the following example.

   ```
   <SolidWorksPropertyName>=
   <FolderTypeName:PropertySetName.PropertyName>,<Flag>
   ```

8. If you want to synchronize one property to one of several possible routed properties, specify a unique identifier for each of the property on the left side of the setting, as in the following example.

   ```
   <SolidWorksPropertyName,ID>=
   <FolderTypeName:PropertySetName.PropertyName>,<Flag>
   ```

   The value of ID is insignificant but must be unique among all of the lines. Using this syntax, you can map the same SolidWorks property to multiple project folder types and the value will depend on the document's parent folder. The following example uses three different folder types **NewProject**, **UpgradeProject**, and **RepairProject**.

   ```
   ProjectNum,new = NewProject:PSProject.ProjectNum,WO
   ProjectNum,upgrade = UpgradeProject:PSProject.ProjectNum,WO
   ProjectNum,repair = RepairProject:PSProject.ProjectNum,WO
   ```

9. Click **OK**.
10. Test the link thoroughly by synchronizing each SolidWorks property.

    You can do this by changing the Meridian property values for a drawing in the vault and SolidWorks property values in the same drawing and confirming that the synchronization occurs in the way that you expect. You can manually synchronize properties with the

Meridian client applications as described in *Synchronize File Properties* in the *Meridian Enterprise User's Guide*.

Hide Navigation Views In the SolidWorks Browser

Not all Navigation views might be appropriate for selection in the SolidWorks browser. You can configure the SolidWorks link to hide such views from users.

To hide Navigation views in the SolidWorks browser:

1. In Configurator, expand **Environment** in the configuration tree and select **Application Link Settings**.

   The settings for each application link appear in property pages in the right pane.
2. Click the **SolidWorks** tab.

   The **SolidWorks** link's settings page appears in the right pane.
3. Click **Edit**.

   To export the settings file to your computer, click the **Export** button. This can be useful if you want to edit the file in another text editor. You can then copy your changes to the Clipboard and paste them into Configurator.
4. Locate the **HideNavigationViews** setting.
5. Edit the value of the setting to include the Navigation views that you want to hide separated by a comma as shown in the following example.

   ```
   HideNavigationViews=AllToDoLists,StatusPerson
   ```
6. Click **OK**.

Office Integration

Property data synchronization is the primary configurable feature of the Microsoft Office link. The link can synchronize the property (and field) values of files created by the Office applications that are linked to Meridian document properties.

Meridian can synchronize property values automatically at key events in a document's life cycle (PowerUser client only) and manually using commands in the Meridian client applications and provided by add-ins installed in the linked applications. The synchronization events are determined by the document's type, as described in Configure Title Block Updates. You configure the Office link by specifying:

- Which Office property to synchronize with which Meridian property
- Which direction to synchronize each property, from Office to Meridian or from Meridian to Office

You configure the Office link by editing a text file in Configurator as described in the following topics.

Configure the Office Link

This topic describes how to configure the link between Meridian and Microsoft Office.

The link to Microsoft Visio does not require the following configuration but does require the registry settings described in the *HKEY_LOCAL_MACHINE\Software\Microsoft\Visio\AddIns\AMOfficeAddIn.AMOfficeAddIn* article in the *Meridian Enterprise Administrator's Guide* . The Visio link supports the document summary properties only. The properties are synchronized upon opening and saving the documents only, there is no toolbar is available in Visio.

Notes About System Behavior

- Linked documents that use Office file properties (when the **Link to content** option is enabled) in the header or footer may open in the editing application in **Draft** view.

  To prevent this, insert fields instead and the documents will open in the default view. You configure field synchronization the same as file property synchronization.
- The Office link can be configured to prompt PowerWeb users to release a document from a Quick Change workflow when the document has been changed in its native application.

  To enable this feature, set the **AskReleaseQuickChangeOnClose** setting to **1** in the **[Settings]** section of the configuration referred to below.
- If you are using the Aspose Rendering Module, you must use one of two options:
  - Add or migrate your mapping to the **Custom** section of the configuration referred to below.
  - If you already have your configuration set to use OfficeCustomProperties, add **AsposeCustom = OfficeCustomProperties** to the **Settings** section of the configuration referred to below.

Before You Start

Complete the following tasks before configuring the settings described in this article:

1. Create a list of the Office property and field names used by your organization in cover pages, headers, footers, and so on.
2. Create a list of the Meridian property names (and property set names) that correspond to each Office property that you want to synchronize.
3. For each Office property, note whether it should be read or written, or both. In effect, determine which application should control the value of that property, Meridian or Office.

When doing so, consider where the documents will originate from. If the document will be imported from outside the vault, Office properties should be read. If the document will be created inside the vault with the aid of a wizard that prompts the user for document properties, Office properties should be written.

Configure Office Property Synchronization

1. In Configurator, expand **Environment** in the configuration tree and select **Application Link Settings**.

   The settings for each application link appear in property pages in the right pane.

2. Click the **Office** tab.

   The Office link's settings page appears in the right pane.

3. Click **Edit**.

   To export the settings file to your computer, click the **Export** button. This can be useful if you want to edit the file in another text editor. You can then copy your changes to the Clipboard and paste them into Configurator.

4. Locate the section of the file that contains the document property that you want to synchronize, for example, **[SummaryInf]**.

   The property set section names are defined in the **[PropertySets]** section using the following syntax:
   <*COMPropertySetName*>/<*FMTID* >=<*PropertySetName*>, <*ProgID*>

5. For each document property, specify the Meridian property set and property name to which you want it synchronized.

   Under normal circumstances, the definition should not be edited. If necessary, only <*PropertySetName*> and its corresponding property set section name may be changed. For example, changing both occurrences of **Custom** to **OfficeCustom**.

   The numbers shown following the document property names are IDs that resolve the property mapping when the application is localized into multiple languages.

   The Office link only synchronizes dates with Microsoft Office properties. The time is not synchronized even if it is stored in the Meridian property. For this reason, a text type property should be used in Meridian instead of a date type and the time value set using scripting.

   You can find the names of property sets and properties on the **Properties** page of each document type, as described in Create And Edit Document Types.

6. Specify a flag if the property should be read-only (RO) or write-only (WO).

Use the default lines in the file as examples. By default, document properties are read/write. Use the following format for each line:

```
<OfficePropertySet.OfficePropertyName>=<MeridianPropertySet.
MeridianPropertyName>,<Flag>
```

Although Meridian internal properties can be synchronized to document properties, you should never attempt to update internal properties or else **Access denied** errors can occur. Only write to Meridian properties in the **Custom** property set. Flag all attributes linked to Meridian internal properties as write-only (WO).

7. If you want to synchronize a document property with a parent folder (routed) property, specify the folder type name from which to get the folder property as in the following example.

   ```
   <DocumentPropertyName>=
   <FolderTypeName:PropertySetName.PropertyName>,<Flag>
   ```

8. If you want to synchronize one document property with one of several possible routed properties, specify a unique identifier for each of the properties on the left side of the setting as in the following example.

   ```
   <DocumentPropertyName,ID>=
   <FolderTypeName:PropertySetName.PropertyName>,<Flag>
   ```

   The value of ID is insignificant but must be unique among all of the lines in the same section. Using this syntax, you can map the same document property to multiple folder types and the value will depend on the document's actual parent folder. The following example uses three different folder types **NewProject**, **UpgradeProject**, and **RepairProject**.

   ```
   PROJECTNUM,new = NewProject:PSProject.ProjectNum,WO
   PROJECTNUM,upgrade = UpgradeProject:PSProject.ProjectNum,WO

   PROJECTNUM,repair = RepairProject:PSProject.ProjectNum,WO
   ```

9. Click **OK**.
10. Test the link thoroughly by synchronizing each Office property.

    You can do this by changing the Meridian property values for a document in the vault and Office property values in the same document and confirming that the synchronization occurs the way that you expect. You can manually synchronize properties with the Meridian client applications as described in *Synchronize File Properties* in the *Meridian Enterprise User's Guide*.

    Property synchronization can significantly increase the time it takes to route a document to a different workflow state. This is due to the execution of the Office update process in the background. When routing multiple documents, the time is multiplied accordingly. This delay can be minimized with the **RedrawFieldsOnUpdate** setting in the **[Settings]** section of

the Office application link configuration. The setting controls update of the visible fields in Office documents. By default (**0**), the synchronization is disabled.

> **Important!**
>
> When **RedrawFieldsOnUpdate** is disabled, users must manually synchronize properties with the buttons on the **Accruent** toolbar in the Office application in order for the document to reflect the values in Meridian. However, they must be careful to not accidentally overwrite more current values in the document with obsolete values from Meridian.

MicroStation Integration

Title block data synchronization is the primary configurable feature of the MicroStation link. The link can synchronize MicroStation tag values in drawing title blocks with Meridian document properties. For more information on MicroStation tags, see the MicroStation documentation.

Meridian can synchronize property values automatically at key events in a document's life cycle and manually using commands in the Meridian client applications and provided by add-ins installed in the linked applications. The synchronization events are determined by the document's type, as described in Configure Title Block Updates.

You configure the MicroStation link by specifying:

- Which MicroStation tag to synchronize with which Meridian property
- Which direction to synchronize each tag, from MicroStation to Meridian or from Meridian to MicroStation

You configure the MicroStation link by editing a text file in Configurator as described in the following topics.

Configure MicroStation Tag And Cell Synchronization

> **Note:**
> Compile a list of the tag set names used by your organization in title blocks. For each tag set, list the tag names that should be synchronized and their corresponding Meridian property names (and property set name). For each tag, note whether it should be read or written, or both. In effect, determine which application should control the value of that tag, Meridian or MicroStation. When doing so, consider where the drawings will originate from, imported from outside the vault (tags should be read), or created inside the vault with the aid of a wizard that prompts the user for title block information (tags should be written). Identify those tag sets in which Meridian should synchronize the same tags in the same way.

To configure tag synchronization:

1. In Configurator, expand **Environment** in the configuration tree and select **Application Link Settings**.

   The settings for each application link appear in property pages in the right pane.

2. Click the **MicroStation** tab.

   The MicroStation link's settings page appears in the right pane.

3. Click **Edit**.

   To export the settings file to your computer, click the **Export** button. This can be useful if you want to edit the file in another text editor. You can then copy your changes to the Clipboard and paste them into Configurator.

4. Locate the **[PropertySets]** section of the file.

   This section contains the names of all tag sets and cells that the MicroStation link will synchronize.

   > **Note:**
   > The property set section names that are defined in the **[PropertySets]** section use the following syntax:
   >
   > <*COMPropertySetName*>/<*FMTID* >=<*PropertySetName*>, <*ProgID*>
   >
   > Under normal circumstances, the definition should not be edited. If necessary, only <*PropertySetName*>and its corresponding property set section name may be changed. For example, changing both occurrences of **MicroStationCustom** to **uStnCustom**.

5. Type a line for each tag set using the following format:

   <*TagSetName*>=<*TagSetName*>, AMStationEx.AMStatDocAccess

6. Type a line for each cell using the following format:

   <*CellName*>=<*CellName*>, CELL

7. For each tag set or cell in the **PropertySets** section, create a section in the file that begins with the tag set or cell name surrounded by square brackets, for example, **[MyTagSet]**.

   You can type comments in the file by beginning each line with a semicolon (;). Use the default sections in the file as examples. You can delete all unused sections to simplify viewing and editing the file.

8. If the tag set contains date tags that will be synchronized, configure the **TitleBlockDateFormat** setting as described in Format Attribute Date Values .

9. On consecutive lines in each tag set or cell section, list the tag or cell names that you want to synchronize, one line each.

   For each tag or cell, specify the Meridian property set and property name to which you want it synchronized.

   You can find the names of property sets and properties on the **Properties** page of each document type, as described in Create And Edit Document Types.

10. Specify a flag if the property should be read-only (RO) or write-only (WO).

    Use the default lines in the file as examples. By default, document properties are read/write. Use the following format for each line:

    <*TagName* or *CellArrayIndex*>=<*PropertySetName.PropertyName*>,<*Flag*>

    > **Note:**
    > Although Meridian internal properties can be synchronized to title blocks, you should never attempt to update internal properties or else **Access denied** errors can occur. Flag all tags or cells linked to Meridian internal properties as write-only (WO). Only write to Meridian properties in the **Custom** property set.

11. If you want to synchronize a property to a parent project (routed) property, specify the folder type name from which to get the folder property, as in the following example.

    <*TagName*>=<*FolderTypeName:PropertySetName.PropertyName*>,<*Flag*>

12. If you want to synchronize one property to one of several possible routed properties, specify a unique identifier for the property on the left side of the setting, as in the following example.

    <*TagName,ID*>=<*FolderTypeName:PropertySetName.PropertyName*>,<*Flag*>

    The value of ID is insignificant but must be unique among all of the lines in the same tag section. Using this syntax, you can map the same tag to multiple project folder types and the value will depend on the document's parent folder. The following example uses three different folder types: **NewProject**, **UpgradeProject**, and **RepairProject**.

```
PROJECTNUM,new = NewProject:PSProject.ProjectNum,WO
PROJECTNUM,upgrade = UpgradeProject:PSProject.ProjectNum,WO
PROJECTNUM,repair = RepairProject:PSProject.ProjectNum,WO
```

13. Click **OK**.
14. Test the link thoroughly by synchronizing each tag or cell.

    You can do this by changing property values for a drawing in the vault and the title block tag or cell values in the same drawing and confirming that the synchronization occurs in the way that you expect. You can manually synchronize properties with the Meridian client applications as described in *Synchronize File Properties* in the *Meridian Enterprise User's Guide*.

Note:
By default, the MicroStation link creates a new tag set in a drawing for each tag set listed in Configurator if it does not already exist. This can cause problems if the same tag name is used in different tag sets. This may be the case if users have not taken care to name tags uniquely in tag sets, and have used multiple tag sets in different drawings. The MicroStation link will only synchronize the first tag that it finds with each name. Therefore, some tags may be unexpectedly skipped during synchronization. To resolve this issue, locate and edit this setting to control unnecessary tag set creation on all computers:

```
Settings= DoNotCreateMStationTagsets.1
```

Configure MicroStation Document Property Synchronization

Similar to tag synchronization, Meridian can synchronize vault properties with the document properties of MicroStation files: **Title**, **Subject**, **Author**, **Keywords**, **Comments**, and so on.

To configure document property synchronization:

1. In Configurator, expand **Environment** in the configuration tree and select **Application Link Settings**.

   The settings for each application link appear in property pages in the right pane.

2. Click the **MicroStation** tab.

   The MicroStation link's settings page appears in the right pane.

3. Click **Edit**.

   To export the settings file to your computer, click the **Export** button. This can be useful if you want to edit the file in another text editor. You can then copy your changes to the Clipboard and paste them into Configurator.

4. Locate the section of the file that contains the document property that you want to synchronize, for example, **[MicroStationSummaryInf]**.

   The property set section names are defined in the **[PropertySets]** section using the following syntax:

   <*COMPropertySetName*>/<*FMTID*>=<*PropertySetName*>, <*ProgID*>

   Under normal circumstances, the definition should not be edited. If necessary, only <*PropertySetName*>and its corresponding property set section name may be changed. For example, changing both occurrences of **MicroStationCustom** to **uSCustom**.

5. For each document property, specify the Meridian property set and property name to which you want it synchronized.

   You can find the names of property sets and properties on the **Properties** page of each document type, as described in Create And Edit Document Types.

6. Specify a flag if the property should be read-only (RO) or write-only (WO).

   Use the default lines in the file as examples. By default, document properties are read/write. Use the following format for each line:

   <*DocumentPropertyName*>=<*PropertySet.PropertyName*>,<*Flag*>

   The following example maps the document property **Title** to the Meridian property **Title** such that the document property is written from Meridian and not vice versa:

```
Title=Custom.Title, WO
```

> **Note:**
> Although Meridian internal properties can be synchronized to document properties, you should never attempt to update internal properties or else **Access denied** errors can occur. Only write to Meridian properties in the **Custom** property set. Flag all attributes linked to Meridian internal properties as write-only (WO).

7. If you want to synchronize a document property with a parent folder (routed) property, specify the folder type name from which to get the folder property as in the following example.

   ```
   <DocumentPropertyName>=
   <FolderTypeName:PropertySetName.PropertyName>,<Flag>
   ```

8. If you want to synchronize one document property with one of several possible routed properties, specify a unique identifier for each of the properties on the left side of the setting as in the following example.

   ```
   <DocumentPropertyName,ID>=
   <FolderTypeName:PropertySetName.PropertyName>,<Flag>
   ```

   The value of ID is insignificant but must be unique among all of the lines in the same section. Using this syntax, you can map the same document property to multiple folder types and the value will depend on the document's actual parent folder. The following example uses three different folder types **NewProject**, **UpgradeProject**, and **RepairProject**.

   ```
   PROJECTNUM,new = NewProject:PSProject.ProjectNum,WO
   PROJECTNUM,upgrade = UpgradeProject:PSProject.ProjectNum,WO

   PROJECTNUM,repair = RepairProject:PSProject.ProjectNum,WO
   ```

9. Click **OK**.
10. Test the link thoroughly by synchronizing each MicroStation document property.

    You can do this by changing the Meridian property values for a drawing in the vault and MicroStation document property values for the same drawing and confirming that the synchronization occurs in the way that you expect. You can manually synchronize properties with the Meridian client applications as described in *Synchronize File Properties* in the *Meridian Enterprise User's Guide*.

Configure Advanced Settings - MicroStation

Under normal circumstances, you should not need to configure the MicroStation link's advanced settings. They are provided for integration into very specific environments. Change these settings only under the direction of Accruent Technical Support.

To configure the advanced settings:

1. In Configurator, expand **Environment** in the configuration tree and select **Application Link Settings**.

   The settings for each application link appear in property pages in the right pane.
2. Click the **MicroStation** tab.

   The MicroStation link's settings page appears in the right pane.
3. Click **Edit**.

   To export the settings file to your computer, click the **Export** button. This can be useful if you want to edit the file in another text editor. You can then copy your changes to the Clipboard and paste them into Configurator.
4. Locate the section of the file that begins with **[Settings]** and locate the setting that you want to change from the following table. If the setting does not exist, you can create it.
5. Type the value of the setting on the right side of the expression using the syntax:

   `<SettingName>=<Value>`
6. Click **OK**.

The available advanced settings are described in the following table.

Advanced settings

Setting	Description
NoReferencesFromTo	Prevents users from creating references between the specified document types. Specify the document types as semi-colon delimited pairs of internal names, for example, between Type1 and Type2 and also between Type5 and Type6: `NoReferencesFromTo = Type1, Type2; Type 5, Type6`

Setting	Description
ReferencesCheckCircular	Controls circular reference checking and the user's ability to replace all or only individual references: **0**: Skips check circular reference checking **1**: Check circular references and prompt the user with **OK to All** and **Cancel to ALL** buttons. **2**: Check circular references with **OK** and **Cancel** buttons.

Revit Integration

The Meridian link with Revit provides the following functionality:

- Meridian property editing within Revit
- Automatic presentation file generation and import to the vault
- Worksharing among multiple users

Meridian can synchronize property values automatically at key events in a document's life cycle and manually using commands in the Meridian client applications and provided by an add-in installed in Revit. The synchronization events are determined by the document's type, as described in Configure Title Block Updates. You configure the Revit link by specifying:

- Which Revit property (called parameters in Revit) to synchronize with which Meridian property
- Which direction to synchronize each property, from Revit to Meridian or from Meridian to Revit

Property editing in Revit does not require any configuration. Presentation file import requires minor document type configuration.

The Revit link supports worksharing by detecting when a local copy of a model is synchronized with the central file in the vault.

The link will:

- Route the central file to an editable workflow state for the user
- Release the central file after synchronization has finished
- Update properties of the central file with synchronization information
- Maintain a Meridian Enterprise reference between the local copy and the central file

Worksharing configuration specifies the applicable Meridian property names and option settings.

You configure the Revit link by editing a text file in Configurator as described in the following topics.

Configure Revit property synchronization

The Revit property categories that are supported by the Revit link are:

- **Project Information**:

  Example: `Project Information.Project Status=AMDocumentWorkFlowPropertySet._STATUSTEXT,WO`

- **ViewSheet**:

  Examples:

  - `ViewSheet:1.Designed By=AMFSObjectPropertySet._CREATEDBY,WO`
  - `ViewSheet:*.Designed By=AMFSObjectPropertySet._CREATEDBY,WO`

Compile a list of the Revit parameter (property) names used by your organization in title blocks. Note the Meridian property name (and property set name) that corresponds to each Revit property that you want to synchronize. Also for each Revit property, note whether it should be read or written, or both. In effect, determine which application should control the value of that attribute, Meridian or Revit. When doing so, consider where the documents will originate from, imported from outside the vault (Revit properties should be read), or created inside the vault with the aid of a wizard that prompts the user for title block properties (Revit properties should be written).

Meridian supports synchronization of both standard properties and custom properties. The link also supports the asterisk (*) wildcard character to signify all drawing sheet or title block items.

To configure Revit property synchronization:

1. In Configurator, expand **Environment** in the configuration tree and select **Application Link Settings**.

   The settings for each application link appear in property pages in the right pane.

2. Click the **Revit** tab.

   The Revit link's settings page appears in the right pane.

3. Click **Edit**.

   To export the settings file to your computer, click the **Export** button. This can be useful if you want to edit the file in another text editor. You can then copy your changes to the Clipboard and paste them into Configurator.

4. Type a line in the file for each Revit property that you want to synchronize.

   The value of each Revit property setting must include the corresponding Meridian property set and property name that you want to synchronize. You can type comments in the file by

beginning each line with a semicolon (;). Use the default property settings in the file as examples.

You can find the names of property sets and properties on the **Properties** page of each document type, as described in Create And Edit Document Types.

5. Specify a flag if the property should be read-only (RO) or write-only (WO).

   Use the default lines in the file as examples. By default, document properties are read/write. Use the following format for each line:

   <RevitPropertySet.RevitPropertyName>=<MeridianPropertySet.MeridianPropertyName>, <Flag>

   The following example maps the document property **Title** to the Meridian property **Title** such that the document property is written from Meridian and not vice versa:

   ```
   Title=Custom.Title, WO
   ```

   > **Note:**
   > Although Meridian internal properties can be synchronized to document properties, you should never attempt to update internal properties or else **Access denied** errors can occur. Only write to Meridian properties in the **Custom** property set. Flag all attributes linked to Meridian internal properties as write-only (WO).

   If a property will contain a date that will be synchronized, configure the **TitleBlockDateFormat** setting as described in Format Attribute Date Values .

6. If you want to synchronize a property to a parent folder (routed) property, you must specify the folder type name from which to get the folder property as in the following example.

   <RevitPropertyName>=<FolderTypeName:PropertySetName.PropertyName>, <Flag>

7. If you want to synchronize one property to one of several possible routed properties, you must specify a unique identifier for each of the property on the left side of the setting as in the following example.

   <RevitPropertyName,ID>=
   <FolderTypeName:PropertySetName.PropertyName>,<Flag>

   The value of ID is insignificant but must be unique among all of the lines. Using this syntax, you can map the same Revit property to multiple project folder types and the value will depend on the document's parent folder. The following example uses three different folder types **NewProject**, **UpgradeProject**, and **RepairProject**.

   ```
   PROJECTNUM,new = NewProject:PSProject.ProjectNum,WO
   PROJECTNUM,upgrade = UpgradeProject:PSProject.ProjectNum,WO
   PROJECTNUM,repair = RepairProject:PSProject.ProjectNum,WO
   ```

8. Click **OK**.

9. Test the link thoroughly by synchronizing each Revit property.

   You can do this by changing the Meridian property values for a drawing in the vault and Revit property values in the same drawing and confirming that the synchronization occurs that way that you expect. You can manually synchronize properties with the Meridian client applications as described in *Synchronize File Properties* in the *Meridian Enterprise User's Guide*.

Synchronize Multiple Sheets Per Drawing

If your Revit drawings contain multiple sheets, you can configure the Revit link to store the sheet properties in the vault so that users can view and modify the values in Meridian.

To synchronize multiple sheets per drawing:

1. Enable the **Synchronize the title blocks in all layouts** option described in Configure Title Block Updates.
2. In Configurator, expand **Environment** in the configuration tree and select **Application Link Settings**.

   The settings for each application link appear in property pages in the right pane.
3. Click the **Revit** tab.

   The Revit link's settings page appears in the right pane.
4. Click **Edit**.

   To export the settings file to your computer, click the **Export** button. This can be useful if you want to edit the file in another text editor. You can then copy your changes to the Clipboard and paste them into Configurator.
5. Locate the section of the file that begins with **[SheetList]**.
6. Modify the settings using the descriptions in the following table. If a setting is missing, default values are applied.

   Sheet list settings

Setting	Description
TableCaption	Label of the tab that shows the sheet list in Meridian.
GridCaption	Caption of the sheet list on the tab that shows the sheet list in Meridian.
DocumentType	Name of the Meridian document type for which to use the sheet list settings.

7. Locate the section of the file that begins with **[PropertyMap]**.

   This section specifies the column names for the properties of each title block as they will appear to users in Meridian when they set the values for each sheet as described in *Create a Sheet Set* in the *Meridian Enterprise User's Guide*. Each line should map a Revit property to a Meridian property using the following format:

   ```
   Multiple Sheets.<Property Name> = <InternalColumnName>
   [.<DisplayColumnName>]
   ```

Where **Multiple Sheets** is the predefined Revit property category used by the link. The following example shows the available column names.

```
Multiple Sheets.Sheet Number = SheetNumber.Sheet Number
Multiple Sheets.Sheet Name = SheetName.Sheet Name
Multiple Sheets.Designed By = DesignedBy.Designed By
Multiple Sheets.Drawn By = DrawnBy.Drawn By
Multiple Sheets.Approved By = ApprovedBy.Approved By
```

8. Click **OK**.

Configure the Revit Document Type

The Revit link provides a **Create Presentation** command in an add-in installed with Revit. The command generates a presentation document (`.dwf` file) of the open building model and stores it in the vault with the model. This makes the presentation easy to find and associates it with the same property values as the building model from which it was made. It also makes the building model easier to view since `.dwf` files are supported by the viewer, but Revit building model files are not supported.

The link attempts to attach the presentation file to the building model as a Meridian hybrid part. Therefore, the document type that is assigned to Revit documents must be a hybrid document type for the command to succeed.

To configure the Revit document type:

1. Create a new document type for Revit or edit an existing document type and assign to it the Revit file extension.
2. The only requirement for the Revit link is that you enable the **Hybrid document** option as described in Configure Document Type General Options. The other options may be set to meet your requirements.

Configure Revit Worksharing

The Meridian Revit link supports Revit worksharing and can manage collaboration on worksets and Revit central files.

1. In Configurator, expand **Environment** in the configuration tree and select **Application Link Settings**.

   The settings for each application link appear in property pages in the right pane.

2. Click the **Revit Building** tab.

   The Revit link's settings page appears in the right pane.

3. Click **Edit**.

   To export the settings file to your computer, click the **Export** button. This can be useful if you want to edit the file in another text editor. You can then copy your changes to the Clipboard and paste them into Configurator.

4. Locate the section of the file that begins with **[Worksharing]**.

   This section contains the names of Meridian properties to synchronize and settings to control the link.

5. Delete the semicolon (;) at the beginning of each line that contains a setting that you want to configure.

6. Edit the value on the right side of the setting statement to the value that you want using the descriptions in the following table.

   Specify Meridian properties using the syntax <*PropertySetName*>.<*PropertyName*>. The properties must be created manually. If you want them to be visible to users, you must also create and configure a property page to show them.

7. Click **OK**.

Revit link options

Option	Description
EditableWorksets	A property that will be updated by the link with a list of the currently available worksets in the model.

Option	Description
HideCentralGetWriteAccess	This setting controls whether the user is shown a dialog to confirm that the central file should be routed to an editable workflow state during synchronization. The possible values are: **0**: Prompt the user to confirm or discard the workflow state change **1**: Do not prompt the user and leave the central file in its original state **2**: Route the document without prompting the user
HideCentralIsReadOnly	If this setting is **1**, no warning is shown to the user if the central file could not be routed to an editable workflow state during synchronization. If this setting is **0**, a warning is shown.
ReloadedLatestChangesDate	A property that will hold the date when the model was last reloaded from its central file.
SynchronizedWithCentralDate	A property that will hold the date when the model was last synchronization to its central file.
UseUnderChangeToSynchronizeCentral	If this setting is **1**, the central file is routed to the **Quick Change** workflow state (revision is not incremented) during synchronization. If this setting is **0**, the central file is routed to the **Under Change** state (revision is incremented, if configured) of its document type workflow.

Configure Automatic Sheet Set Import

The Meridian Revit link supports the automatic import of sheet set files that are exported from Revit. Each file in the sheet set can be associated with the model from which it came by a Meridian reference. You configure automatic sheet set import by specifying the export types of the files that you want to be related.

> **Note:**
> This feature has the following limitations:
>
> - If exporting the sheet set results in multiple files, the last file in the set is not imported automatically and must be imported manually. This is due to a defect in the Revit API and might be resolved in a future release.
> - If exporting the sheet set will result in multiple files, Meridian will create a temporary empty document with the name that is specified in the Revit **Save** dialog box as the prefix of the exported files. If the document type that is assigned to this file is configured to show wizard pages, they will appear but can be ignored. The temporary document will be automatically revoked after the export has completed.
> - Before re-exporting the same sheet set, a user must place all existing documents in the sheet set under change in a workflow. This is so that the files can be updated and new revisions created and not imported as duplicate documents.

To configure automatic sheet set import:

1. In Configurator, expand **Environment** in the configuration tree and select **Application Link Settings**.

   The settings for each application link appear in property pages in the right pane.
2. Click the **Revit Building** tab.

   The Revit link's settings page appears in the right pane.
3. Click **Edit**.

   To export the settings file to your computer, click the **Export** button. This can be useful if you want to edit the file in another text editor. You can then copy your changes to the Clipboard and paste them into Configurator.
4. In the section of the file that begins with **[ImportExport]**, find the **ReferencesFor** setting.
5. On the right side of the setting statement, type the export types (not file extensions) of the files that you want to be related by Meridian references separated by commas (,).
6. Click **OK**.

Email Integration

Meridian Enterprise provides integration with the Microsoft Outlook and IBM Lotus Notes email programs due to the importance of email in modern engineering. It does this through a shared set of configuration settings that control specific add-ins in each of the email programs.

The email link not only allows users to easily store messages and attachments in Meridian vaults, but it can also be configured to automatically set Meridian properties using message and attachment properties. Email messages can be stored in one of several different formats to make them easier to read with the viewer.

The email link works with a Microsoft Outlook Add-In that is installed on client computers by the Meridian setup program along with the Office link. IBM Lotus Notes can be integrated by installing the link on client computers with the Meridian setup program and deploying an **Email Export** button to each Notes user's Universal toolbar.

> **Note:**
> Users who save messages to the vault require the **Release Workflow** privilege.

Configuration of the link is described in the following topics.

Configure the Email Link

The email link settings specify the storage format of messages, the document types assigned to them, and the Meridian properties that are set when messages are imported. These settings are applied when messages are imported with the email link tools and by drag-and-drop.

> **Important!**
> Mapping message properties that might contain illegal characters to Meridian properties that are used in a Field-Path definition can produce undesirable results and errors. For example, the **Subject** property of messages that are replies (RE:) or forwarded (FW:) can contain the colon (:) character, which is not allowed in folder names. We recommend only mapping those properties that will reliably contain legal characters to properties that are used in a Field-Path definition.

To configure the email link settings:

1. In Configurator, expand **Environment** in the configuration tree and select **Application Link Settings**.

   The settings for each application link appear in property pages in the right pane.

2. Click the **Email Settings** tab.

   The email link's settings page appears in the right pane.

3. Click **Edit**.

   To configure the settings in the other sections, see Configure the Office Link.

   To export the settings file to your computer, click the **Export** button. This can be useful if you want to edit the file in another text editor. You can then copy your changes to the Clipboard and paste them into Configurator.

4. Modify the settings described in the following table as necessary.

   Refer to the comments in the property page for additional information. You can find the names of property sets and properties on the **Properties** page of each document type, as described in Create And Edit Document Types.

   In the property mappings configuration, each property can only be mapped once in each section or errors will result.

5. Click **OK**.

6. Test the link thoroughly by importing messages and attachments with the Meridian client applications as described in *Store Outlook Messages and Attachments* and *Export Lotus Notes Messages and Attachments* in the *Meridian Enterprise User's Guide*.

Email link settings

Setting	Description
DefaultAttachmentDocType	The default document type for saving attachments in the vault.
DefaultEmailDocType	The default document type for saving messages in the vault.
EmailStorageFormat	The format for messages stored in the vault. The Notes link supports the plain text, HTML, and .eml formats and an Auto setting that will retain the original format of the messages. The Outlook link always stores messages in the .msg format.
ExcludeAttachmentsExt	A semicolon (;) delimited list of the file extensions of attachments that you would like to exclude from being saved in the vault.
ForceAttachmentOptions	When set to **1**, users cannot override the **MinimumAttachmentSizeKB** setting by manually selecting attachments when storing messages.
HashFilterAttachments	When set to **1**, prevents Meridian Enterprise from overwriting identical existing attachments. When this setting is enabled the following property mapping should also be set in the **Lotus_Message_Properties** or **MSOutlook_Message_Properties** section: `Hash = Custom.Hash`
HashFilterMessages	When set to **1**, prevents Meridian Enterprise from overwriting identical existing messages. Embedded graphic images (such as signature logos) in Lotus Notes messages are specified a unique name by Lotus Notes every time that they are exported. This means that the same message can be exported multiple times to a vault without detection by Meridian Enterprise even if this setting is cleared.
LotusEmail	The document type that you want assigned to the Lotus Notes messages stored in the vault.
Lotus_Attachment_Properties	The properties that you want to be set when Lotus Notes attachments are stored in the vault.
Lotus_Message_Properties	The properties that you want to be set when Lotus Notes messages are stored in the vault.
MessageDocTypes	The document type names to be presented to users when saving messages and their attachments in the vault. Multiple names must be separated by semicolons. Different document types for messages versus attachments can be specified.

Setting	Description
MinimumAttachmentSizeKB	The minimum size (in KB) of an email message attachment to be saved in the vault. This setting is intended to filter out irrelevant attachments such as message signature images.
MSOutlook_Attachment_ Properties	The Meridian properties that you want to be set when Outlook attachments are stored in the vault.
MSOutlook_Message_ Properties	The Meridian properties that you want to be set when Outlook messages are stored in the vault.
MSOutlookEmail	The document type that you want assigned to Outlook messages stored in the vault.
SaveAttachments	If set to **1**, saves message attachments in the vault.
SkipDialogsOnDropOnly	Suppresses display of the attachment selection dialog and the document type selection dialog when saving attachments in the vault. The possible values are: **0**: Do not skip (default) **1**: Skip
SkipDocTypesDialog	Suppresses display of the document type selection dialog when saving attachments in the vault. The possible values are: **0**: Do not skip (default) **1**: Skip **2**: Skip only when the email message has no attachments
SkipSelectionDialog	Suppresses display of the attachment selection dialog when saving attachments in the vault. The possible values are: **0**: Do not skip (default) **1**: Skip **2**: Skip only when the email message has no attachments

Deploy the Lotus Notes Button

After the IBM Lotus Notes link has been installed by the Meridian setup program on each user's computer, a Notes administrator must send a special email that includes an installation button to each Notes user. Clicking the installation button adds an **Email Export** button to the user's Universal toolbar. The email should instruct the user to:

1. Temporarily hide the Universal toolbar.
2. Click the installation button.
3. Unhide the Universal toolbar.
4. Close and reopen the mail database.

When these steps are complete, the user will have a new **Email Export** button for exporting mail to Meridian.

> **Note:**
> Users must have either **Manager** access or **Designer** and **Create LotusScript/Java agents** access to their mail database to install the button.

Create the Email

To create the email:

1. Create a new email message in Notes.
2. On the **Create** menu, highlight **Hotspot** and click **Button** to create a new button in the body of the message.
3. Add LotusScript code from a file that is installed by the Notes link to this button.

   We recommend you add it to the declarations section. The LotusScript code file is installed by default in `C:\BC-Meridian\Program\LotusScript.txt` on the Meridian server.
4. Add instructions to the message telling the users what they need to do to install the button. Below is example text that you can use as-is or modify to your own requirements.
5. Send the email message to all Notes users.

Example message text

The following is an example of instructions you can send to your users to install the button.

To install the **Meridian Email Export** button into your Notes client toolbar:

1. Hide the Universal toolbar.
2. On the **File** menu, select **Preferences** and click **Toolbar Preferences**.
3. On the **Basics** tab, disable **Show toolbars** in the **Toolbar Display** section and click **OK**.

   Another way to toggle visibility of the toolbar is to right-click the toolbar and clear **Universal**.
4. Click the button that appears below these instructions.
5. After the installation process is complete, show the Universal toolbar.
6. On the **File** menu, select **Preferences** and click **Toolbar Preferences**.
7. Choose between two options:
   - On the **Basics** tab, enable **Show toolbars** in the **Toolbar Display** section and click **OK**.
   - Or right-click the toolbar and select **Universal**.

     A new **Email Export** button will appear in the Universal toolbar. If you already have a button in the Universal toolbar with the same name, it will be replaced with a new one.
8. Close and reopen the mail database.

Format Attribute Date Values

Meridian stores date information so that it can be formatted according to the Windows locale settings of users. This may not be the format that you want used in drawing title blocks. If not, you can format the date values that are synchronized with AutoCAD attributes, MicroStation tags, and Revit properties.

There are two levels at which you can convert date values:

- One format for all insertions of the same title block. This is the typical scenario.
- Different format for each insertion of a title block per drawing. This scenario is rare.

Format Attribute Data Value for All Insertions of Same Title Block

To format an attribute date value for all insertions of the same title block:

1. In Configurator, expand **Environment** in the configuration tree and select **Application Link Settings**.

   The settings for each application link appear in property pages in the right pane.

2. Click the **AutoCAD/MicroStation/Revit** tab.

   The link's settings page appears in the right pane.

3. Click **Edit**.

   To export the settings file to your computer, click the **Export** button. This can be useful if you want to edit the file in another text editor. You can then copy your changes to the Clipboard and paste them into Configurator.

4. Locate the section in the file that begins with the block name surrounded by square brackets, for example, **[MyTitleBlock]** and locate the **TitleBlockDateFormat** setting.

   If the setting does not exist, you can create it. The value of this setting is options that specify how to format synchronized date and time values using the following format:

   TitleBlockDateFormat = D{*<DateFormat>*} T{*<TimeFormat>*}

   The date and time format options are described in the following tables. The following example formats dates like 11/03/2003:

   TitleBlockDateFormat = D{dd/MM/yyyy}

   The following example formats dates as 03-Mar-11.

   TitleBlockDateFormat = D{yy-MMM/dd}

5. Edit the value of **TitleBlockDateFormat** to meet your requirements.
6. Click **OK**.

Format Attribute Date Value per Insertion of Title Block

To format an attribute date value for each insertion of a title block per drawing:

1. In Configurator, expand **Environment** in the configuration tree and select **Application Link Settings**.

   The settings for each application link appear in property pages in the right pane.
2. Click the **AutoCAD/MicroStation/Revit** tab.

   The link's settings page appears in the right pane.
3. Click **Edit**.

   To export the settings file to a location outside the vault, click the **Export** button. This can be useful if you would rather edit the file in your favorite text editor. You can then copy your changes to the Clipboard and paste them into Configurator.
4. Locate the section in the file that begins with the block name surrounded by square brackets, for example, **[MyTitleBlock]** and locate the **TitleBlockDateFormatProperty** setting.

   If the setting does not exist, you can create it. The value of this setting is the internal name of a custom property that specifies how to format date and time values of the title block in the current drawing:

   TitleBlockDateFormatProperty = *<PropertySet>.<PropertyName>*
5. Click **OK**.
6. Set the value of the specified property in each drawing to meet your requirements.

   The value of the property can be any of the following formats:

   `D{<DateFormat>} T{<TimeFormat>}`

   The date and time format options are described in the following tables. The following example formats dates like 11/03/2003:

   `D{dd/MM/yyyy}`

   The date format can also be specified without the D parameter, for example:

   `{dd/MM/yyyy}`

VBScript Function to Interpret Date Formats

If you specify a format that does not include separators between the different time units (ddMMMyyyy, for example) the link will not be able to convert the attribute values to Meridian vault storage format because the meanings of the individual numbers will be ambiguous. To resolve this, you can provide a VBScript rule for Meridian to interpret the date format.

Add the following line to the block section described above where *<FunctionName>* is the name of the VBScript function that you want the link to use to interpret the date/time attribute values in that block. The function name can be anything you want it to be. Different converter functions can be specified for each block definition.

DateTimeConverter=*<FunctionName>*

For example, if *<FunctionName>* is DateTimeConverterFunc, the VBScript function must be defined like the following example:

```
' BlockName - Block name passed from the link
' AttrName - Attribute name passed from the link
' DateStr - Attribute value passed from the link
' Result - Converted value to save as the document property value

Function DateTimeConvertorFunc(BlockName, AttrName, DateStr, Result)
   On Error Resume Next
   'Perform your date/time conversion here
   Result = DateValue("25.06.2013")
   'Return whether or not to use Result
   DateTimeConvertorFunc = True
End Function
```

If the function returns **True**, the result will be used as the property value of the linked vault document. If the function returns **False**, the property value will not be updated.

This function is supported for AutoCAD drawings, sheet sets, and AutoCAD Plant 3D projects only.

The order of conversion precedence is:

1. Script function described above
2. The property specified in **TitleBlockDateFormatProperty**
3. The format specified by **TitleBlockDateFormat**
4. The format of the system locale

Date Format Options

The following table describes the date format options.

Attribute date value format options

Characters	Description
d	Day of the month as digits with no leading zero for single-digit days
dd	Day of the month as digits with leading zero for single-digit days
ddd	Day of the week as a three-letter abbreviation associated with the Windows locale
dddd	Day of the week as its full name associated with the Windows locale
M	Month as digits with no leading zero for single-digit months
MM	Month as digits with leading zero for single-digit months
MMM	Month as a three-letter abbreviation associated with the Windows locale. Not supported by **TitleBlockDateFormatProperty**
MMMM	Month as its full name associated with the Windows locale
y	Year as last two digits with no leading zero for years less than 10
yy	Year as last two digits with leading zero for years less than 10
yyyy	Year as four digits

Time Format Options

The following table describes the time format options.

Attribute time value format options

Characters	Description
h	Hours with no leading zero for single-digit hours; 12-hour clock
hh	Hours with leading zero for single-digit hours; 12-hour clock
H	Hours with no leading zero for single-digit hours; 24-hour clock
HH	Hours with leading zero for single-digit hours; 24-hour clock
m	Minutes with no leading zero for single-digit minutes

Characters	Description
mm	Minutes with leading zero for single-digit minutes
s	Seconds with no leading zero for single-digit seconds
ss	Seconds with leading zero for single-digit seconds
t	One-character time period, such as A or P
tt	Two-character time period, such as AM or PM

Link To External Applications

All other Meridian application links besides the type described in this topic link *to* Meridian from the other application. There is another type of application link possible in Meridian, *from* Meridian to external applications. This type of link can be useful for starting applications for many different purposes:

- Applications that query additional data about Meridian documents, such as reporting systems
- Applications that are used with Meridian for which no other application link exists, such as custom applications developed with the Meridian API
- Applications that are not document-based or for which no documents exist in the vault
- Any other purpose for which you want to start the application from within the Meridian client applications and optionally pass it property values for the object selected in Meridian

You link to these external applications by adding an item to the **Tools** menu in the Meridian client applications. The definition of the menu item specifies a command line to run and up to nine command-line arguments that specify property values of the selected object. You can create up to 63 external application links in this way.

To create an external application link:

1. In Configurator, expand **Environment** in the configuration tree and select **Application Link Settings**.

   The settings for each application link appear in property pages in the right pane.

2. Click **Application Integration**.

   The **Application Integration** settings page appears in the right pane.

3. Click **Edit**.

   To export the settings file to your computer, click the **Export** button. This can be useful if you want to edit the file in another text editor. You can then copy your changes to the Clipboard and paste them into Configurator.

4. Locate the **[ToolsMenu]** section in the text.

   If one does not exist, create it.

5. Type a line in the **[ToolsMenu]** section in the form *<Command line>=<Menu item name>*.

   For example: **notepad.exe = Open Notepad.** If you want to pass arguments on the command line that are Meridian property values, type one placeholder for each argument on the command line in the form *$n* where *n* is a sequential number from **1** to **9**. For example, **notepad.exe $1 = Open in Notepad.**

6. Type one line in the **[ToolsMenu]** section for each placeholder used in the command line in the form *<$n>=<PropertySet.PropertyName>* where *$n* is a placeholder and where *<PropertySet.PropertyName>* is the property name whose value you want to pass as *$n*. For example:

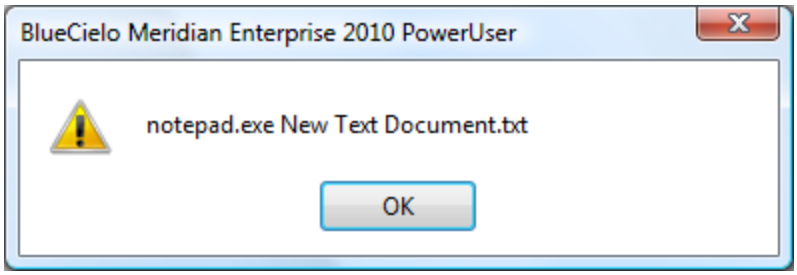
   ```
   $1=CommonPropertySet._DISPLAYNAME
   ```

   - You can find the names of property sets and properties on the **Properties** page of each document type, as described in Create And Edit Document Types.
   - To redefine a placeholder with a different property value for a different menu item, repeat the placeholder declaration with the new property value before specifying the menu item command line.
7. Click **OK**.
8. Test the menu items from the **Tools** menu.

When a user selects the menu item from the **Tools** menu, Meridian substitutes the property values for the selected object (folder or document) for the placeholders in the command line and sends the command line to Windows for execution.

You can type lines with the special word **DEBUG** in the **[ToolsMenu]** section to test placeholders and confirm property values. The word **DEBUG** instructs Meridian to display the results of the remainder of the line in a message box. For example, the following command line will display the message box in the following figure:

```
DEBUG notepad.exe $1 = Open in Notepad
```



When you are satisfied with the syntax of the line, remove the word **DEBUG** to make the link fully functional.

The **DEBUG** instruction supports the text formatting options described in the *Formatting Text With RTF Codes* article in the *Meridian Enterprise VBScript API Reference*.

> **Note:**
> The special placeholder **$VAULTPATH** represents the path to the current vault and can be used to call custom external applications to open the vault, such as to access and export data. The placeholders **$ID** and **$PATH** can be used to pass the selected document's file system ID and file system path, respectively if the application needs to change the file even though it is not under change in Meridian.

Email Notifications

Meridian Enterprise provides numerous features for integrating email into engineering content management:

- Copies of documents or links can be sent from the desktop client applications as described in the *Email Documents* article in the *Meridian Enterprise User's Guide*.
- Custom email functionality can be programmed with VBScript as described in the *NewMailMessage Object* article in the *Meridian Enterprise VBScript API Reference*.
- Email notifications regarding vault activity can be sent automatically to different groups of recipients.

This topic and the following topics describe the last feature in the preceding list.

Notifications can be either implicit or explicit. Implicit notifications are sent to users who participate in workflows. The users do not need to do anything additional in order to receive notifications. Their participation alone implies that they are also notification recipients. Explicit notifications are sent to users who explicitly subscribe to specific documents regardless of whether they participate in workflows or not.

Notifications are only sent to the primary email address as described in the *Create and edit user accounts* article in the *Meridian Enterprise Administrator's Guide*.

Email notifications are further divided into the following types:

- Project and document event notifications (implicit). These are configured by a System Administrator and require no user actions to receive them.

  Notifications can be sent to one or more groups of recipients, which are options of a notification definition:

  - **To-Do Persons**: Includes the persons listed in the **To-Do Person** property of documents in an active workflow. If the event named by the definition does not affect this property, selecting this recipient group is meaningless.
  - **Managers**: Includes the persons listed in the **Managers** property of documents in an active workflow. If the event named by the definition does not affect this property, selecting this recipient group is meaningless.

  Notifications that are generated as part of a batch operation (for example, a workflow transition) are grouped together as a single email message.
- Document subscriptions (explicit). These require users to select and subscribe to the specific events for which they want to be notified. These must also be enabled by a System Administrator by selecting an option of a notification definition:

- **Subscribers**: Includes the persons who have manually subscribed to documents as described in the Subscribe To Changes article in the *Meridian Enterprise User's Guide*. Subscribers can receive notifications for the following types of events:
    - Documents deleted or redlined
    - Project copies (Managed Change or Advanced Project Workflow Module) created, discarded, released from projects
    - Document type workflow and workflow definition actions

- Reminders (implicit). These are notifications that pertain to a specific set of documents and are configured by a System Administrator. These can be sent to any recipient group.

All of these types of email notifications are enabled when the connection to a subscriptions database is configured as described in *View and Edit Vault Properties* in the *Meridian Enterprise Administrator's Guide* . Each type cannot be enabled separately but each type is configured separately.

Configuring each of these types of notifications is described in the following topics.

Configure Event Notifications

Event notification messages are initiated by the Meridian application server and sent by a specified email server. These notifications are those that your organization should consider as mandatory for users to receive. The users cannot configure which messages they receive and they may not decline to receive them. As such, these messages should be the minimum that are necessary for your business processes.

Additional messages can be sent by user-configured subscriptions or reminders as described elsewhere or by programming custom notifications. You configure event notifications by specifying which groups of users (**Subscribers**, **To-Do** assignees, or workflow **Managers**) that should receive notifications when specific events occur in the vault. The users will receive notifications when these events occur for vault items that are related to the current document or project folder.

> **Note:**
> Configuring the notification definitions does not configure how subscriptions are stored or how the messages are actually sent. That must be done by creating the notifications table and configuring the table connection and SMTP mail server options. You can learn more about these topics in the *Create a Subscriptions Database*, *View and Edit Vault Properties*, and *Specify a Mail Server - Administrator* articles in the *Meridian Enterprise Administrator's Guide .*
>
> Configuring the table connection enables all three types of email messages: event notifications, document subscriptions, and reminders. You can configure the email address used to send the notifications when you configure your SMTP mail server options. If you don't update the sender address, a default address will be used.

Default Notification Definitions

By default, Meridian provides notification definitions for the common events that require notifications:

Email notification events

Option	Description	Recipients related to...
As-Built updated	When a new revision of a master document is created as the result of a project copy being released.	Sibling project copies
Document imported from Portal	When a document is returned from being sent to Meridian Portal.	Current document

Option	Description	Recipients related to...
Document redlined	When a document is annotated in the Meridian viewer.	Current document
Document workflow released	When a document is released at the end of its workflow as a new revision.	Current document
Document workflow revoked	When the workflow of a document is aborted and the document reverts to its last released revision.	Current document
Document workflow started	When a document is placed under change to create a new revision.	Current document
Document workflow transition executed	When a document is routed to a different intermediate (not released) state in its workflow.	Current document
Project copy created	When a document is assigned (copied) to a project folder.	Master document or parent project folder
Project copy discarded	When a project copy is discarded (not deleted) from a project folder.	Master document or parent project folder
Project copy released	When a project copy is released from a project folder as a new revision of its master (source) document.	Master document or parent project folder
Project workflow transition executed	When a project folder is routed to a different intermediate (not released) state in its workflow.	Parent project folder

For more information about these events, see the *Meridian Enterprise User's Guide* .

These definitions cannot be deleted. Additional definitions can be created for custom requirements and the definitions used in VBScript programming. Each notification definition can send messages to the users of any of the groups described in Email Notifications.

Subscription notifications use the same definitions as event notifications except that the recipients must register their subscriptions to documents manually (opt-in) in order to receive the notification messages. In addition, each definition must be enabled for the **Subscribers** group as described in the following tasks.

Notes about Functionality

- To subscribe to documents for themselves or for others, users must have the Allow Subscriptions or Allow Management of Subscriptions for others privileges.
- Notifications are not sent when documents are released using VBScript (for example, `Document.ChangeWorkflowState AS_WF_RELEASED, "", ""`) if the **SDWFEvents** setting is set to **N** (default). If such script exists in the vault configuration and

the document type workflow events must be prevented, then you must provide custom notification scripting. If the document type workflow events do not need to be prevented, set **SDWFEvents** to **Y**. The setting can be found in the **[ScriptEvents]** section of the **Application Integration** tab in the **Environment** branch of the configuration tree in Configurator.

For more information about limiting the events generated by VBScript, see *Limiting Events Generated By VBScript* in the *Meridian Enterprise VBScript API Reference*.

- To disable notification for specific transitions of a workflow definition, see Create And Edit Transitions.
- Event notifications occur for both the Managed Change and Meridian Advanced Project Workflow Module features.

Configure Event Notifications

To configure event notifications:

1. In Configurator, expand **Environment** in the configuration tree and select **Notification Settings**.

   The **Notification Settings** page appears in the right pane. The page lists the existing notification definitions for the current vault.
2. Click **Edit**.
3. Choose between two options:
   - To enable or disable notifications for combinations of events and recipient groups, select check boxes in the columns of the definitions list that correspond to the users that you want to receive notifications when the event occurs.
   - To view or edit the details about specific event notifications:
     a. Double-click the row of the event, or select the row and click **Edit**.

        The definition's **Properties** dialog box appears.

     b. For each tab in the dialog that represents a group of recipients, click options or type values using the descriptions in the following table.

     c. Click **OK**.
4. Click **OK**.

Notification definition options

Option	Description
Notify this group	Sends notifications to this group of users.
Message subject	Type the subject of the message that you want to send to these users.
Message text	Type the text of the message that you want to send to these users. The text can include any of the following variables: • <%currentuser%> • <%currentproject%> • <%currentvault%>
Message format	Select the format of the message that you want to send to these users.
Include links	Select the links that you want to include in the message together with the message text. If the **Plain text** format is selected, the links will be plain text paths and not hyperlinks. **Important!** Be careful when enabling the **Rendition** option. Notifications are initiated before renditions are updated by workflow transitions. If the definition being configured is for a workflow transition and the **Subscribers** group is enabled for the definition, the notification recipients could receive an outdated rendition of the document depending on the transition that is executed. To avoid this situation, clear the **Rendition** option for events that generate renditions and enable it for a subsequent event definition instead. To use VBScript to calculate custom text (for example, property values) for notifications: • Type a VBScript expression or click the Meridian Enterprise Script Editor button to build a VBScript expression. For information on using VBScript for configuration expressions including their limitations, see the *Configuration Expressions* article in the *Meridian Enterprise VBScript API Reference*.

Create a Notification Definition

To create a notification definition:

1. In Configurator, expand **Environment** in the configuration tree and select **Notification Settings**.

   The **Notification Settings** page appears in the right pane.

2. Click **Edit**.

3. Click **New**.

   A new row is added to the definition list and its name is editable.
4. Type a descriptive name for the definition and press **Enter**.
5. Choose between two options:
   - To enable or disable notifications for combinations of events and recipient groups, select check boxes in the columns of the definitions list that correspond to the users that you want to receive notifications when the event occurs.
   - To view or edit the details about specific event notifications:
     a. Double-click the row of the event, or select the row and click **Edit**.

        The definition's **Properties** dialog box appears.

     b. For each tab in the dialog that represents a group of recipients, click options or type values using the descriptions in the following table.

     c. Click **OK**.
6. Click **OK**.
7. Specify the definition name in a VBScript procedure that executes when the event occurs.

   For more information about sending custom notifications using a notification definition, see the **Vault.SendNotification**, **Document.Subscribe**, and **Document.Unsubscribe** methods in the *Meridian Enterprise VBScript API Reference*.

Edit a Notification Definition

To edit a notification definition:

1. In Configurator, expand **Environment** in the configuration tree and select **Notification Settings**.

   The **Notification Settings** page appears in the right pane.
2. Click **Edit**.
3. Make your changes.
4. Click **OK**.

Delete a Notification Definition

To delete a notification definition:

1. In Configurator, expand **Environment** in the configuration tree and select **Notification Settings**.

The **Notification Settings** page appears in the right pane. The page lists the existing notification definitions for the current vault.

2. Select the definition row that you want to delete and click **Remove**.

   The row is deleted from the definition list.

3. Click **OK**.

Configure Reminders

Reminder messages are initiated by the Meridian application server and sent by a specified email server. These notifications can be sent to users to remind them of documents for which they might have received an event notification earlier but the documents remain in a certain workflow state. The reminders help to prevent documents from being overlooked and help to accelerate workflows. The users cannot configure which messages they receive and they may not decline to receive them. Additional messages can be sent by user-configured subscriptions or event notifications or by programming custom notifications.

You configure reminders by scheduling a task on the Meridian application server to send messages to the members of selected recipient groups. The groups are the same as are selected for event notifications as described in Configure Event Notifications. The messages will list the documents that are found as the result of an existing saved search.

> **Note:**
> Configuring reminder definitions does not configure how the messages are actually sent. That must be done by configuring the SMTP mail server options as described in *Specify a Mail Server - Administrator* in the *Meridian Enterprise Administrator's Guide* .

To perform this task, you must be a member of a group that has been granted the Allow Management of Subscriptions for others privilege at the root of the vault.

Create a Reminder Definition

To create a reminder definition:

1. In Configurator running on the Meridian application server, expand **Environment** in the configuration tree and select **Notification Settings**.

   The **Notification Settings** page appears in the right pane. The page lists the existing notification definitions for the current vault with this icon and reminder definitions with a different icon .

   > **Note:**
   > It's important that reminders be configured from the Meridian application server because that is where the scheduled task is created and run from.

2. Click **Edit**.
3. Click **New**.

   A new reminder definition appears in the list with the default name **New E-mail Notification** and the name is editable.

4. Type a descriptive name for the new reminder and press **Enter**.

   The name changes.

5. Click **Edit**.

   The reminder definition's **Properties** dialog box appears.

6. For each tab in the dialog that represents a group of recipients, click or type options using the descriptions in the table in Configure Event Notifications.

   By default, only members of the **Subscribers** group receive reminders, so they must explicitly subscribe to the documents in advance. The reminder messages can be in addition to any notifications that users receive from event notifications or subscriptions in general.

   It might not be beneficial to send reminders to users in the **To-Do Persons** or **Managers** groups if they are already recipients of other notifications for the same documents. Avoid sending so many notifications that users will ignore them.

7. In the **Send reminders** group, enable **Send Reminders** and then click options or type values using the descriptions in the following table.

   Reminders options

Option	Description
List the documents in this shared dynamic collection	Select an existing search that finds the documents that you want to list in the reminder messages. By default, reminder messages will list up to 50 documents. If this collection will normally contain more documents, increase the number accordingly in the **value** element of the **ChunkSize** setting in `BCReminder.exe.config` file on the Meridian application server. It is located in the `C:\Program Files\BC-Meridian\Program` folder by default.
Task name	The scheduled task name is set automatically and cannot be changed.
Start	Click **Set Schedule** and configure a new task using the Windows Task Scheduler options. For information about configuring scheduled tasks, see the Windows Help.

8. Click **OK**.

> **Note:**
> The task may also be edited in the **Task Scheduler** Control Panel applet. The syntax of the **BCReminder** executable is as follows. If the `-Q` parameter is omitted, the saved search with the same name as the notification definition specified by the `-N` parameter will be used, if found. If a Meridian user group is specified for the `-S` parameter, the members of the group will be sent reminders if the **Subscribers** group is enabled for the notification definition that is specified for the `-N` parameter. However, the members are not added as

subscribers for future notifications.

```
BCReminder.exe -V <VaultPath> -N <NotificationName> [-Q
<QueryName>] [-S <GroupName>]
```

9. Select and clear check boxes in the **To-Do Persons**, **Managers**, and **Subscribers** columns of the definitions list that correspond to the users that you want to receive reminders using the current settings in the definition.
10. Click **OK**.

Edit Reminder Definition

To edit a reminder definition:

1. In Configurator running on the Meridian application server, expand **Environment** in the configuration tree and select **Notification Settings**.

   The **Notification Settings** page appears in the right pane. The page lists the existing reminder definitions for the current vault.

   Note:
   It's important that reminders be configured from the Meridian application server because that is where the scheduled task is created and run from.
2. Click **Edit**.
3. Double-click the reminder row that you want to edit or select the row and click **Edit**.

   The definition's **Properties** dialog box appears.
4. For each tab in the dialog that represents a group of recipients, select or type options using the descriptions in the preceding table.
5. Click **OK**.
6. You may also select check boxes in the **To-Do Persons**, **Managers**, and **Subscribers** columns of the definitions list that correspond to the users that you want to receive reminders.
7. Click **OK**.

Delete Reminder Definition

To delete a reminder definition:

1. In Configurator running on the Meridian application server, expand **Environment** in the configuration tree and select **Notification Settings**.

The **Notification Settings** page appears in the right pane. The page lists the existing reminder definitions for the current vault.

> **Note:**
> It's important that reminders be configured from the Meridian application server because that is where the scheduled task is created and run from.

2. Select the reminder row that you want to delete and click **Remove**.

   The row is deleted from the definition list.

3. Click **OK**.
4. Delete the scheduled task that was created for the reminder definition in the **Task Scheduler** Control Panel applet.

Configure the Subscriptions Viewer

After the subscriptions viewer has been installed as described in the *Install the Subscriptions Viewer* article in the *Meridian Enterprise Administrator's Guide*, some of its features can be configured to meet your requirements:

- Visibility and order of the columns
- Visibility of the viewer header (logo and title), such as hiding it when showing the viewer as an external property page for document types as described in Configure External Pages.

Change Visibility and Order of Columns

To change the visibility and order of the columns:

1. Open the `web.config` configuration file of the subscriptions viewer in any text editor.

   By default, the file is located in `C:\inetpub\AMM\WebExtensibilityDBViewer`.
2. In the **appSettings** section of the file, modify the values of the settings described in the following table.

Column settings

Setting	Description
SubscriptionsTableColumns	Contains **add** elements for each column name. The **key** attribute is the name of the column. Set the **value** attribute to **true** to show the column. Set it to **false** to hide the column. Arrange the order of the **add** elements to change the order of the columns in the viewer.

Hide the Viewer Header

To hide the viewer header:

In the URL to show the viewer, set the **HideHeader** parameter to a non-zero number. For example, the following URL will show the subscriptions viewer without the header:

```
http://localhost/SubscriptionsView.aspx?MachineName=MyServer&VaultName=MyVault&HideHeader=1
```

Group Email Notifications

Combine multiple PowerWeb notifications into a single email, keeping users informed without overwhelming their inbox. Meridian groups the notifications based on the **Transmission Interval** you specify in the SMTP parameters, helping users stay on top of updates in one centralized message.

To activate this functionality, go to the SMTP parameters and set the **Group Emails** option to **True**.

The **Group Emails** option requires email server configurations in your environment. Configure the following settings if you haven't already:

- In Meridian Administrator:
  - Add email addresses for Meridian users.
  - Configure the mail server.
  - In the SMTP parameters:
    - Configure the **Transmission Interval** parameter.
    - Activate the **Group Emails** parameter.
- In Meridian Enterprise Server, configure the mail server.
- In Meridian Configurator:
  - Configure the **Notifications table connection** string.
  - Define the **Notification Settings**.

PowerWeb

Almost all of the vault configuration options described in this guide apply equally to PowerWeb, the web browser-based client. The few that do not apply include:

- Page styles
- User interface extensions

PowerWeb users can configure numerous options that control the way PowerWeb works, as described in the *Personal Preferences* article in the *Meridian Enterprise User's Guide*.

The major features of PowerWeb that can be centrally configured are described in the following topics. More options are also available by modifying the registry values on the Meridian web server for the following key.

```
HKEY_LOCAL_MACHINE\Software\Cyco\AutoManager
Meridian\CurrentVersion\WebLink
```

You can also customize the left side of the **Welcome** page by modifying the registry values on the Meridian web server for the following key:

```
HKEY_LOCAL_MACHINE\Software\Cyco\AutoManager
Meridian\CurrentVersion\WebLink\WelcomeScreen
```

For information about the available settings, see the *Meridian Enterprise Administrator's Guide* .

Deploy Standard Preferences

If necessary, you can deploy a standard set of preferences for all existing PowerWeb users. This might be useful for important options that the users can configure themselves, such as:

- **View renditions**: To discourage viewing source documents that might not yet be released.
- **Current time zone**: To ensure correct time values.

The default values for the preference options can be set in the following Meridian web server registry key that is described in the *Meridian Enterprise Administrator's Guide*:

HKEY_LOCAL_MACHINE\SOFTWARE\Cyco\AutoManager Meridian\CurrentVersion\WebLink\UserPreferences\Default

To override standard preferences in an individual PowerWeb user profile, see Edit PowerWeb User Profiles.

To deploy standard preference options:

1. Identify a user's profile file that you want to use as a template for the other users, for example, your own profile file.

   Which user you choose is not important except that the preferences for that user will become the preferences of all other users to which you copy the template.
2. Log in to PowerWeb with that account, configure your preferences as described in the *Personal Preferences* article in the *Meridian Enterprise User's Guide*, and log out.
3. Open the template profile file in any text editor.
4. Copy the settings to the Clipboard that you want to deploy to the other users.
5. Modify each of the other profile (`.prf`) files:
   a. Open the profile file in any text editor.
   b. Paste the Clipboard settings over the existing settings.
   c. Ensure that none of the settings are duplicated within the same profile file.
   d. Save and close the file.

The changes will take effect in the users' next PowerWeb session. The users can still override the settings, but the standard settings will get them started. This technique only works for existing PowerWeb users who have an existing profile file; it will not affect new users. Their preference settings are determined by the web server registry key previously described.

Profile settings

Option	Description
AutoStyles	If set to **0**, disables the default stylesheets for custom property pages.
Datalist	If set to **1**, enables an alternative drop-down control for lookup lists that provides type-ahead value matching. The default is **0**, disabled.
UseHTMLImport	When set to **1** (default), enables drag-and-drop document import and an HTML-based **Select Folder** dialog box by the **Import Documents** command to import documents in other than the **Folders** navigation view. When set to **0**, disables drag-and-drop document import and documents are always imported into the root folder of the vault. To set this option for all PowerWeb users, set the **UseHTMLImport** value in the Meridian web server registry key as described in the *Meridian Enterprise Administrator's Guide* in HKEY_LOCAL_MACHINE\Software\Cyco\AutoManager Meridian\CurrentVersion\WebLink\UserPreferences\Default.

Edit PowerWeb User Profiles

You can edit the settings in an individual PowerWeb user's profile. This action overrides the standard preferences previously applied for that user.

> **Note:**
> - Only do this if a user needs a non-standard setting. Otherwise, use the standard deployment process.
> - Do this in the Web Server, not in the client machine.
> - You can follow these procedures if you do not have access to the server registry but you do have access to the file system.

To edit preferences of an individual PowerWeb user profile:

1. Navigate to the following folder in the Web Server:

   `C:\inetpub\AMM\Profiles.`

   The name of each profile file looks like the following example:

   `S-1-5-21-1753209238-1745623247-3704251221-1004.prf.`
2. To find the appropriate user profile file:
   a. In Windows Explorer, click the **View** tab and select **Details**.
   b. Click **Add Column**.
   c. Click **Choose columns** and select **Owner**.

      The users' names appear in this column.

      If the owner is a member of the local or domain administrators group, the group name will appear instead of their user account name.
3. Open the user's profile file in a text editing program like Notepad.
4. Edit the settings you want to change.
5. Save the file.

Configure Searches

By default, the Quick Search box in the toolbar does not search in document content. Besides the **Name** and **Quick Search** options, the default **Find** form of PowerWeb includes only three properties that cannot be changed by users. These may not meet your organization's search needs.

Configure Quick Search

To configure Quick Search:

1. Open the Windows registry of the Meridian web server in Registry Editor and locate the following key:

   ```
   HKEY_LOCAL_MACHINE\SOFTWARE\Cyco\AutoManager Meridian\Current Version\WebLink
   ```

2. Set the value data of the **QuickFindScope** value to one of the following:
   - **0**: Search all text properties (default)
   - **1**: Search all text properties and full-text index
   - **2**: Search the **Name** property only
3. Restart the World Wide Web Publishing (IIS) service to activate your changes.

Configure Find Form

To configure the Find form:

1. Open the Windows registry of the Meridian web server in Registry Editor and locate the following key:

   ```
   HKEY_LOCAL_MACHINE\SOFTWARE\Cyco\AutoManager Meridian\Current Version\WebLink\UserPreferences\Default\Find Templates
   ```

   The values named **1**, **2**, and **3** correspond to the first three properties shown on the **Find** page, respectively.
2. To search a different property, change the value of one to the name of the desired property set and property name.
3. To add more properties, create new string values (named **4** and higher), and type the property set name and property name as the data.

4. When you are finished defining the property names, update the value of **PropertyCount** with the total number of properties, for example **4**.

   If you define more than 8 properties, be sure to specify **PropertyCount** with the correct **Base** option of **Decimal**.

5. For each property, specify the default search operator by creating a corresponding DWORD value named **<*n*>.Operator** where <*n*> represents the property number.

   Specify the value data as the numeric value of one of the **IC_OP_OPERATOR** constants listed in the following table. Again, be sure to select the correct **Base** option of **Decimal**. If no operator is specified, the default operator **Contains** is used. For example, to set the **Equals** operator for the first search property, create a DWORD value named **1.Operator** and set it to **1**.

6. Restart the World Wide Web Publishing (IIS) service to display your changes.

Search operator constants

Constant	Value	Notes
IC_OP_EQUALS	1	
IC_OP_LESS	2	
IC_OP_MORE	3	
IC_OP_LESS_EQUAL	4	
IC_OP_MORE_EQUAL	5	
IC_OP_NOT_EQUAL	6	
IC_OP_LIKE	7	
IC_OP_NOT_LIKE	8	
IC_OP_EMPTY	9	Supported by Date/Time type properties.
IC_OP_NOT_EMPTY	10	Supported by Date/Time type properties.
IC_OP_CONTAINS	11	
IC_OP_NOT_CONTAINS	12	
IC_OP_STARTWITH	13	
IC_OP_NOT_STARTWITH	14	
IC_OP_DOSWILDCARD	15	

Constant	Value	Notes
IC_OP_DATE_EQUALS	18	Only supported by Date/Time type properties.
IC_OP_DATE_NOT_EQUAL	19	Only supported by Date/Time type properties.
IC_OP_DATE_LESS	20	Only supported by Date/Time type properties.
IC_OP_DATE_MORE	21	Only supported by Date/Time type properties.
IC_OP_DATE_LESS_EQUAL	22	Only supported by Date/Time type properties.
IC_OP_DATE_MORE_EQUAL	23	Only supported by Date/Time type properties.

Create a Custom Color Scheme

Users may choose a custom color scheme for PowerWeb user interface. They do this by configuring their personal preferences and selecting a scheme as described in the *Personal Preferences* article in the *Meridian Enterprise User's Guide*. The default color schemes are based on the colors shown in the PowerUser and the Windows default colors. You may create a custom color scheme for users to select, such as with your organization's colors. Custom color schemes are defined in cascading style sheet (CSS) files on the PowerWeb server.

To create a custom color scheme:

1. On the PowerWeb web server, navigate to the folder where the color scheme files reside, `C:\inetpub\AMM\Src` by default.
2. Select the color scheme file that most closely matches the colors that you want to use in your custom color scheme:
   - `Power User 1.css`
   - `Power User 2.css`
   - `Windows.css`

   Do not select any other `.css` file.
3. Copy the file to a new name that you want to appear in the scheme list in PowerWeb, for example, `Acme.css`.
4. Open the new file in any text editor.
5. Locate the class definition for the object that you want to modify.

   This might require some trial and error or consulting with an expert in your organization who has CSS knowledge. For example, to change the color of the page header, locate the **table.viewbar** class.
6. Modify the class definition as necessary and save the file.

   For example, change the **color**, **background-color**, or **font-size** attributes.
7. Restart the World Wide Web Publishing service.
8. Open a PowerWeb session, select your new custom color scheme, and observe the results.

Localize the User Interface

Meridian PowerWeb supports localized user interface text through user-configurable XML Localization Interchange File Format (XLIFF) files. Because localization can apply to each customer's unique vault configuration, the customer is responsible for producing the XLIFF files. The files can contain localized text for these custom vault items:

- Property names
- Property page names
- Command names
- Navigation view names

To configure localized user interface text:

1. Create one plain text file for each vault and language combination using this naming convention:

   <VaultDisplayName>-*<LanguageCode>*.xlf

   For example, the filename for a vault named MyVault and the French language would be MyVault-Fre.xlf.

   The format of the file must conform to the example below and these guidelines:

   - The `source` elements must contain the configuration item names in the language specified in the `source-language` attribute of the `file` element.
   - Each `target` element must contain the translation of the text specified in the `source` element within the same `trans-unit` element.
   - Do not change the `id` values of the `group` elements.
   - Change only the part(s) in the `trans-unit` elements (if any) that correspond to the item internal name.
   - Create additional `trans-unit` sections for each configuration item within the corresponding `group` (item type) element.
   - The file must provide translation strings for every supported configuration item. Missing translation strings will display nothing in the user interface.

2. On the Meridian Enterprise web server, add a new String registry value named **Translations** to the following key:

   `HKEY_LOCAL_MACHINE\Software\Cyco\AutoManager Meridian\CurrentVersion\WebLink\Published Locations`

3. Set the value to the path where you want to store the localized text (XLIFF) files.
4. Place all of the localized text files in that location.

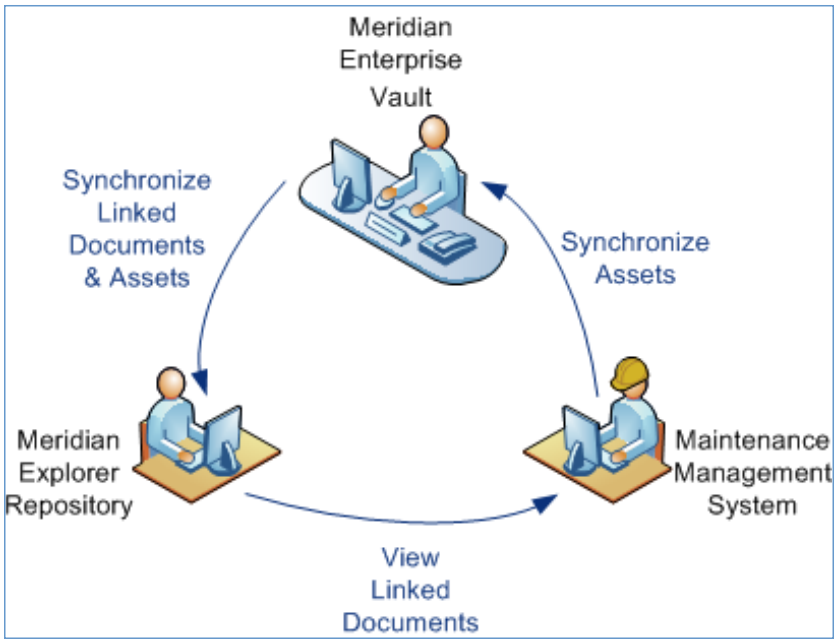
Below is a simple, commented example XLIFF file.

```
<xliff version="1.2" xmlns="urn:oasis:names:tc:xliff:document:1.2">
  <file source-language="en" target-language="ru">
    <header />
    <body>
      <!-- Custom command names -->
      <group id="AECommands">
        <!-- Command with internal name Command1 -->
        <trans-unit id="Command1.Cmd">
          <!-- Display name -->
          <source>Command 1</source>
          <target state="translated">Команда 1</target>
        </trans-unit>
       <trans-unit id="Sub-menu">
          <source>Main</source>
          <target state="translated">Главный</target>
        </trans-unit>
      </group>
      <!-- Navigation view names -->
      <group id="NavigationViews">
        <trans-unit id="NavigationViews">
          <source>"AllToDoLists"</source>
          <target state="translated">Все Трудящиеся</target>
        </trans-unit>
      </group>
      <!-- Custom property page with internal name PageA -->
      <group id="PageA.AEPage">
        <trans-unit id="DisplayName">
          <source>Page A</source>
          <target state="translated">Страница A</target>
        </trans-unit>
        <!-- Panel with name Panel1 -->
        <trans-unit id="Panel1.Caption">
          <source>My Panel</source>
          <target state="translated">Моя панель</target>
        </trans-unit>
        <!-- Date field on panel Panel1 with label DateA -->
        <trans-unit id="Panel1.DateA.Label">
          <source>DateA</source>
          <target state="translated">Дата A</target>
        </trans-unit>
        <!-- String field on panel Panel1 with label StringA -->
        <trans-unit id="Panel1.StringA.Label">
          <source>StringA</source>
          <target state="translated">Строка A</target>
```

```
        </trans-unit>
        <!-- Panel named Panel1 with static text -->
        <trans-unit id="Panel1.stat.Text">
          <source>Static text only</source>
          <target state="translated">Просто текст по-русски!</target>
        </trans-unit>
        <!-- Panel named Panel1 with button Command1-->
        <trans-unit id="Panel1.Command1.Button">
          <source>Command1</source>
          <target state="translated">Команда 1</target>
        </trans-unit>
      </group>
      <!-- Property names -->
      <group id="Properties">
        <!-- Custom property named MyProperty in set named
MyPropertySet -->
        <trans-unit id="MyPropertySet.MyProperty">
          <source>"My Property"</source>
          <target state="translated">Мои Свойства</target>
        </trans-unit>
      </group>
    </body>
  </file>
</xliff>
```

Asset Management

Meridian Enterprise provides a link between asset information stored in a maintenance management system and document information stored in a Meridian Explorer repository as illustrated in the following figure.



The Meridian Explorer repository is synchronized from a Meridian Enterprise vault where the documents are managed throughout their life cycle. Users of either system can view and link to information in the other system, but the assets (called tags in Meridian Enterprise) remain under the ownership of the maintenance management system and the documents remain under the ownership of Meridian Enterprise. Maintenance management system users cannot create new documents in a vault without the approval of Meridian Enterprise users (engineering). Meridian Enterprise users cannot create new assets in the maintenance management system without the approval of maintenance management system users. The recommended overall process of linking documents to assets is as follows:

1. Maintenance management system users create and maintain assets
2. Meridian synchronizes the vault with new or updated asset tags
3. Meridian Enterprise users link documents to asset tags
4. The Meridian Explorer repository is synchronized from the Meridian Enterprise vault.
5. Maintenance management system users can then view documents in the repository that are related to the assets that they maintain. The users can optionally initiate electronic change requests for the related documents that are stored in the Meridian Enterprise vault.

Meridian can integrate with most maintenance management systems, including but not limited to:

- IBM Maximo
- SAP Plant Maintenance
- Ultimo
- FAMIS

An alternative configuration is also possible in which Meridian is not linked to any maintenance management system. In this configuration, the assets reside only in Meridian Enterprise. This configuration can be useful for organizations that do not have a maintenance management system but still want to manage their assets and build relationships between them to documents.

CMMS Integration

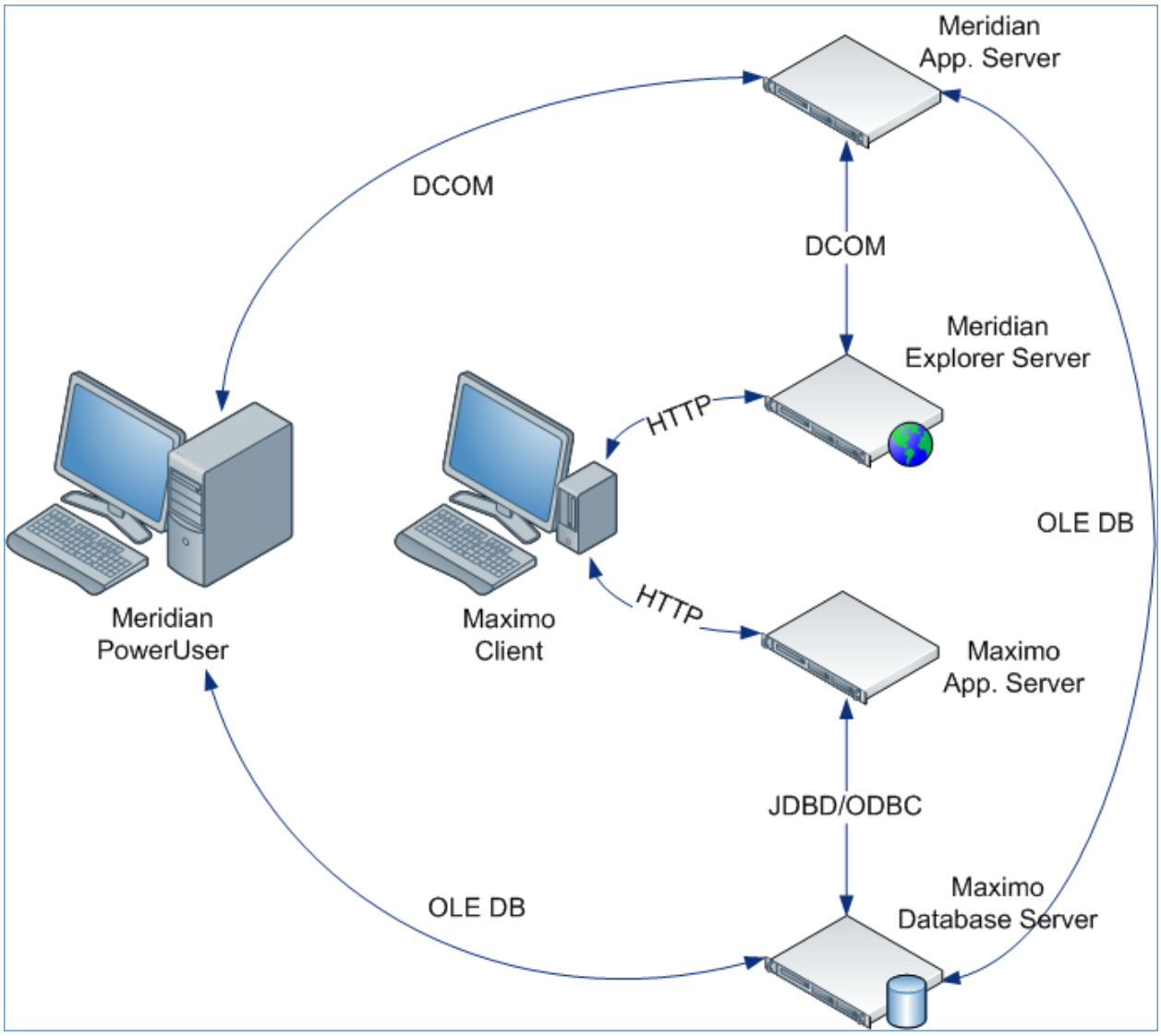
Meridian integrates with computerized maintenance management systems (CMMS) such as IBM Maximo, SAP Plant Maintenance, Ultimo, and FAMIS, creating a bidirectional link between the two systems. After the engineering documents and technical documentation that are managed in Meridian Enterprise are replicated to the Meridian Explorer repository, they can be viewed in the maintenance management system through a special configuration of the Meridian Explorer client.

> **Note:**
> Meridian provides out-of-the-box connectivity with IBM Maximo. For other maintenance management systems, such as SAP Plant Maintenance and Ultimo, professional implementation services may be needed to meet your requirements.

The following topics describe the integration of the Meridian with various maintenance management systems and Meridian Explorer.

Maximo Integration

Meridian provides out-of-the-box integration with IBM Maximo 7.5. The link is created through a JavaScript control that lists the Meridian Enterprise documents that are linked to the currently selected Maximo asset. This control is inserted in the Maximo **Attached Documents** page. The integration is illustrated in the following figure.

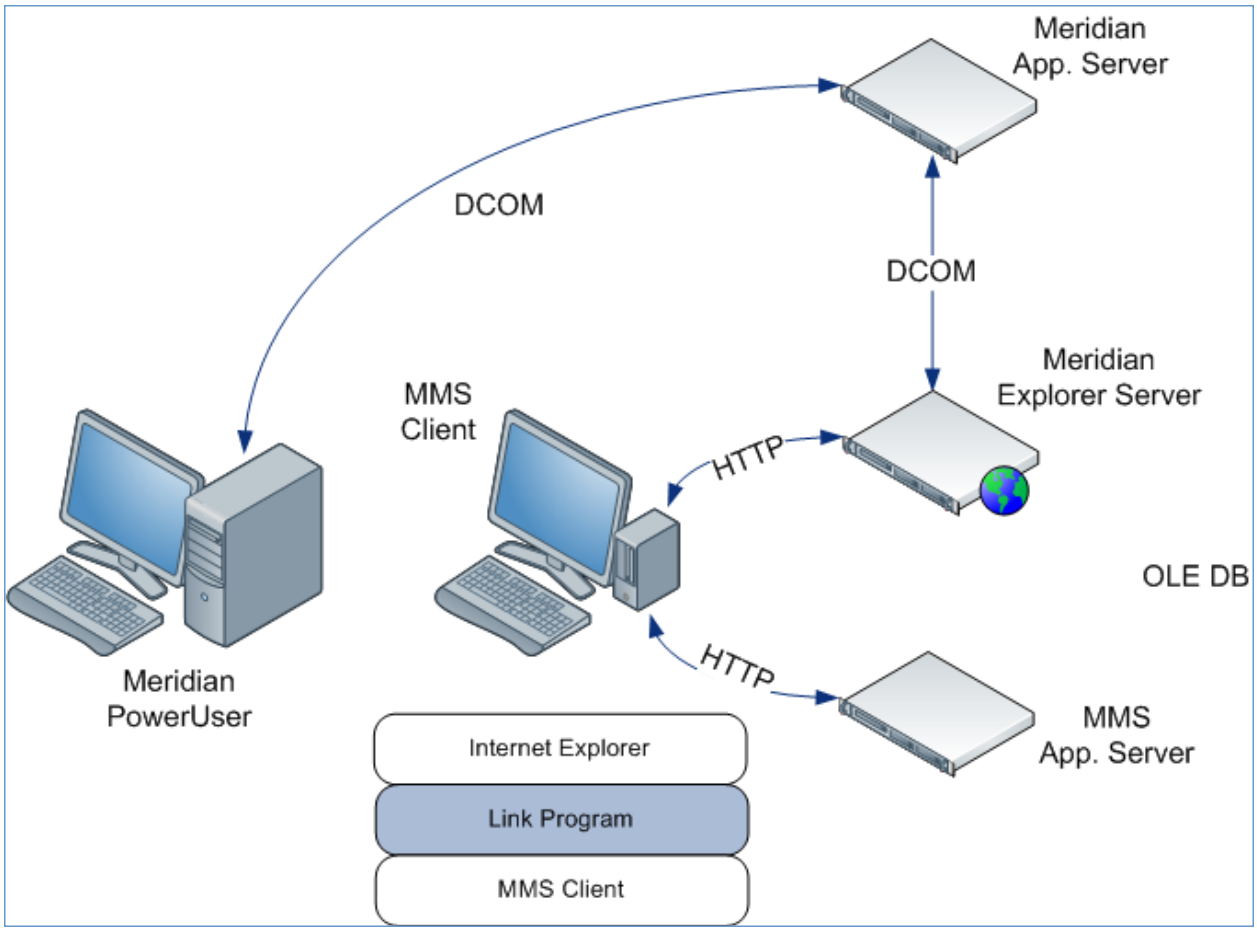


Selected data from the Maximo database can be shown in the Meridian Enterprise PowerUser client.

PowerUser users can link documents to tags that represent the assets stored in Maximo. For more about tags and document linking, see the *Tags* section of the *Meridian Enterprise User's Guide*.

Generic Integration

The integration of Meridian with maintenance management systems other than IBM Maximo is designed in a generic way that can be implemented with almost any maintenance management system. The integration is illustrated in the following figure.



For the maintenance management system users, a custom button is typically added to the user interface of the maintenance management system. This button executes a link program and passes parameters to it that identify the asset that the user requested. The program converts the parameters to a URL and opens Internet Explorer with the URL, which requests from Meridian Explorer a list of the documents that are linked to the requested asset. The user is shown web pages that are generated by an extension of the Meridian Explorer client application.

For Meridian Enterprise users, Meridian Enterprise allow users to manage references between tags (assets) and documents stored in a Meridian Enterprise vault. For more about tags, see the *Tags* section of the *Meridian Enterprise User's Guide*.

Integrate With Other CMMS Systems

The open architecture of the Meridian can integrate into almost any maintenance management system. The maintenance management system can be either web-based (and be integrated similar to Maximo) or Windows-based. In either case, the integration is done at the level of the user interface. Meridian presents its user interface as a web page. To integrate with any maintenance management system, this web page should be available in the user interface of the maintenance management system, for example, from a hyperlink, a button, or by showing the page as part of the user interface of the maintenance management system itself. When showing Meridian Explorer, the maintenance management system should provide arguments that allow Meridian to determine what tag the user has currently selected.

For Meridian to show the correct related documents, relationships must be defined between the tag identifiers in the maintenance management system (for example, tags, location numbers, and so on) and documents in Meridian Explorer. These relationships can be configured in Meridian between any arguments supplied by the maintenance management system and properties in Meridian Explorer repository. The arguments will usually be unique identifiers, but may also be other properties of the tag, or they may be identifiers or properties of related tags.

With good knowledge of the maintenance management system, integration with the Meridian can usually be achieved in several days.

CMMS Requirements

To successfully integrate with Meridian, the maintenance management system must meet the following requirements:

- Able to present the module's web page to the user. This can be achieved by any of the following:
  - Showing the page in a frame
  - Providing a hyperlink to the page
  - Showing the page in a browser control on a form
  - Opening a browser window (possibly through an external executable) to show the page
- Able to provide arguments derived from the user's session. The arguments will be used in the URL that is opened in Meridian Explorer. The best way to achieve this depends on the maintenance management system.

Integrate With a Web-Based System

To integrate with a web-based maintenance management system, you first need to determine how to display the Meridian Explorer web page from system's user interface. Several options are available:

- **IFrame**: This technique is convenient when the pages of the maintenance management system are generated by scripts (such as JavaScript or ASP) and the scripts may be customized. Add an IFrame (inline frame) to the maintenance management system's web page and set the URL of this frame to the Meridian Explorer home page. This technique provides seamless integration because the user sees the module's web page as part of the maintenance management system.
- **Hyperlink**: This technique is convenient when you can add configurable hyperlinks to the maintenance management system's pages. Add a hyperlink to a page of the maintenance management system that points to the Meridian Explorer home page. When desired, the page can be shown as a pop-up. In that case, it may be desirable to reuse the pop-up window to avoid opening a new pop-up each time the user clicks the hyperlink. This technique provides an integration that is less seamless than an IFrame, but is still usable.
- **Button**: This technique can be useful when security requirements do not allow users direct access to Meridian. Add a button to a page of the maintenance management system that directs the user to the Meridian Explorer home page. With this technique, the button can be set up to post a form back to the maintenance management system web server, which then redirects the user to Meridian Explorer. This technique is more complicated than using a hyperlink, but it allows the maintenance management system to do server-side processing before the user is shown the documents. The post back can be used to retrieve the web page from Meridian Explorer and pass the result on to the user.

Depending on the technique that you choose to show the Meridian Explorer home page, you should know where in the maintenance management system's user interface the URL needs to be generated. Arguments must be retrieved from the user's maintenance management system session and combined with the Meridian Explorer base URL to form a complete URL with the following components:

`<BaseURL>?<Argument1>=<Value1>&<Argument2>=<Value2>...`

Where:

<*BaseURL*> is the URL to the `home.aspx` page of Meridian Explorer.

Each <*Argument*> is the name of an argument to be passed to Meridian Explorer. Arguments can have any name; the only requirement is that they match the argument names in the filters configured in Create And Edit Item Filters.

It is convenient to keep the argument names short, yet descriptive, for example `eqnum` for equipment number.

Each <*Value*> is the value for its associated argument. This data must be retrieved from the user's session in the maintenance management system.

For example:

```
http://<ServerName>/ExplorerClient/Home.aspx?VIEWID=DOC_
E91E5&DOCFILTER=docfab&eqnum=11430&locnr=L11
```

How you retrieve the argument values depends entirely on the capabilities of the maintenance management system. The following topics describe some, but not all possibilities.

Retrieve Arguments From an API

The maintenance management system may provide an API to retrieve data from the user's session. The following example JavaScript expression retrieves the equipment number for the currently selected equipment.

```
<%=linkdoctree.getParent().getString("eqnum")%>
```

The returned value can then be integrated into the URL by writing code similar to the following example in the JavaScript page.

```
src=http://<ServerName
>/ExplorerClient/Home.aspx?eqnum=<%=linkdoctree.getParent().getString
("eqnum")%>
```

If the maintenance management system provides a similar API, this is the recommended way to obtain data from the user's session.

Retrieve Arguments From a URL

When the maintenance management system does not provide a convenient API, but a unique identifier is available in the URL of the maintenance management system page, then the identifier can be retrieved from the URL. For example, assume the following URL for the current web page in the maintenance management system:

```
http://srv/gisapp/showmap.jsp?latitude=123&longitude=445
```

The URL arguments can be extracted and the Meridian Explorer home page can be opened by the following JavaScript:

```
<script language=javascript>
function showDocs()
{
 sURL = window.location.href;
 s = sURL.split ('?')
 window.open('http://<ServerName>/ExplorerClient/Home.aspx?' + s
[1]);
}
</script>
```

A link to the Meridian Explorer home page can be provided by an anchor on the maintenance management system's web page similar to the following.

```
<a onclick ="showDocs ();">Show linked documents</a>
```

With this technique, it is most convenient to pass all of the arguments from the maintenance management system URL to the URL of the Meridian Explorer home page and then define filters only for the arguments that are necessary for the tag to document relationship.

One advantage of this technique is that the JavaScript runs on the client in the browser, so it cannot interfere with the server-side operation of the maintenance management system application.

Retrieve Arguments From a Form

When the maintenance management system URL does not provide useful arguments, the place to retrieve them from is the maintenance management system page itself. The maintenance management system will probably display tag identifiers and properties in a form or table. Using the DOMDocument API available in the browser, the values of form fields can be extracted and then used to construct a URL to the Meridian Explorer home page.

For example, if the maintenance management system page has a form field with the name EqNum that displays the number of the selected equipment, then the Meridian Explorer home page can be opened with the documents for the selected equipment using the following JavaScript function:

```
<script language=javascript>
function showDocs()
{    sEqNum = document.all ['EqNum'].value;
]    window.open
(?eqnum=' + sEqNum);
}
</script>
<a onclick ="showDocs ();">Show docs</a>
```

One advantage of this technique is that the JavaScript runs on the client in the browser, so it cannot interfere with the server-side operation of the maintenance management system application.

Retrieve Arguments From a Session Object

Depending on the implementation of the maintenance management system, data may be available in values or objects in the user's **Session** object. For example, if the application is running on Internet Information Services and it stores a reference to the user's selected object in the **Session** object and this object has an **ID** property, then the URL can be constructed using code similar to the following ASP code:

```
<iframe name="Meridian Asset Managenent Module"
src=" http://<ServerName>/ExplorerClient/Home.aspx?
ID=<%Session("CurrentObject").ID%>">
</iframe>
```

> **Note:**
> This code must run on the web server because the **Session** object is not available in the browser on the client.

Integrate With a Windows Application

Integrating the Meridian with a Windows-based maintenance management system depends on how you can display the Meridian Explorer web page in the maintenance management system user interface. Some, but not all of the possibilities include:

- **Button**: Many Windows applications are forms-based and provide a way to add buttons to the predefined forms. Often, it is possible to configure a custom button to start an external application with a specific command line.

  For example, Internet Explorer can be started with a specific web page by executing:

  `"C:\Program Files\Internet Explorer\IEXPLORE.EXE" http://<`*`ServerName`*`>/ExplorerClient/Home.aspx?VIEWID=DOC_E91E5&DOCFILTER=docfab&eqnum=123`

  Alternatively, a custom-programmed intermediate program can be started that will start Internet Explorer with the same URL. The program may be installed on the computers or it may be accessible from a shared network folder. It is important that the intermediate program reuse existing browser windows opened by Meridian.
- **Browser control**: It may be possible to customize a form of the maintenance management system to include a web browser control. A method of the control can be used to show a specific web page.
- **Hyperlink**: Some Windows applications allow a hyperlink to be added to their forms. If this is possible, a hyperlink may be used instead of a button. It must be possible to calculate the URL of the hyperlink to include an argument that identifies the currently selected tag. For example:

  `http://<`*`ServerName`*`>/ExplorerClient/Home.aspx?VIEWID=DOC_E91E5&DOCFILTER=docfab&eqnum=123`

The complete Meridian Explorer URL consists of two portions, a base portion and a parameters portion.

The URL parameters portion is implemented in `Control.jsp`. For the Location, Asset, and Work Order applications, the default URL parameters are usually sufficient.

Other options to retrieve argument values from a Windows application are dependent on its implementation and are beyond the scope of this guide.

Create a Launch Button In SAP

After you have imported data into Meridian Enterprise that was exported from SAP using the SAP Connector, you can add a button in SAP to make it easier for users to launch Meridian Explorer and see the documents that are related to specific equipment or a functional location. The following is an example of such a customization.

Here is an overview of the steps to perform the customization:

1. In SAP, declare an ABAP program with subroutines.

   You may use the example source code in Example Source Code and modify it, if necessary.
2. Link the ABAP subroutines to the function codes of the corresponding SAP programs (Functional Location, Equipment, Work Order, and Notification).
3. Create and configure script files on each SAP client that add a button in the SAP user interface for each SAP program.

The following topics describe each step in detail.

Create the ABAP Program

Creating the ABAP program (report) provides the functionality to retrieve information about the current item in SAP, calculate a corresponding URL for Meridian Explorer, and open it with the URL.

To create the ABAP program:

1. In SAP, use transaction code **ZE80** to open the object navigator.
2. Create a new package named **ZPM01** with the program name **ZPM_CALLEX** and a folder structure similar to the following to organize the elements of the customization.
3. Use transaction code **SE38** to import the source code of the subroutines listed in Example Source Code into the program **ZPM_CALLEX**.

```
ZPM01
  Programs
    ZPM_CALLEX
      Fields
        GC_URL
      Routines
        GET_CONTEXT_CAUFVD
        GET_CONTEXT_IFLO
        GET_CONTEXT_ITOB
        GET_CONTEXT_VIQMEL
        ZCALLEX_EQ
        ZCALLEX_FL
        ZCALLEX_NO
        ZCALLEX_OR
```

Link the Subroutines To The Programs

Linking the ABAP subroutines to the SAP programs adds custom functionality to the programs. You do this with a custom function code **ZZ01**.

To link the subroutines to the programs:

1. Use transaction code **VFBS** to open the Functional Location program (**SAPMILO0**).
2. Edit the function code (subobject **T185F**) and set **FCode** to **ZZ01**.
3. Edit the paths between processing locations (subobject **T185**) and set the options listed in the following table.
4. Repeat steps 2-3 for the Equipment (**SAPMIEQ0**), Work Order (**SALCOIH**), and Notification (**SAPLIQS0**) programs.

Processing location options

Program	Option	Setting
Functional Location (SAPMILO0)	Function Code	ZZ01
Functional Location (SAPMILO0)	Screen change module	ZCALLEX_FL
Functional Location (SAPMILO0)	Program	ZPM_CALLEX
Equipment (SAPMIEQ0)	Function Code	ZZ01
Equipment (SAPMIEQ0)	Screen change module	ZCALLEX_EQ
Equipment (SAPMIEQ0)	Program	ZPM_CALLEX
Work Order (SALCOIH)	Function Code	ZZ01
Work Order (SALCOIH)	Screen change module	ZCALLEX_OR
Work Order (SALCOIH)	Program	ZPM_CALLEX
Notification (SAPLIQS0)	Function Code	ZZ01
Notification (SAPLIQS0)	Screen change module	ZCALLEX_NO
Notification (SAPLIQS0)	Program	ZPM_CALLEX

Create And Configure the Client Scripts

To run the ABAP program subroutines requires a button in the user interface that is created by scripts on the client PCs. You can deploy these settings either manually or with administrative tools. The following task describes how to configure the settings manually.

To create and configure the client scripts:

1. Create a plain text file for each SAP program with the names listed in the following table. Enter the following text in each file.

   ```
   Pushbutton (toolbar) "@OX@Show Documentation" ZZ01
   ```

2. On each client PC, place a copy of each file in the folder that is configured in the Synactive GuiXT file `GUIxt.ext`.
3. In SAP, open Synactive GuiXT.
4. In Synactive GuiXT, edit the user's profile and enter the path to the scripts from step 2.

Script file names

Program	File Name
Functional Location	`sapmilo0.2100.txt`
Equipment	`sapmieq0.0101.txt`
Work Order	`saplcoih.3000.txt`
Notification	`sapliqs0.7200.txt`

Example Source Code

The following unsupported source code is not intended to be a production-ready implementation and is provided only as an example of how to customize SAP to meet your specific needs.

> **Note:**
> The server name and the parameter values of the constant `gc_url` must be modified to match the your deployment as described in Compose View URLs.

```
*&---------------------------------------------------------------------
--*
*& Report  ZPM_CALLEX
*&
*&---------------------------------------------------------------------
--*

REPORT zpm_callex.

CONSTANTS: gc_url TYPE string
                  VALUE
'http://servername/BCEnterprise/home.aspx?VIEWID=DOC_
3A9E0&TAGFILTER=9d14c5&NAVSTATE=HIDE&'.

FORM zcallex_fl.
  DATA: lv_url TYPE bxmnodes-url,
        ls_iflo TYPE iflo.

  PERFORM get_context_iflo CHANGING ls_iflo.
  IF ls_iflo-tplnr IS INITIAL.
    MESSAGE s398(00) WITH 'Functional location can not be
determined'.
  ELSE.
    WRITE ls_iflo-tplnr TO ls_iflo-tplnr USING EDIT MASK '==TPLNR'.
    CONCATENATE gc_url 'FL=' ls_iflo-tplnr INTO lv_url.

    CALL FUNCTION 'PRGN_GENER_EXECUTE_URL'
      EXPORTING
        node_data = lv_url.
  ENDIF.

ENDFORM.                    "

*&---------------------------------------------------------------------
--*
*&      Form  GET_CONTEXT_IFLO
*&---------------------------------------------------------------------
--*
```

```
FORM get_context_iflo CHANGING cs_iflo  TYPE iflo.
  DATA: lv_name TYPE string.

  FIELD-SYMBOLS <ls_iflo> TYPE iflo.

* Context data sent by COIH
  lv_name = '(SAPMILO0)IFLO'.
  ASSIGN (lv_name) TO <ls_iflo>.
  IF sy-subrc <> 0.
    RETURN.
  ENDIF.

  cs_iflo = <ls_iflo>.

ENDFORM.

FORM zcallex_eq.
  DATA: lv_url TYPE bxmnodes-url,
        ls_itob TYPE itob.

  PERFORM get_context_itob CHANGING ls_itob.
  IF ls_itob-equnr IS INITIAL.
    MESSAGE s398(00) WITH 'Equipment can not be determined'.
  ELSE.
*   write ls_iflo-tplnr to ls_iflo-tplnr using edit mask '==TPLNR'.

    CONCATENATE gc_url 'EQ=' ls_itob-equnr INTO lv_url.

    CALL FUNCTION 'PRGN_GENER_EXECUTE_URL'
      EXPORTING
        node_data = lv_url.
  ENDIF.

ENDFORM.                    "

*&---------------------------------------------------------------------
--*
*&      Form  GET_CONTEXT_ITOB
*&---------------------------------------------------------------------
--*
FORM get_context_itob CHANGING cs_itob  TYPE itob.
  DATA: lv_name TYPE string.

  FIELD-SYMBOLS <ls_itob> TYPE itob.

* Context data sent by COIH
  lv_name = '(SAPMIEQ0)ITOB'.
  ASSIGN (lv_name) TO <ls_itob>.
  IF sy-subrc <> 0.
```

```
    RETURN.
  ENDIF.

  cs_itob = <ls_itob>.

ENDFORM.
```

Integrate With Maximo 7

Meridian integrates with Maximo 7 using Maximo's Launch in Context feature. A Launch in Context entry passes information about the selected asset to a new Internet Explorer session that connects to Meridian Explorer, which retrieves the related vault documents. You define a menu item or button in Maximo to invoke the Launch in Context entry.

Integrating Meridian with Maximo 7 includes the tasks that are listed in the following table. They are listed in the order in which they should be performed and are described in the remainder of this guide. Use the hyperlinks in the following checklist to find the installation information for each task. Track your installation progress by printing this checklist and placing a checkmark in the box in the **Completed** column as you finish each task.

Maximo 7 integration checklist

Completed	Task	Topic Reference
	Create a Launch in Context entry for each Maximo application that you want to link to Meridian Explorer.	Create a Launch In Context Entry
	Create a signature option and associate it with each Launch in Context entry	Create a Signature Option
	Add a pushbutton and/or a menu option to each Maximo application for each signature option	Add a Pushbutton Add a Menu Option
	Grant user group access to each menu option	Grant Access To a Security Group
	Test the integration with each Maximo application	Test the Integration

For technical information about the Launch in Context feature, see the *IBM Maximo Asset Management 7.1 Integration Guide*.

Create a Launch In Context Entry

Creating a Launch in Context entry specifies the Meridian Explorer URL to open in the browser, how it should be opened, and a name to show in Maximo.

1. In Maximo, click **Go To**, point to **System Configuration**, point to **Platform Configuration**, and click **Launch in Context**.

   The **Launch Entries** filter page appears.

2. Click **New Launch Entry** .

   An empty **Launch Entry** page appears.

3. Type options using the descriptions in the following table.

   Launch in Context entry options

Option	Description
Launch Entry Name	The internal name of the launch entry, for example, **AMMASSET**.
Console URL	The Meridian Explorer URL, including search parameters that use substitution variables as described in Compose View URLs.
Target Browser Window	One of the following options: • **_usecurrent**: Use the current browser window • **_blank**: Use a new browser window (default)

4. Click **Save Launch Entry** .
5. Repeat steps 1 to 3 for each Maximo application in which you want a pushbutton or menu option to appear.

Create a Signature Option

Creating a signature option defines the security permission for users to run the Launch in Context entries that you have created.

To create a signature option:

1. In Maximo, click **Go To**, point to **System Configuration**, point to **Platform Configuration**, and click **Application Designer**.

   The **Applications** filter page appears.
2. Find and open the application record to which you want to associate the Launch in Context entry.

   The application's **Workspace** page appears.
3. On the **Select Action** menu, click **Add/Modify Signature Options**.

   An **Add/Modify Signature Options** dialog box lists the existing signature options for the selected application.
4. Click **New Row**.

   An new empty row is added to the list.
5. Click options or type values using the descriptions in the following table.
6. Click **OK**.
7. Repeat steps 2 to 6 for each application for which you created Launch in Context entries as described in Create a Launch In Context Entry.

Signature options

Category	Option	Description
General options	Option	A short name for the signature option, for example, **AMM**.
General options	Description	A description of the menu item or button, for example, **Shows vault documents**.
General options	Visible	Enabled
Advanced signature options	Associate to launch entry to enable launch in context	Enabled

Category	Option	Description
Advanced signature options	Launch Entry Name	The name of the Launch in Context entry that you created as described in Create a Launch In Context Entry.

Add a Pushbutton

Adding a pushbutton gives Maximo users access to the signature option that you have created. You can also gives users access with a menu option as described in Add a Menu Option.

To add a pushbutton:

1. In Maximo , click **Go To**, point to **System Configuration**, point to **Platform Configuration**, and click **Application Designer**.

   The **Applications** filter page appears.
2. Find and open the application record to which you want to associate the Launch in Context entry.

   The application's **Workspace** page appears.
3. Click the tab of the application workspace where you want to add the pushbutton.

   The selected workspace appears.
4. On the toolbar, click **Control Palette** .

   The **Controls** palette appears.
5. Drag the **ButtonGroup** control to the location in the application workspace where you want the pushbutton to appear, for example, in the **Linked documents** header at the bottom of the workspace.

   A new pushbutton appears.
6. Right-click the pushbutton (not the button label) and click **Properties** in the shortcut menu that appears.

   The **Pushbutton Properties** dialog box appears.
7. Click options or type values using the descriptions in the following table.

Pushbutton options

Option	Description
Label	Type the label that you want to appear on the pushbutton.
Event	Type the name of the signature option that you created in Create a Signature Option. If you don't remember the name, you can find the name by using the search tool of the **Signature Option** field on the **Advanced** tab.
Signature Option	Type the name of the signature option that you created in Create a Signature Option.

8. Click **Save Application Definition** .
9. Close the **Pushbutton Properties** window.
10. Right-click **buttongroup** and click **Properties** in the shortcut menu that appears.
11. Change the **Label** property to an appropriate name, for example, **Linked Documents**.
12. Repeat steps 2 to 9 for each signature option that you created as described in Create a Signature Option.
13. Log off of Maximo and restart the Maximo server.

Add a Menu Option

Adding a menu option gives Maximo users access to the signature option that you have created. You can also gives users access with a pushbutton as described in Add a Pushbutton.

To add a menu option:

1. In Maximo, click **Go To**, click **System Configuration**, click **Platform Configuration**, and select **Application Designer**.

   The **Applications** filter page appears.
2. Find and open the application record to which you want to associate the Launch in Context entry.

   The application's **Workspace** page appears.
3. On the **Select Action** menu, click **Add/Modify Select Action Menu**.

   An **Add/Modify Select Action Menu** dialog box lists the existing custom menu options for the selected application.
4. Click **New Row**.

   A new empty row is added to the list.
5. Click options or type values using the descriptions in the following table.

   Menu options

Option	Description
Element Type	Select **Option** to create a menu option.
Key Value	Select the signature option name that you created for the selected application as described in Create a Signature Option.
Header Description	Type an internal description of this menu option.
Position	Type a number to specify the relative position of this menu option.
Subposition	Type **0**.
Visible	Enabled
Tabs	Select **Main** since the Launch in Context entry URL has substitution variables in it.

6. Click **OK**.
7. Click **Save Application Definition** .

8. Repeat steps 2 to 7 for each signature option that you created as described in Create a Signature Option.

Grant Access To a Security Group

For Maximo users to run the Meridian Launch in Context entries, they must first be granted security access to the button or menu items that you have created.

To grant access to a security group:

1. In Maximo, click **Go To**, point to **Security**, and click **Security Groups**.

   The **Security Groups** filter page appears.
2. Find and open the security group to which you want to grant access.

   The group's property pages appear.
3. Click the **Applications** tab and in the **Applications** list click the name of the application to which you want to grant menu option access.

   The menu options for the selected application appear in the **Options** list.
4. Click the signature **Description** value that you created as described in Create a Signature Option.
5. Enable the check box in the **Grant Access** column.
6. Click **Grant Listed Options for This Application**.
7. Click **Save Group** .

Test the Integration

When you have completed all of the preceding steps listed in Integrate With Maximo 7, you can test the integration with sample data.

To test the integration with Maximo 7:

1. In Maximo, open the **Asset** application.
2. Select an asset for which you know that related documents reside in Meridian Enterprise.
3. Select the menu option or click the pushbutton that you created.

   A new browser window opens and the **Address** URL contains parameter values from the selected asset. Documents related to the selected asset are listed on the page.
4. Repeat steps 1 to 3 for each Maximo application for which you created menu items and pushbuttons.

Support Multiple Meridian Explorer Sites

Elsewhere, this guide assumes that the maintenance management system site is linked to one Meridian Explorer repository that is synchronized with one Meridian Enterprise vault. However, larger organizations often require more complex configuration to support linking a central maintenance management system with multiple Meridian Explorer servers and multiple Meridian Enterprise vaults.

This topic assumes that Maximo is the maintenance management system and that the documents for each Maximo site are stored in separate vaults, usually local to the site. The solution redirects requests for a specific Site ID to the corresponding Meridian Explorer server and repository.

Following is a possible configuration for a Maximo system using example site, vault, and URLs. The example supports two Meridian Explorer sites (ExplorerSiteA and ExplorerSiteB) and three repositories, two at ExplorerSiteA (RepositoryA1 and RepositoryA2) and one at ExplorerSiteB (RepositoryB). The corresponding root addresses are ExplorerSiteARootURL and ExplorerSiteBRootURL. It also assumes three Maximo sites (MaxSite1, MaxSite2 and MaxSite3). You can modify this example to configure other combinations of sites and repositories.

> **Note:**
> This technique is not supported with Maximo 7.

To configure the Meridian to support multiple Meridian Explorer sites:

1. Create a new JavaScript file named `ExplorerURL.jsp` using the actual names of your sites, vaults, and URLs.

   This file generates the Meridian Explorer root URL based on the Maximo Site ID:

```
<%
String ExplorerURL;
  if (linkdoctree.getParent().getString("siteid").equals( "
MaxSite1")) {

ExplorerURL="http://ExplorerSiteARootURL/Home.aspx?Site=Default&V
aultName=RepositoryA1";}
  else if (linkdoctree.getParent().getString("siteid").equals( "
MaxSite12")) {

ExplorerURL="http://ExplorerSiteARootURL/Home.aspx?Site=Default&V
aultName=RepositoryA2";}
  else if (linkdoctree.getParent().getString("siteid").equals( "
MaxSite3")) {

ExplorerURL="http://ExplorerSiteBRootURL/Home.aspx?Site=Default
";}
  else {
```

```
    ExplorerURL="";}
%>
```

2. Copy `ExplorerURL.jsp` to the `jsp\common\linkdocs` folder.
3. Update all applicable `linkdocs.jsp` files to include `ExplorerURL.jsp`.
4. If applicable, update the `linkdocs.jsp` files to include code to handle an empty value for **ExplorerURL**.

   Following is an example of `linkdocs.jsp` for the Maximo Location application:

```
<%@ include file="../../common/linkdocs/ MeridianURL.jsp" %>
<%if (! ExplorerURL.equals("")) {%>
<iframe width="100%" height="500" frameborder="1" scrolling="yes"
src='<%=ExplorerURL%>&itemnumloc=<%=linkdoctree.getParent
().getString("orgid")%>_
<%=linkdoctree.getParent().getString("itemnum")%>
&location=<%=linkdoctree.getParent().getString("siteid")%>_
<%=linkdoctree.getParent().getString("location")%>
&attachon=location'>
</iframe>
<%}%>
```

A similar configuration can be used for Maximo 6.x. The `maximo.properties` file and `control.jsp` must be modified to create the proper URL to find linked documents on the right Meridian Explorer servers.

Install the Components

This chapter describes how to install the Meridian components and the basic configuration that is needed to test the connectivity between the maintenance management system, Meridian Explorer, and Meridian Enterprise. For information about the detailed configuration that is necessary for each customer's requirements, see Configure Asset Management.

Installing the Meridian components is very much a manual task that cannot be automated completely by a setup program due to the many ways that maintenance management systems are installed (for example, Maximo might be installed on a UNIX computer).

Installing Meridian Enterprise involves tasks for installing and configuring multiple components on several servers and on the client computers. The installation tasks are listed in the order in which they should be performed in the following table and are described in the remainder of this guide. Use the hyperlinks in the following checklist to find the installation information for each task. Track your installation progress by printing this checklist and placing a checkmark in the **Completed** column as you finish each task.

Meridian installation checklist

Completed	Task	Topic Reference
	Read this manual completely to familiarize yourself with the system.	Asset Management
	Verify that the hardware and software requirements are met completely before beginning installation.	Asset Management Module System Requirements
	Back up the maintenance management system configuration and data.	
	Create the tag document type in the Meridian Enterprise vault to store the asset information that will be imported from the maintenance management system and that are required by Meridian.	Required Vault Objects
	Configure the Meridian options in the Meridian Enterprise vault.	Configure Asset Management
	Import the tag data from the maintenance management system into the vault.	Import And Maintain Proxy Tags

Completed	Task	Topic Reference
	Install Meridian Explorer and configure filters that link the asset property values to Meridian Explorer properties. Also create views to show the linked documents to the maintenance management system users.	*Choose An Installation File* in the *Meridian Enterprise Administrator's Guide*, and *Create And Edit Item Filters* and *Compose View URLs* in the *Meridian Enterprise Server Administrator's Guide*
	Synchronize the Meridian Explorer repository with the Meridian Enterprise vault.	*Configure a Meridian Explorer Repository* in the *Meridian Enterprise Server Administrator's Guide*
	Configure the link to Meridian Explorer in the maintenance management system.	Integrate With Maximo 7 Integrate With Other CMMS Systems
	Three options are available for Meridian client applications: • Meridian data consumers and maintenance management system users should use Meridian Explorer. To install it, see *Choose An Installation File* in the *Meridian Enterprise Administrator's Guide*. • Users who will manage the document to tag relationships and need maximum capabilities should use PowerUser. • Occasional users who will manage links between documents and asset tags and who prefer to use a web browser should use PowerWeb.	Installing for a PowerUser user Install For a Web Browser User

Most of these tasks require you to copy files from the Meridian distribution package to various locations, possibly on several computers. In this guide, the following designations are used for these locations:

Folder descriptions

Folder	Description
<Setup>	The location of the distribution package, for example, a CD referred to as drive D:.
<IIS>	The default folder where Internet Information Services web pages are stored. By default, this is `C:\Inetpub\wwwroot` on the computer where Internet Information Services is installed.
<Maximo>	The folder where the Maximo application is installed. On a Windows server, the default is `C:\MAXIMO`.

Installing and configuring Meridian to support custom functionality may require Visual Basic, C#, ASP, or JavaScript (for Maximo integration) programming that is not described in this guide. For professional assistance, please contact your Accruent Solution Partner or Accruent Professional Services.

The following topics describe each installation task.

Asset Management Module System Requirements

Meridian contains several components that each have specific requirements that are described in the following table.

Component requirements

Component	Requirements
Client computers	Requirements described in *System Requirements For Meridian Clients* in the *Meridian Enterprise Administrator's Guide*.
Meridian Explorer	As described in *Create a Meridian Explorer Repository* in the *Meridian Enterprise Server Administrator's Guide*.
Integration with Maximo	Functional installations of Maximo 7.1 or 7.5.
Tag import tools	• Microsoft Office 2007 or higher or the Microsoft.ACE.OLEDB.12 driver installed. If Office is not installed, the driver is available as a separate download from the Microsoft Download Center by the name of Microsoft Access Database Engine Redistributable. • Microsoft .NET Framework 4.0 Full Profile (the Client Profile is insufficient) • Network connectivity to the SAP server where the tag data resides. • SAP server running SAP Enterprise Central Component 6.0 Enhancement Package 7

Install For a Web Browser User

Occasional users who will manage links between documents and asset tags and who prefer to use a web browser can use Meridian PowerWeb. For these users, the PowerWeb pages must also be enabled for the **ObjectsPage_IsVisible** and **WhereUsedPage_IsVisible** events as described in *Property Page Events* in the *Meridian Enterprise VBScript API Reference*.

To install the PowerWeb components:

1. On each client computer, start the Meridian Enterprise setup program as described in *Install the Client Components* in the *Meridian Enterprise Administrator's Guide*.
2. On the **Select Components** page, select the **Meridian PowerWeb** option and proceed as described in the article referenced above.
3. If the Meridian Enterprise vault documents use references extensively or maintenance management system users will redline the documents to initiate engineering change orders, the **Enable PowerWeb Client components** option must be enabled for each user.

   This can be done by each user by setting their personal preferences in PowerWeb. To enable the option centrally for all users, set the **DownLoadDocumentWithRefs** value of the following registry key to **1** on the Meridian Enterprise web server:

   ```
   HKEY_LOCAL_MACHINE\Software\Cyco\AutoManager
   Meridian\CurrentVersion\Weblink\UserPreferences\Default\
   ```

   > **Note:**
   > This step is not necessary if only Adobe PDF documents will be viewed. Meridian will use Adobe Reader, if installed.

4. If a custom asset management system link program will be run locally, install it at this time.

Link Tags And Documents

The relationships between tags (assets) in the maintenance management system and Meridian Enterprise documents can be made with Meridian using two methods:

- Direct linking with properties (property matching)
- Indirect linking with tags (tag references)

  A variation of this method allows linking to a single document or tag in a folder to represent linking to all of the documents or tags in that folder. For more information about this variation, see Configure Linking To Folders.

Both property matching and tag linking rely on arguments passed to Meridian from the maintenance management system. These arguments identify the asset currently selected in the maintenance management system and in some cases, other assets that are related to it. For example, when the user has a work order selected in Maximo and opens its **Linked Documents** page, arguments are passed to Meridian Explorer that identify the selected work order, (optionally) its associated equipment (and location), and the item associated with the equipment. The values used to identify the tags are typically the primary key values from the Maximo database although any parameter provided by the maintenance management system can be used.

With both linking methods, only documents that are explicitly published from the Meridian Enterprise vault will be shown in the maintenance management system. A document is published with the maintenance management system by setting its **Status – Published** property to **True**.

Direct Linking Using Property Matching

Property matching is the most convenient method if a document in the Meridian Explorer repository is only related to a single tag type in the maintenance management system. Property matching can also be used if a document is related to one each of multiple tag types, such as an asset number and a location.

With this method, the relationship is established by matching the value of a property of the Meridian Enterprise document to the value of a property in the maintenance management system. Which properties are used and which comparison operator (for example, equals or contains) is used is defined by filters in the Meridian configuration. Each filter relates a single argument (type of asset in the maintenance management system) to a single property in Meridian Enterprise.

The matching process performs the following steps:

1. When a document is requested by the maintenance management system, integration code sends a URL to Meridian Explorer with a query string that contains arguments that identify the selected asset. For example, eqnum=11430&site=BEDFORD.
2. Based on the configured filters, the Meridian Explorer properties that match the passed arguments are determined, for example, **Custom.EquipmentNumber** for eqnum.
3. In Meridian Explorer, a query is executed to find all documents for which the value of the filter property matches the argument value, for example, **Custom.EquipmentNumber**=11430 and **Custom.Site**=BEDFORD.

This method provides a great deal of flexibility in defining the relationships between assets and Meridian Enterprise documents.

Indirect Linking Using Tag References

It is often necessary to relate a single document in Meridian Enterprise to several tags in a maintenance management system (or vice versa). Examples of this are:

- For each piece of equipment in the maintenance management system, display the maps or floor plans on which it appears.
- For each piece of equipment or location in the maintenance management system, display the process and instrumentation diagrams on which it appears.

To support one-to-many relationships, Meridian uses references in the Meridian Enterprise vault. These references are managed using PowerUser to create references with the **TagObject** reference type between the documents and proxies of the **Tag** document type. The **Tag** proxies represent the related assets in the maintenance management system.

The tags can be created:

- Manually in PowerUser
- Semi-automatically by drawing tag extraction in PowerUser
- Automatically by periodically importing maintenance management system data as described in Import And Maintain Proxy Tags.

> **Note:**
> Although not often required, Meridian also supports tag to tag references.

To aid users in creating references between the proxy tags and related documents, equipment tag data contained within AutoCAD drawings can be extracted, stored in the vault as described in Configure the AutoCAD Link, and replicated to the Meridian Explorer repository. For non-AutoCAD documents, the full-text index data of documents can be scanned for tag names that match a regular expression as described in Configure the Document To Tag Relationships . PowerUser users can then create reference links between the documents and the corresponding tags as described in *Link Documents To a Tag* in the *Meridian Enterprise User's Guide*.

Once the links are created, showing the linked documents in Meridian Explorer is done as follows:

1. When a document is requested in the maintenance management system, integration code sends a URL to Meridian Explorer with a query string that contains arguments that identify the selected asset.

   For example, location=BR451&Site=BEDFORD.
2. Based on the configured filters, the Meridian Explorer properties that match the passed arguments are determined, for example, **Custom.LocationCode** for location.

3. In Meridian Explorer, a query is executed to find all proxy tags for which the value of the filter property matches the argument value, for example, **Custom.LocationCode**=BEDFORD-BR451 and **Custom.Site**=BEDFORD.
4. In Meridian Explorer, all documents with the reference type **TagObject** that are related to the found proxy tags are collected and shown.

Configure Asset Management

After connectivity to the maintenance management system has been established (if applicable), you can perform more detailed vault configuration. This configuration is done in the Meridian Enterprise Configurator on the **AMM Settings** and **AMM User Interface** pages.

Note:

- The Meridian configuration settings are stored in the vault and can be exported and imported for portability and archiving.
- If changes you make in Configurator do not seem to take effect immediately, close Configurator and restart PowerWeb in the Meridian Enterprise Administrator.
- The **AMM Configurations** pages is obsolete and provided for backward compatibility with legacy systems only.

The following topics describe how to configure each of the Meridian options.

Enable the Features

Before you can configure the asset management features of Meridian Enterprise, you must enable the vault to use the features.

To enable the features in a vault:

1. In the Meridian Enterprise Administrator, click **EDM Server** in the left pane.

   The active vaults are listed in the right pane.
2. Select the vault that you want to configure in the right pane.
3. On the **Action** menu and select **Properties**.

   The vault's **Properties** dialog box appears.
4. Click the **Advanced Features** tab.

   The **Advanced Features** page appears.
5. Select **Enable Asset Management Module**.
6. Click **OK**.

Configure the Document To Tag Relationships

The **AMM Settings** page contains options that you use to define the proxy tags in the Meridian Enterprise vault, their related documents in the vault, and the references that relate them to one another.

Configure the AMM settings before deploying Meridian to production.

We recommend not changing the properties or document types in the AMM settings after deployment, as this can cause Publisher errors. If you must change these settings, clear the **Keep revision history** option in the synchronization job. To maintain a complete version history, run the synchronization job frequently.

1. In Meridian Enterprise Configurator, expand **Environment** in the configuration tree and select **Vault Settings**.

   The vault's global options property pages appear in the right pane.
2. Click the **AMM Settings** tab.

   The **AMM Settings** page appears.
3. Click **Edit**.
4. Click options or type values using the descriptions in the following table.
5. Click **OK**.

Relationship options

Group	Name	Description
Tags	Tag number property	Specifies the main tag (asset) identifier. It is used to search for tags in the first field of the **Add-Remove tag assignments** and **Smart Tag Search** dialogs. Required. **Note:** If AutoCAD Plant 3D tags will be used for the proxy tags, the AutoCAD Plant 3D link can be configured to automatically remap to this property. Add the following lines to the **[PnID_Drawings]** section of the link configuration in Meridian Enterprise Configurator, where `AssetModuleSettings` is a predefined keyword and `DocumentAssetNumberProperty` refers to the value of the **Tag number property** setting: `PnID=AssetModuleSettings.DocumentAssetNumberProperty`

Group	Name	Description
Tags	Tag description property	Specifies the tag description property. It is used to search for tags in the second field of the **Add-Remove tag assignments** and **Smart Tag Search** dialogs. Required. May be overridden by the **Search scope** option below. **Note:** If AutoCAD Plant 3D tags will be used for the proxy tags, the AutoCAD Plant 3D link can be configured to automatically remap to this property. Add the following line to the **[PnID_Drawings]** section of the link configuration in Meridian Enterprise Configurator, where `AssetModuleSettings` is a predefined keyword and `DocumentDescription1Property` refers to the value of the **Tag description property** setting: `Description=AssetModuleSettings.DocumentDescription1Property`
Tags	Tag indication property	Specifies the type or level of the tag. It is used for searching in the third column/search field of the tag's property page and Smart Search. This property maps also to the third search parameter for tags in Meridian Explorer. Required for Meridian Explorer only.
Tags	Asset application property	Specifies the maintenance management system application name. For non-tag document types, a value is required if Meridian Explorer is used, in particular if documents will be uploaded from the maintenance management system to the vault.

Group	Name	Description
Tags	Tag document type	Specifies the Meridian Enterprise document type that is used for tags. Required. **Note:** If tags in the vault will be linked to hundreds or even thousands of documents (or vice versa), performance can be slow when project copies are made of the documents and the many references must be evaluated for copying to the project folder. You can minimize the affect on performance with the following: • Set the **Duplicator Default Action** option of this document type to **Reference the source** in Meridian Enterprise Configurator. • Deny the **Override duplication rules** privilege for all security roles assigned to the folder where the tags reside. • Disable the **When source document is copied, also copy reference to destination document** option of the reference type in Meridian Enterprise Configurator. • Advise users to disable the **Display manual references** and all assembly copy options in the **Create Project Copy** dialog box.
Tags	Search scope	Specifies which property to search for tags. Select **Search all text properties** or select **Search in 'Description' property only** to search only in the property specified for the **Tag description** property option above.
Document-Tag reference	Reference direction	Specifies the direction of the references between tags and documents. Select **From Document to Tag (Outgoing)**. The incoming option is only for compatibility with versions 1.1 or 1.2 of the module. Required.
Document-Tag reference	Reference type	Specifies the reference type that is used for the relationship between tags and documents. Required.
Document-Tag reference	Show tag to tag references	Enables the **AssetManagementTags4Tag** extension that can be used to view and create links between tags and other tags.
Documents	Document identification property	Specifies the main document identifier, usually the document number. It is used to search for documents in the first field of the **Add-Remove document assignments** dialog. Required.

Group	Name	Description
Documents	Document description property(1)	Specifies the document description property. It is used to search for documents in the second field of the **Add-Remove document assignments** dialog. Required. May be overridden by the **Search scope** option below.
Documents	Document description property (2)	Additional document description property. Optional.
Documents	Search scope	Specifies which property to search for related documents. Select **Search all text properties** or select **Search in 'Description' property only** to search only on the property specified for the **Document description property (1)** option.
Documents	Proxy document type	Specifies a dedicated document type from which a proxy document can be created in a folder to represent the tag-document references for all of the other documents inside the same folder. For more information on linking a common set of tags to all of the documents within a folder, see Configure Linking To Folders.
Maintenance	Preferred property	Specifies the property for use by maintenance management system users to designate preferred documents. We recommend that you use the **Status – Maintenance Preferred** property created by the module. Required.
Text Tags Search	Regular Expression	A regular expression that matches the tag names to be found in the full-text index of vault documents. Matching tag names are shown in the Meridian Enterprise clients to create reference links between documents and tags as described in the *Link And Unlink Documents And Tags* article in the *Meridian Enterprise User's Guide*. For help calculating a regular expression, see Regular Expression Language - Quick Reference in the MSDN Library.

To maintain the integrity of the data, the following limitations are enforced:

- **Tag Number**, **Tag Description**, and **Tag Identification** must all be different.
- **Tag Number**, **Tag Description**, and **Asset Application** must all be different.
- **Document Identification Property** and **Document Description 1** property must be different.
- All Meridian Enterprise custom properties except for the **Preferred Property** must be a String data type.

Configure Column Display

The columns that are displayed on the **Tags** and **Where Used** property pages in PowerUser can be easily configured using Meridian Enterprise navigation views.

To configure the columns:

1. In Meridian Enterprise Configurator, click **Vault Settings** and then click the **AMM User Interface** tab.

   The currently configured navigation views appear.
2. Click **Edit**.

   The options become editable.
3. Click options or type values using the descriptions in the following table.
4. Click **OK**.

User interface options

Option	Description
Use the column definitions of the following navigation view when displaying documents	An existing navigation view from which to show its columns in lists of linked documents. The columns are specified in the **Displayed columns** list for the selected view as described in Configure the Levels of a View.
Use the column definitions of the following navigation view when displaying tags	An existing navigation view from which to show its columns in lists of linked tags. The columns are specified in the **Displayed columns** list for the selected view as described in Configure the Levels of a View.
AutoCAD tag synchronization reports document type	The document type to assign to reports that are generated by AutoCAD drawing tag synchronization.

> **Note:**
> The view named **Default View** displays the default column structure.

For information on viewing the definitions of existing navigation views or creating a suitable navigation view, Create And Edit Navigation Views.

Configure Property Page Display In PowerWeb

If your organization has many users who will use PowerWeb in a web browser to link documents and tags, property pages are available that support the same functionality as in PowerUser. The pages can be enabled by implementing two VBScript event handlers in the vault's event script.

To enable the property pages in PowerWeb:

1. Configure the Meridian settings normally as described in Configure the Document To Tag Relationships .
2. Add the event handlers to the vault's event script as described in the **ObjectsPage_IsVisible** and **WhereUsedPage_IsVisible** Asset Management events in the *Meridian Enterprise VBScript API Reference Guide*.

Configure the AutoCAD Link

An AutoCAD link is installed with Meridian that supports drawing tag extraction. It can use information that exists in drawings to create and manage links between the drawings and tags. The information can reside in AutoCAD attributes embedded in blocks that are inserted into the drawings to represent plant assets. Meridian can read this information and store it in the vault. The information can then be used to find or create matching tags in the vault. Users can link these tags to the drawing with indirect linking as described in Indirect Linking Using Tag References and the Link And Unlink Documents And Tags article in the *Meridian Enterprise User's Guide*.

This feature works very similar to, but different from, the way Meridian Enterprise synchronizes title block data. This feature is designed for use with equipment tags produced by applications such as AutoCAD. Therefore, it is designed to synchronize the data of many AutoCAD blocks per drawing file.

However, unlike title block synchronization, which can synchronize data in both directions, tag synchronization is performed only from the drawings to Meridian Enterprise. The drawing attributes are never updated from the Meridian Enterprise properties.

Configuring tag extraction includes specifying the attribute tags within your equipment tag blocks for which you want to extract values. You must also specify the corresponding Meridian Enterprise document property where you want to store the extracted data.

This topic describes how to configure basic tag extraction. That is, one attribute tag per tag, where the tag value alone is the tag name. This is the typical scenario. Additional instructions to configure more complex scenarios are described in the following topics.

Compile a list of the block names used by your organization as equipment tag blocks in the past and present. For each block, list the attribute tag names that contain asset numbers. The Meridian Enterprise property where the tag numbers will be stored must already exist and it must be configured as the memo data type.

To configure tag extraction:

1. In Configurator, expand **Environment** in the configuration tree and select **Application Link Settings**.

   The settings for each application link appear in property pages in the right pane.

2. Click the **AutoCAD** tab.

   The AutoCAD settings appear in the right pane.

3. Click **Edit**.

   To export the settings file to your computer, click the **Export** button. This can be useful if you want to edit the file in another text editor. You can then copy your changes to the Clipboard and paste them into Configurator.

4. In the section that begins with **[TAGEXTRACTION]**, edit or add the Tag Extraction Settings you want. If a setting you want to add or change does not exist, create it.

   You can type comments in the file by beginning each line with a semicolon (;).

5. For each block name in TagBlockTypes, locate the section in the file labeled **TAGBLOCK** followed by an underscore and the block name.

   For example, **[TAGBLOCK_XDIN]** or **[TAGBLOCK_XD*]**. If a section does not exist, create it at the bottom of the file.

6. In each **TAGBLOCK_**section, edit or add the TAGBLOCK section settings.
7. Click **OK**.
8. To prevent automatic tag extraction whenever a drawing is saved in AutoCAD, create a DWORD value named **SyncTagsOnSave** at this registry key on the client computers:

   ```
   HKEY_LOCAL_MACHINE\SOFTWARE\Cyco\AutoManager
   Meridian\CurrentVersion\AutoCADLink
   ```

   Set **SyncTagsOnSave** to **0** to disable extraction when the drawing is saved, set it to **1** (default) to enable extraction.

9. Test the AutoCAD link thoroughly by extracting each tag as described in *Create Vault Tags From Drawing Tags* in the *Meridian Enterprise User's Guide*.

TAGEXTRACTION settings

Setting	Description
DisableCircularRef	By default, an error message is shown during tag extraction if a circular reference would result. This setting disables the message. **0** or absent: Processing occurs as normal. **1**: Processing circular references is disabled. This is the same as clicking **Cancel** in the error dialog box.

Setting	Description
TagBlockTypes	Contains the names of all blocks that Meridian will search for attributes to extract. You can delete any unused block names to simplify editing and increase synchronization performance. For example: `TagBlockTypes=XDIN_,XDHV,XDE_SRV,XDE_SIZ,XDE_PMP,XDCV` If multiple block names begin with the same characters and will all use the same settings, you can type a single wildcard pattern to match the names, for example, `XD*` is equivalent to entering individual block names in the example above. If you want to specify different settings for each block name, you must list each block name separately and create a separate settings section for it as described below.
TagListProperty	Meridian Enterprise property set name and property name where extracted tag values (tag number list) are to be stored for each drawing. The property should be a memo data type. For example: `TagListProperty=<PropertySetName.PropertyName>` You can find the names of property sets and properties on the **Properties** page of each document type definition. To add a prefix or suffix to the value that is stored in the property, configure tag name prefixes and suffixes.
RecalculateExtentsOnHotspotExtraction	Define how Meridian updates hotspot extents during extraction to ensure that hotspots appear in the correct position after updates. Set the value using one of the following options: **0**: Do not update extents **1**: Update extents for model only **2**: Update extents for layouts only **3**: Update extents for model and all layouts For example: **RecalculateExtentsOnHotspotExtraction=3**. When you update the extents, Meridian saves them to the hotspot stream.

TAGBLOCK section settings

Setting	Description
TagProperty	A single attribute tag name in the block that contains the tag name to be extracted. If different tag names contain the tag name depending on the value of a document property, see Configure Alternate Tag Names. If any of the attribute tags will be empty, add the following setting (the default is **0**) in the **[TAGEXTRACTION]** section: **AllowEmptyFields=1** This setting may also specify the name of a VBScript function to calculate the tag name by using the value **Script:<*FunctionName*>(<*Attributes*>)** where *<Attributes>* is a comma-separated list of the attribute names to pass to the function for calculation. The link takes those names, retrieves their values, and places them in an array together with the other elements and passes that array to the function. The attribute names and values will be added to the array in the order that they are listed in this setting. We do not recommend omitting the list, which will negatively impact performance. The function should calculate the tag property name from the array elements and if successful, place it in the fourth element of the array and return True. Otherwise, it should return False. The structure of the array is demonstrated in the example function shown at the end of this topic.
TagExpression	Extended wildcard expression `?[TagProperty]*-*TagProperty`, **TagExpression** (without substitution) and TagType are added to the hotspot stream. The viewer component substitutes `[TagProperty]` and interprets the extended wildcard expression. If multiple tags in the vault match the wildcard, a list with the matching tags will be shown when the user clicks the hotspot.
TagType	The name of the Meridian tag type to find or create for the block. This setting is used to create and link tags to drawings as described in the *Link And Unlink Documents And Tags* article in the *Meridian Enterprise User's Guide*. The name can be literal, for example, **Instrument** or it can be a value in the attribute itself. To specify the tag type as an attribute value, specify the tag name that contains the tag type in braces, for example, **[TAG-NAME]**. You may also specify the tag type as a combination of constant strings and tag values with separator characters, for example, **TAG-[TAG-SYSTEM]-[TAG-CLASS]**. Spaces may not be used as separator characters or at the beginning or end of tag names. Filters described in Configure Tag Filters will also be applied to this setting. This setting may also specify the name of a VBScript function to calculate the tag name similar to the **TagProperty** setting.
UseTagPrePostFix	Set to **0** or **1** to ignore or apply tag name prefixes and suffixes as described in Configure Tag Name Prefixes And Suffixes. If this setting is omitted, the settings will be applied.

Here's an example of a **TAGBLOCK** section for a single attribute tag:

```
[TAGBLOCK_XDIN]
TagProperty=NAME
TagExpression=?[TagProperty]*-*
TagType=Instrument
```

Here is a sample VBScript function for use with the **TagProperty** or **TagType** setting.

```
' Option Compare Text
' args - array of:
' 0: (In) layout name, string
' 1: (In) block name, string
' 2: (In) array of attribute names, strings
' 3: (In) array of attribute values, strings
' 4: (Out) tag value, string
' function should return TRUE upon success or FALSE on failure

Function ReadTag(args)
   Dim fRes

   fRes = False

   If IsArray(args) Then
      Dim Layout
      Dim Block
      Dim Names
      Dim Values

      Layout = args(0)
      Block = args(1)
      Names = args(2)
      Values = args(3)

      If IsArray(Names) And IsArray(Values) Then
         Dim TagValue
         Dim Count

         Count = ubound(Values)

         For i = 0 To Count
```

```
33              TagValue = TagValue + Values(i)
34          Next
35
36          args(4) = TagValue
37          fRes = True
38       End If
39    End If
40
41    ReadTag = fRes
42 End Function ' ReadTag
43
```

Configure Tag Name Prefixes And Suffixes

By default, only the literal value is extracted and matched to a tag name in the vault. Optional prefix and suffix text strings can be concatenated with the values when they are saved in the Meridian Enterprise property. The value of the prefix and suffix text is retrieved from other Meridian Enterprise properties for the same drawing from which the values are extracted.

To configure a tag name prefix or suffix:

- Under the **TagListProperty** setting described in Configure the AutoCAD Link or Configure the MicroStation Link, specify the property names by adding **TagPrefixPropertyDef** or **TagPostfixPropertyDef** settings using the following syntax:

  TagPrefixPropertyDef=<*PropertySetName.PropertyName*>
  TagPostfixPropertyDef=<*PropertySetName.PropertyName*>

For example, to specify the prefix UNIT_ for a tag value like UNIT_D0000, you would type the following: `TagPrefixPropertyDef=[UNIT_]<PropertySetName.PropertyName>`

To perform character substitutions or to exclude characters, see Configure Tag Filters.

Combine Multiple Attribute Tags

By default, only one value is extracted from each block/cell and matched to a tag name in the vault. If your blocks/cells contain parts of the tag name in multiple attributes/tags in the same block/cell, you can combine them into a single tag name. The parts can be combined with separator characters, if necessary.

To combine multiple attributes/tags:

- In the **TAGBLOCK** section described in Configure the AutoCAD Link or Configure the MicroStation Link, for each block/cell that contains multiple tag name parts, specify the attribute/tag names and separator characters in the **TagProperty** setting.

  Each name must be included in braces []. For example, **TagProperty=Z[PRODUCT]-[NUM]-[DIAMETER]A** would store an tag name such as Z827-1880-8A.

  > **Note:**
  > Spaces may not be used as separator characters or at the beginning or end of tag names.

If the block/cell contains multiple attributes/tags that should be extracted to generate separate hotspots linked to separate tags, see Configure Multiple Tags In One Block instead.

Configure Tag Filters

If the attribute/tag values (in combinations or with prefixes or suffixes as described elsewhere) in the drawings exactly match the corresponding object names, modifying the attribute/tag values is not necessary. Likewise for the tag type names. However, in some scenarios, the values and names might not exactly match. For example, they might contain fewer characters or they might contain spaces or other separator characters that are not included in the object names. In such a scenario, you can configure a tag filter to remove or replace the separator character with a different character or with no character.

This support is defined for tag values in the **TagFilters** setting, for tag types defined in the **TypeFilters** setting, and filters that can be applied to tag values and tag types defined in the generic **Filters** setting.

> **Note:**
> The **Filters** setting and **TypeFilters** settings are not supported for MicroStation tags. Only the **TagFilters** setting is supported.

The order of precedence in which the filters are applied is:

- **Filters** in the order they are defined.
- **TagFilters** and **TypeFilters** in the order they are defined.

The available filters are:

- **[Replace *<string1>* *<string2>*]**

  The source and replacement characters must each be surrounded with double quotation marks. Each character pair must be included in braces [] with the **Replace** filter keyword.

  For example:

  TagFilters=[Replace " " ""] would remove the space characters from an attribute/tag value such as Z827 1880 8A and return Z82718808A. The filter **[Replace " " "-"]** would replace the space characters from an attribute/tag value such as Z827 1880 8A with hyphens and return Z827-1880-8A.

  You may specify multiple **Replace** filters in the same **TagFilters** setting to accommodate different character pairs, for example, **TagFilters=[Replace " " ""][Replace "-" ""]** would remove both spaces and hyphens from the tag values.

- **[Cut *<start>* *<length>*]**

  Where *<start>* is the 0-based index of the character to start cutting and *<length>* is the number of characters to cut. The value of *<start>* must be less than the length of the property value or the filter will not be applied. If the value of *<length>* is -1, the remainder of the property value is excluded.

For example: :

TypeFilters=[Cut 0 3] would cut the first three characters from the tag type.

Configure Alternate Tag Names

By default, each block/cell only represents one tag type in the vault and that type has a specific naming standard. If your blocks/cells can represent multiple tag types (each with a different naming standard) and the tag type is specified in a document property, you can specify which naming standard should be used depending on the value of the document property.

To configure alternate tag names:

1. In the **TagExtraction** section described in Configure the AutoCAD Link or Configure the MicroStation Link, create settings using the descriptions in the following table.
2. In the **TAGBLOCK** section described in Configure the AutoCAD Link or Configure the MicroStation Link, for each block/cell that represents multiple tag types, add a setting for each value listed in **CaseValues** and specify the corresponding naming standard.

   The naming standard can be specified similar to the one described in Combine Multiple Attribute Tags. Any property values not listed here or documents for which the property specified for **CaseProperty** is empty will receive the default tag name.

Tag settings

Setting	Description

CaseProperty	The name of a document property that contains the values that will be used to determine the naming standard.
	The setting should use the following syntax:
	`CaseProperty=<PropertySetName.PropertyName>`
	For example:
	`CaseProperty=Custom.UnitType`

CaseValues	A comma-separated list of the values that will be used to determine the naming standard. For example: `CaseValues=Chemical,Electrical,Mechanical`

Following is an example of one complete **TAGBLOCK** section configured for alternate tag names:

```
[TAGBLOCK_BLOCK1]
TagProperty=TAG_NO
TagType=Equipment
Chemical=[PROCESS]-[FLUID]-[NUMBER]
Electrical=[NUMBER]
```

In this example for a block named **BLOCK1**, all tag names are linked to the tag type **Equipment** (the default for the block). Tags related to documents for which the **UnitType** property contains **Chemical** are named with the **PROCESS**, **FLUID**, and **NUMBER** attributes/tags. Tags related to documents for which the **UnitType** property contains **Electrical** are named with only the **NUMBER** attribute/tag. Tags related to documents for which the **UnitType** property contains any other value are named with the **TAG_NO** attribute/tag.

Configure Multiple Tags In One Block

By default, only one attribute value is extracted from each block and matched to a tag name in the vault. If your blocks contain multiple tag names in multiple attribute values within the same block, you can map each attribute to a specific tag type.

To configure multiple tags in one block:

1. In the **TAGBLOCK** section described in Configure the AutoCAD Link for each block that contains multiple equipment tags, add a **TagFields** setting.

   This setting is a comma-separated list of attribute names in the block that each contain values to be extracted.

2. For each attribute name specified for **TagFields**, create a section using this syntax:

   `[TAGFIELD_<BlockName>:<TagName>]`

   Where <*BlockName*> is the block name and <*TagName*> is the attribute name.

3. In each **TAGFIELD** section, create a **TagProperty** setting that specifies the tag name.
4. Also in each each **TAGFIELD** section, create a **TagType** setting that specifies the corresponding object type to associate with tag name.

Following is an example of one complete **TAGBLOCK** section for multiple attributes:

```
[TAGBLOCK_BLOCK1]
TagFields=ATTR1,ATTR2,ATTR3

[TAGFIELD_BLOCK1:ATTR1]
TagProperty=ATTR1
TagType=Equipment

[TAGFIELD_BLOCK1:ATTR2]
TagProperty=ATTR2
TagType=Line

[TAGFIELD_BLOCK1:ATTR3]
TagProperty=ATTR3
TagType=Other
```

In this example for a block named **BLOCK1**, the equipment number in the attribute **ATTR1** is linked to the tag type **Equipment**. The equipment number in the attribute **ATTR2** is linked to the tag type **Line**. And the equipment number in the attribute **ATTR3** is linked to the tag type **Other**.

Configure the MicroStation Link

A MicroStation link is installed with Meridian that supports equipment tag extraction. It can use information that exists in drawings to create and manage links between the drawings and tags. The information can reside in MicroStation tags embedded in cells that are inserted into the drawings to represent plant assets. Meridian can read this information and store it in the Meridian Enterprise vault. The information can then be used to find or create matching tags in the vault. Users can link these tags to the drawing with indirect linking as described in Indirect Linking Using Tag References and in the *Link And Unlink Documents And Tags* article in the *Meridian Enterprise User's Guide*.

Note:

- Elsewhere in this guide, the term tag refers to equipment tags, not to MicroStation tag entities. In this chapter, be careful to not confuse equipment tags with MicroStation tags. We have tried to make the distinction clear in the text but because the same word is used in both contexts, the result is not perfect.
- This feature works very similar to the way Meridian Enterprise synchronizes title block data. This feature is designed for use with equipment tags produced by applications such as MicroStation. Therefore, it is designed to synchronize the data of many MicroStation cells per drawing file.

  However, unlike title block synchronization, which can synchronize data in both directions, tag synchronization is performed only from the drawings to Meridian Enterprise. The drawing tags are never updated from the Meridian Enterprise properties.

Configuring tag extraction includes specifying the tags within your equipment cells for which you want to extract values. You must also specify the corresponding Meridian Enterprise document property where you want to store the extracted data.

This topic describes how to configure basic tag extraction. That is, one cell per tag, where the tag value alone is the tag name. This is the typical scenario. Additional instructions to configure more complex scenarios are described in the following topics.

Note:

Compile a list of the cell names used by your organization as equipment tags in the past and present. For each cell, list the tag names that contain asset numbers. The Meridian Enterprise property where the tag numbers will be stored must already exist and it must be configured as the memo data type.

To configure tag extraction:

1. In Configurator, expand **Environment** in the configuration tree and select **Application Link Settings**.

   The settings for each application link appear in property pages in the right pane.

2. Click the **MicroStation** tab.

   The MicroStation link's settings page appears in the right pane.

3. Click **Edit**.

   To export the settings file to your computer, click the **Export** button. This can be useful if you want to edit the file in another text editor. You can then copy your changes to the Clipboard and paste them into Configurator.

4. Locate the section of the settings that begins with **[TAGEXTRACTION]** and locate the **TagCellTypes** setting.

   If the settings do not yet exit, create them at the bottom of the file. The value of the **TagCellTypes** setting contains the names of all cells that Meridian will search for tags to extract.

   You can type comments in the file by beginning each line with a semicolon (;).

5. Edit the value of **TagCellTypes** to include the names of all cells that you want to extract.

   You can delete any unused cell names to simplify editing and increase synchronization performance. The setting should look similar to the following:

   ```
   [TAGEXTRACTION]
   TagCellTypes=INS002,INS010,INS014,60VS02
   ```

   If multiple cell names begin with the same characters and will all use the same settings, you can type a single wildcard pattern to match the names, for example, `INS*` would be equivalent to specifying the individual cell names in the example above. However, if you want to specify different settings for each cell name, you must list each cell name separately and create a separate settings section for it as described below.

6. For each cell name in **TagCellTypes**, locate the section in the file with a label that includes the word **TAGBLOCK** followed by the cell name separated by an underscore, for example, **[TAGBLOCK_6VS02]** or **[TAGBLOCK_INS*]**.

   If one does not yet exist, create it at the bottom of the file.

7. On consecutive lines in each **TAGBLOCK** section, type settings using the descriptions in the following table.

   Following is an example of one complete **TAGBLOCK** section for a single tag:

   ```
   [TAGBLOCK_60VS02]
   TagProperty=NAME
   TagExpression=?[TagProperty]*-*
   TagType=Instrument
   ```

8. Click **OK**.
9. By default, tag extraction occurs automatically whenever a drawing is saved in MicroStation.

   This can be disabled by creating a DWORD value named **SyncTagsOnSave** at the following registry key on the client computers:

   ```
   HKEY_LOCAL_MACHINE\SOFTWARE\Cyco\AutoManager
   Meridian\CurrentVersion\MicroStationLink
   ```

   Set **SyncTagsOnSave** to **0** to disable extraction when the drawing is saved, set it to **1** (default) to enable extraction.
10. Test the link thoroughly by extracting each tag as described in the *Update the Drawing Tag List* article in the *Meridian Enterprise User's Guide*.

Tag settings

Setting	Description
TagProperty	A single tag name in the cell that contains the tag name to be extracted. If different tag names contain the tag name depending on the value of a document property, see Configure Alternate Tag Names. If any of the tags will be empty, add the following setting (the default is **0**) in the **[TAGEXTRACTION]** section: **AllowEmptyFields=1** This setting may also specify the name of a VBScript function to calculate the tag name by using the value **Script:<*FunctionName*>(<*Tags*>)** where <*Tags*> is a comma-separated list of the tag names to pass to the function for calculation. The link takes those names, retrieves their values, and places them in an array together with the other elements and passes that array to the function. The tag names and values will be added to the array in the order that they are listed in this setting. We do not recommend omitting the list, which will negatively impact performance. The function should calculate the property name from the array elements and if successful, place it in the fourth element of the array and return True. Otherwise, it should return False. The structure of the array is demonstrated in the example function shown at the end of this topic.
TagExpression	Extended wildcard expression `?[TagProperty]*-*TagProperty`, **TagExpression** (without substitution) and TagType are added to the hotspot stream. The viewer component substitutes `[TagProperty]` and interprets the extended wildcard expression.

Setting	Description
TagType	The name of the Meridian tag type to find or create for the cell. This setting is used to create and link tags to drawings as described in the *Link And Unlink Documents And Tags* article in the *Meridian Enterprise User's Guide*. The name can be literal, for example, **Instrument** or it can be a value in the tag itself. To specify the tag type as a tag value, specify the tag name that contains the tag type in braces, for example, **[TAG-NAME]**. You may also specify the tag type as a combination of constant strings and tag values with separator characters, for example, **TAG-[TAG-SYSTEM]-[TAG-CLASS]**. Spaces may not be used as separator characters or at the beginning or end of tag names. Filters described in Configure Tag Filters will also be applied to this setting. This setting may also specify the name of a VBScript function to calculate the tag name similar to the **TagProperty** setting.
UseTagPrePostFix	Set to **0** or **1** to ignore or apply tag name prefixes and suffixes as described in Configure Tag Name Prefixes And Suffixes. If this setting is omitted, the settings will be applied.

Note:
When tag extraction occurs, a Meridian Enterprise Client Extension license is claimed.

Following is an example VBScript function for use with the **TagProperty** or **TagType** setting.

```
' Option Compare Text

' args - array of:
' 0: (In) layout name, string
' 1: (In) cell name, string
' 2: (In) array of tag names, strings
' 3: (In) array of tag values, strings
' 4: (Out) tag value, string
' function should return TRUE upon success or FALSE on failure


Function ReadTag(args)
   Dim fRes

   fRes = False

   If IsArray(args) Then
      Dim Layout
      Dim Cell
      Dim Names
      Dim Values

      Layout = args(0)
```

```
      Cell = args(1)
      Names = args(2)
      Values = args(3)

      If IsArray(Names) And IsArray(Values) Then
         Dim TagValue
         Dim Count

         Count = ubound(Values)

         For i = 0 To Count
            TagValue = TagValue + Values(i)
         Next

         args(4) = TagValue
         fRes = True
      End If
   End If

   ReadTag = fRes
End Function ' ReadTag
```

Configure Tag Name Prefixes And Suffixes

By default, only the literal value is extracted and matched to a tag name in the vault. Optional prefix and suffix text strings can be concatenated with the values when they are saved in the Meridian Enterprise property. The value of the prefix and suffix text is retrieved from other Meridian Enterprise properties for the same drawing from which the values are extracted.

To configure a tag name prefix or suffix:

- Under the **TagListProperty** setting described in Configure the AutoCAD Link or Configure the MicroStation Link, specify the property names by adding **TagPrefixPropertyDef** or **TagPostfixPropertyDef** settings using the following syntax:

  TagPrefixPropertyDef=<*PropertySetName.PropertyName*>
  TagPostfixPropertyDef=<*PropertySetName.PropertyName*>

For example, to specify the prefix UNIT_ for a tag value like UNIT_D0000, you would type the following: `TagPrefixPropertyDef=[UNIT_]<PropertySetName.PropertyName>`

To perform character substitutions or to exclude characters, see Configure Tag Filters.

Combine Multiple Attribute Tags

By default, only one value is extracted from each block/cell and matched to a tag name in the vault. If your blocks/cells contain parts of the tag name in multiple attributes/tags in the same block/cell, you can combine them into a single tag name. The parts can be combined with separator characters, if necessary.

To combine multiple attributes/tags:

- In the **TAGBLOCK** section described in Configure the AutoCAD Link or Configure the MicroStation Link, for each block/cell that contains multiple tag name parts, specify the attribute/tag names and separator characters in the **TagProperty** setting.

  Each name must be included in braces []. For example, **TagProperty=Z[PRODUCT]-[NUM]-[DIAMETER]A** would store an tag name such as Z827-1880-8A.

  > **Note:**
  > Spaces may not be used as separator characters or at the beginning or end of tag names.

If the block/cell contains multiple attributes/tags that should be extracted to generate separate hotspots linked to separate tags, see Configure Multiple Tags In One Block instead.

Configure Tag Filters

If the attribute/tag values (in combinations or with prefixes or suffixes as described elsewhere) in the drawings exactly match the corresponding object names, modifying the attribute/tag values is not necessary. Likewise for the tag type names. However, in some scenarios, the values and names might not exactly match. For example, they might contain fewer characters or they might contain spaces or other separator characters that are not included in the object names. In such a scenario, you can configure a tag filter to remove or replace the separator character with a different character or with no character.

This support is defined for tag values in the **TagFilters** setting, for tag types defined in the **TypeFilters** setting, and filters that can be applied to tag values and tag types defined in the generic **Filters** setting.

> **Note:**
> The **Filters** setting and **TypeFilters** settings are not supported for MicroStation tags. Only the **TagFilters** setting is supported.

The order of precedence in which the filters are applied is:

- **Filters** in the order they are defined.
- **TagFilters** and **TypeFilters** in the order they are defined.

The available filters are:

- **[Replace *<string1>* *<string2>*]**

  The source and replacement characters must each be surrounded with double quotation marks. Each character pair must be included in braces [] with the **Replace** filter keyword.

  For example:

  TagFilters=[Replace " " ""] would remove the space characters from an attribute/tag value such as Z827 1880 8A and return Z82718808A. The filter **[Replace " " "-"]** would replace the space characters from an attribute/tag value such as Z827 1880 8A with hyphens and return Z827-1880-8A.

  You may specify multiple **Replace** filters in the same **TagFilters** setting to accommodate different character pairs, for example, **TagFilters=[Replace " " ""][Replace "-" ""]** would remove both spaces and hyphens from the tag values.

- **[Cut *<start>* *<length>*]**

  Where *<start>* is the 0-based index of the character to start cutting and *<length>* is the number of characters to cut. The value of *<start>* must be less than the length of the property value or the filter will not be applied. If the value of *<length>* is -1, the remainder of the property value is excluded.

For example: :

TypeFilters=[Cut 0 3] would cut the first three characters from the tag type.

Configure Alternate Tag Names

By default, each block/cell only represents one tag type in the vault and that type has a specific naming standard. If your blocks/cells can represent multiple tag types (each with a different naming standard) and the tag type is specified in a document property, you can specify which naming standard should be used depending on the value of the document property.

To configure alternate tag names:

1. In the **TagExtraction** section described in Configure the AutoCAD Link or Configure the MicroStation Link, create settings using the descriptions in the following table.
2. In the **TAGBLOCK** section described in Configure the AutoCAD Link or Configure the MicroStation Link, for each block/cell that represents multiple tag types, add a setting for each value listed in **CaseValues** and specify the corresponding naming standard.

   The naming standard can be specified similar to the one described in Combine Multiple Attribute Tags. Any property values not listed here or documents for which the property specified for **CaseProperty** is empty will receive the default tag name.

Tag settings

Setting	Description

CaseProperty	The name of a document property that contains the values that will be used to determine the naming standard.
	The setting should use the following syntax:
	`CaseProperty=<PropertySetName.PropertyName>`
	For example:
	`CaseProperty=Custom.UnitType`

CaseValues	A comma-separated list of the values that will be used to determine the naming standard. For example: `CaseValues=Chemical,Electrical,Mechanical`

Following is an example of one complete **TAGBLOCK** section configured for alternate tag names:

```
[TAGBLOCK_BLOCK1]
TagProperty=TAG_NO
TagType=Equipment
Chemical=[PROCESS]-[FLUID]-[NUMBER]
Electrical=[NUMBER]
```

In this example for a block named **BLOCK1**, all tag names are linked to the tag type **Equipment** (the default for the block). Tags related to documents for which the **UnitType** property contains **Chemical** are named with the **PROCESS**, **FLUID**, and **NUMBER** attributes/tags. Tags related to documents for which the **UnitType** property contains **Electrical** are named with only the **NUMBER** attribute/tag. Tags related to documents for which the **UnitType** property contains any other value are named with the **TAG_NO** attribute/tag.

Configure Multiple Tags In One Cell

By default, only one tag value is extracted from each cell and matched to an tag name in the vault. If your cells contain multiple tag names in multiple tag values within the same cell, you can map each tag to a specific tag type.

To configure multiple tags in one cell:

1. In the **TAGBLOCK** section described in Configure the MicroStation Link for each cell that contains multiple equipment tags, add a **TagFields** setting.

   This setting is a comma-separated list of text array indexes in the cell that each contain values to be extracted.

2. For each text array index specified for **TagFields**, create a section using this syntax:

   `[TAGFIELD_<BlockName>:<TextArrayIndex>]`

   Where <*BlockName*> is the block/cell name and <*TextArrayIndex*> is the text array index.

3. In each **TAGFIELD** section, create a **TagProperty** setting that specifies the text array index.
4. Also in each each **TAGFIELD** section, create a **TagType** setting that specifies the corresponding object type to associate with text array index.

Following is an example of one complete **TAGBLOCK** section for multiple tags:

```
[TAGBLOCK_BLOCK1]
TagFields=[0],[1]

[TAGFIELD_BLOCK1:0]
TagProperty=[0]
TagType=Equipment-[0]

[TAGFIELD_BLOCK1:1]
TagProperty=[1]
TagType=Line-[1]
```

Configure Linking To Folders

Besides the explicit method of linking documents to tags that is described in Indirect Linking Using Tag References, Meridian also supports implicitly linking a set of tags to all of the documents that reside in the same folder. After it has been properly configured, this implicit method makes it fast and easy to link a document to many tags in a single step. This can be very useful if the documents in a vault are organized in a folder structure that reflects a plant breakdown structure (PBS) and if the documents in each folder are typically related to the same set of asset tags.

Meridian provides this feature through a special proxy document that users can create in any folder that will contain normal documents. Users manually link the proxy document to the tags (that typically reside elsewhere in the vault) that they also want to be linked to the normal documents that reside in the same folder with the proxy document. The proxy document represents all of the documents in the folder with regard to the relationships with the tags. This is because references are not supported literally for folders in Meridian Enterprise. When a normal document is created in that folder, the tags that are linked to the proxy document are assumed by Meridian to also be linked to the other documents in the folder. No literal reference exists between the normal documents and the tags. It is only by the association of the normal documents with the proxy document in the parent folder that the references are implied.

You configure this feature by creating a proxy document type and specifying that document type in the Meridian configuration.

The reverse direction is also supported although differently. That is, Meridian also supports implicitly linking documents to all of the tags that reside in the same folder. This is supported when you implement two VBScript functions, one that enables the feature and one that identifies the tag that is the main tag in the folder.

Other VBScript functions are available that make the **Tags** and **Where Used** property pages appear on the parent folders in both of the preceding scenarios. Uses can view these pages to see lists of the related documents or tags without having to find the proxy document or main tag. From a user's perspective, the documents and tags can appear as though they are linked to folders. Another benefit of this feature is that documents added to or removed from a folder will automatically appear or disappear, respectively, from the **Tags** or **Where Used** property pages.

Configuring these features are described in the following topics.

Configure the Proxy Document Type

The proxy document acts in the place of a folder in its relationships with tags. Configuring a proxy document type causes the **Tags** property page to appear for the proxy documents and all existing folder types. The page is not shown for other documents. When the page is shown for a folder, the page contains a **Go to Proxy Document** button. When clicked, focus shifts to the proxy document in the active folder.

> **Note:**
> The visibility of the **Tags** property page for proxy documents and folders can be controlled with the **AMMTagsPageIsVisible** function described in the *Meridian Enterprise VBScript API Reference*.

To configure the proxy document type:

1. Create a dedicated document type in Configurator as described Create And Edit Document Types.

   This document type should not be used for any other purpose. It can have any name and its only requirement is that its **Type** be set to **General**.

2. Select the new document type for the **Proxy document type** option described in Configure the Document To Tag Relationships .

Configure the Where Used Page

Configuring the proxy document type as described in Configure the Proxy Document Type enables the **Tags** page for folders. That page shows the tags that are referenced by the proxy document and thereby implicitly associated with the folder and its contents. The **Where Used** page can also be enabled for the reverse direction of the relationships. It shows the proxy document itself that references the tags in a folder. Clicking the **Go to Main Tag** button on the page will shift focus to the main tag in the active folder.

> **Note:**
> The visibility of the **Where Used** property page for tags and folders can be controlled by the **AMMWhereUsedPageIsVisible** function described in the *Meridian Enterprise VBScript API Reference*. For example, it can be implemented to only show the **Where Used** page on the main tag.

To configure the **Where Used** page:

1. Implement the **AMMUseMainTag** function described in the *Meridian Enterprise VBScript API Reference*.

   The logic can be anything that you decide is required to return True and thereby enable the **Where Used** page.

2. Implement the **AMMMainTagDocumentId** function described in the *Meridian Enterprise VBScript API Reference*.

   The logic must return the ID of the main tag for the active folder, which can be any tag that meets your requirements.

Configure Folder Synchronization

Users can synchronize their (local or shared) workspace with the vault to create any missing project folders so that they can work outside of the vault. By default, all existing subfolders are created in the workspace folder. If your organization typically creates other subfolders that aren't needed by AutoCAD, you can exclude them from the synchronization to save synchronization time and disk space. You can exclude the folders of a certain folder type or folders with specified property values.

To configure folder synchronization:

1. In Configurator, expand **Environment** in the configuration tree and select **Application Link Settings**.

   The settings for each application link appear in property pages in the right pane.
2. Click the **AutoCAD** tab.

   The AutoCAD settings appear in the right pane.
3. Click **Edit**.

   To export the settings file to your computer, click the **Export** button. This can be useful if you want to edit the file in another text editor. You can then copy your changes to the Clipboard and paste them into Configurator.
4. Locate the section of the settings that begins with **[PnIDFolderDefinition]**.

   If the section does not yet exit, create it at the bottom of the file.

   You can type comments in the file by beginning each line with a semicolon (;).
5. Create or modify the settings using the descriptions in the following table.

   You can find the names of property sets and properties on the **Properties** page of each folder type definition.
6. Click **OK**.

Folder synchronization settings

Setting	Description
FolderTypeName	The name of the folder type to include in synchronization.
FolderPropertyName	The name of a folder property. The value of this property must match the **FolderPropertyValue** setting to be included in synchronization.
FolderPropertyValue	The value of the property specified in **FolderPropertyName** to include in synchronization.

Following is an example of one complete **[PnIDFolderDefinition]** section:

```
[PnIDFolderDefinition]
FolderTypeName=PnIDFolder
FolderPropertyName=PnIDFolderSet.ProjectType
FolderPropertyValue=PnID
```

Configure the Display Of Virtual Tags

Normally, when users make copies of master documents into project folders, only the project copies are visible there. Tags that are linked to the master documents (and presumably, to the project copies) are only visible by viewing the links from the master documents. In some business processes, it can be helpful to see the tags virtually in the project folders. A setting is provided to enable this feature.

The tags are not copied to the project folder but are for reference only and are shown in red text to indicate that they are virtual tags. You can see the actual or virtual state of these tags by adding the **IsVirtual** column to the selected navigation view as described in Configure Column Display.

> **Note:**
> Only those tags will be shown for which the direction of the references is from the tag to the document (outgoing).

To enable the display of virtual tags:

1. In Meridian Enterprise Configurator, navigate to the **Environment** > **Application Link Settings** > **Application Integration** tab.
2. Create a section named **[AMMCUSTOM].**
3. Add a setting in the new section named **TagsInProjects**.
4. Set the value of the **TagsInProjects** setting to **1**.

```
[AMMCUSTOM]
TagsInProjects=1
```

Configure Project Copy Filtering

By default, all project copies of documents are visible in project folders whether or not they have been released or retired. This allows tags and other items to be linked to them, which not be what you intend. You can avoid this problem by enabling the filtering out of these project copies so that they are not seen by users.

For PowerWeb

1. Enable virtual tags as described in Configure the Display Of Virtual Tags.
2. In Meridian Enterprise Configurator, navigate to **Environment** > **Application Link Settings** > **Application Integration**.
3. Create a section named **[AMMCUSTOM]** as in the following example.

   ```
   [AMMCUSTOM]
   ForceEnableFiltering=1
   ```

4. Add a setting in the new section named **ForceEnableFiltering**.
5. Set the value of this setting to **1** as in the preceding example.

   The default is **0**, disabled. When filtering is enabled, the text **Additional filtering is used** will appear in the **Manage Tag Links** dialog box to alert users that some documents might not be visible.

Hotspots Overview

Use the following options to configure extraction of automatic and manual hotspots.

To create manual hotspots, see the PowerWeb procedures in *Create, Edit, and Delete Hotspots* in the *Meridian Enterprise User's Guide*.

Configure application links for extracting automatic hotspots

To configure Meridian to extract tag data from automatically created hotspots:

- See Configure the AutoCAD Link for hotspots in AutoCAD drawings.
- See Configure the MicroStation Link for hotspots in MicroStation drawings.

Configure extraction of automatic hotspots using Publisher

To extract automatically created hotspots using Publisher, see *Configure Hotspot Extraction Options* in the *Meridian Enterprise Server Administrator's Guide*.

Configure extraction of automatic hotspots using script

To automate the extraction of automatically created hotspots, use the **CreateHotspotList** method of the **TagExtractor** object, as described in the *Meridian Enterprise VBScript API Reference Guide*.

Configure extraction of manual hotspots during rendering

To extract manually created hotspots for the rendition job, manually link the hotspot to an object or a document:

1. Select the hotspot.

   The **Hotspot** dialog box opens.
2. Enter the **Tag number** and/or **Expression** of the hotspot and object or document according to the matching conditions.

   You can also enter the **Tag type**.

   The matching conditions are the following:

- If the value of the **Tag number property** for an object or document equals the **Tag number** value of the hotspot, it will match the hotspot.
- If the value of the **Tag number property** for an object or document matches the wildcard **Expression** of the hotspot, it will match the hotspot.
- If the **Tag type** on the hotspot is left empty, the matching will ignore it.
- If the **Tag type** on the hotspot has a value, the value of the **Tag indication property** of an object or document must be equal to that value to match the hotspot.

The matching considers the current project and the master area. For drawings that are not in a project, it is only possible to match the tags and documents that are in the master area.

For drawings that are in a project, the search for a target object or document occurs first in the same project. If no match is found in the project, the search occurs in the master area.

To configure properties for identifying tags, see Configure the Document to Tag Relationships.

To define a master area in a Meridian Vault, see Create and Edit Folder Types.

To define a master area in Explorer, create a new filter type and select the **Filter to define master area** option, as described in the *Meridian Enterprise Server Administrator's Guide*.

> **Note:**
> When you update a hotspot without updating the rendition of their documents, if the object has been moved in the drawing, the position of the hotspot will be incorrect on the rendition.

Configure Meridian Explorer

After a repository has been created and synchronized with its source vaults, its configuration contains only the default information necessary for basic operation. To expand the repository's functionality and customize it for users' requirements, you must modify the configuration.

You cannot configure default sorting options or hide columns for users in Explorer. Files are sorted alphabetically according to the file name.

The configuration includes the following areas:

- Definitions of the tag types, properties, filters, references, and so on for both documents, tags, and projects. Configuring these definitions primarily controls *what* information is seen by users.
- Definitions of the grid columns, property navigation structures, advanced search, navigation views, and filters used for both documents and tags. Configuring these definitions primarily controls *how* information is found and seen by users.
- (Optional) customization of the feedback page functionality as described in Customize the Feedback Page Functionality.

For Meridian use, you must create at least one document or tag filter. If direct linking is in effect as described in Direct Linking Using Property Matching, a document filter must be created. If indirect linking is in effect as described in Indirect Linking Using Tag References, a tag filter must be created. If both linking types are in effect, both filter types must be created.

Meridian asset management can work with any Meridian Explorer document view. We recommend that you use an existing view to confirm that the related documents are shown correctly and then determine if either modifying the view definition or creating a new view dedicated for use with Meridian is necessary.

Creating filters and the URLs that use them are described in the following topics. For additional information about Meridian Explorer configuration, including view creation, see the *Repositories* section of the *Meridian Enterprise Server Administrator's Guide*.

Create And Edit Item Filters

Item filters determine the *items* that are available to be shown in the various repository views. These filters are not to be confused with view filters that can filter the *properties* that are available to be shown in a particular view.

Item filters can be one of two types:

- A property comparison expression that filters the items that are shown in a repository view.

  In prior versions of Meridian Explorer, this was the only way to restrict access to items. This method is still supported but we recommend using item level security whenever possible as described in Assigning permission levels to property hierarchy values.
- An expression that also defines corresponding URL parameters for each property in the filter for integration with another system, such as the Meridian Asset Management Module.

Item filters can be defined for documents, tags, and projects. Every view uses one of these filters.

Create or Edit an Item Filter

To create or edit an item filter:

1. In Meridian Enterprise Server Administration Console, in the **Repositories** group, click **Repositories**.

   The **All Repositories** page appears and lists the existing Meridian Explorer repositories and Meridian Enterprise vaults.
2. Double-click the name of the repository that you want to configure.
3. In the menu, click **Management Tools**.

   The management tools for the selected repository appear.
4. In the **Item Filters** group, click **Manage**.

   The **Filters** page for the selected repository appears and lists the existing filters.
5. Choose between two options:
   - To edit an existing filter:
     - Double-click the filter row.

       The configuration dialog box for the selected filter appears.

- To create a new filter:
    a. Click **New**.

       The **New Query** dialog box appears.
    b. Select the type of filter that you want to create.
    c. Click **Next**.

       The configuration dialog box for the new filter appears.

6. Click options or type values using the descriptions in the following table.
7. Click **OK**.

Filter options

Page	Option	Description
General	Name	Type a descriptive name for the filter. You will specify this name when configuring views or when composing view URLs.
General	Code	The read-only internal name of the filter.

Page	Option	Description
Filter	Filter expression	To add a property to the filter expression: • Click **Add Property**. A new condition row is added to the expression and appears in **Preview**. **Note:** ◦ To create a filter template for use with another system such as the Meridian Asset Management Module, add one property and placeholder for each parameter in the URL that will be passed to Meridian Explorer from the other system. Examples are **Custom.SiteID** equals **{siteid}** and **Custom.LocationNumber** equals **{location}**. The parameter placeholders must be enclosed in braces {}. As you enter each parameter placeholder, the text in **URL** updates to show you a preview of the resulting filter template. ◦ When passing values to the filter that include symbols, encode the symbols in URL format. For example, replace the slash symbol (/) with %2F in date values. To edit an existing condition: 1. Click the condition row. The row becomes editable. 2. Select a property name in the **Property** column list. 3. Select an operator in the **Operator** column list. 4. Type a search value in the **Value** column. To delete a property from the filter expression: • Select the row and then in the toolbar, click **Remove**. The row is deleted and **Preview** is updated to show the resulting filter. By default, the properties will be evaluated with the Boolean AND operator. To change the operator by which the properties are joined: • Click the operator that you want to change and select a different operator.

Delete an Item Filter

A filter can only be deleted if it is not used by any repository view.

To delete an item filter:

1. In Meridian Enterprise Server Administration Console, in the **Repositories** group, click **Repositories**.

   The **All Repositories** page appears and lists the existing Meridian Explorer repositories and Meridian Enterprise vaults.
2. Double-click the name of the repository that you want to configure.
3. In the menu, click **Management Tools**.

   The management tools for the selected repository appear.
4. In the **Item Filters** group, click **Manage**.

   The **Filters** page for the selected repository appears and lists the existing filters.
5. Select the filter that you want to delete and then in the toolbar, click **Remove**.

   A dialog box opens, asking you to confirm your choice.
6. Click **Yes**.

   The filter is deleted.

Compose View URLs

By default, the Meridian Explorer website opens to the **Welcome** page, where the user can begin browsing and searching the repository. The default URL of the site is: `http://<ServerName>/bcenterprise` or `http://<ServerName>/bcenterprise/home.aspx`. Under some circumstances or for some users, you might want the website to open to a specific view with a specific document or tag filter, optionally disable other navigation, and show the items as thumbnails. You can achieve these and similar results by composing a URL that specifies the view to open and other parameters. You can then place the URL in a hyperlink on a different site or in a shortcut on the user's desktop.

The URL is similar for the Meridian Explorer mobile website. The website can be opened by a URL with the schema name **bluecielo** and the username and password:

bluecielo:<*ServerName*>/<*UserName*>/<*Password*>?

The maximum number of results that appear for a filter URL is 1,000.

URL Parameters

The Meridian Explorer URL accepts the optional parameters described in the following table. The view and filter IDs can be found in Meridian Enterprise ServerAdministration Console as the names that are automatically assigned to them.

Meridian Explorer URL parameters

Parameter	Description

COMMENTS	If set to **True**, shows the **Comments** page of the document or tag. This parameter is intended to be used in the URL of a custom external page in Meridian Enterprise PowerUser. The page can be useful for Meridian Enterprise users to see the comments entered in Meridian Explorer.
	Use the following VBScript expression to calculate a URL that specifies an external property page in Meridian Enterprise. Replace *<ServerName>* with your web server name and modify the **ViewID** parameter to specify the view definition. Then Meridian Enterprise users can view the comments entered by Meridian Explorer users. For more information about configuring an external property page for Meridian Enterprise, see Configure External Pages.
	`"http://<ServerName>/BCEnterprise/Home.aspx?ViewID=DOC_E91E5&GLOBALID=" & Cstr(Document.ID)& "&COMMENTS=True"`
	• If the URL will be shown as an external property page in Meridian Enterprise and the specified view is configured to show renditions and the **Enable PDFTron viewer for PDF documents** option is enabled as described in Configure the Viewer Options, the rendition may not appear in PowerUser unless the following registry values are set:
	For 32-bit, set the DWORD value **PowerUserU.exe** to **0000270f** at:
	`HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Microsoft\Internet Explorer\Main\FeatureControl\FEATURE_BROWSER_EMULATION`
	For 64-bit, set the DWORD value **PowerUser.exe** to **0000270f** at:
	`HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Internet Explorer\Main\FeatureControl\FEATURE_BROWSER_EMULATION`

DEFVIEW	Optional display mode in which to show the results pane. May only be used with **VIEWID**. If this parameter is set to **THUMBNAIL**, items in the view pane appear as thumbnail images. If this parameter is set to any other or no value, the items appear in a grid view.
DOCFILTER	Optional ID of an item filter to apply to the specified view. The filter specifies which documents are included using property matching. If the filter specifies property value criteria, the property values must be specified in placeholders in the URL. The criterion operator in the filter definition will be used and should not be specified in the URL. If no value is specified in the URL for the property value criteria of a filter, the filter always evaluates to True. For information about creating item filters, see Create And Edit Item Filters.

Parameter	Description
GLOBALID	Optional value of the Meridian Enterprise **Document ID** property of the document or tag for which to show comments. This parameter is intended to be with the **COMMENTS** parameter in the URL of a custom external page in Meridian Enterprise PowerUser.
HIDEVIEWBAR	When missing (default) or set to **TRUE**, hides the views bar at the bottom of the page. This parameter is intended for use when Meridian Explorer is integrated with another system and only the **Documents** view is relevant. The views bar can be hidden entirely as described in the *Customize the User Interface* article in the *Meridian Enterprise Server Administrator's Guide*.
HOME	When missing (default) or set to **YES**, shows links to the home page. When set to **NO**, hides the home page links. This parameter is intended for use with the **MOD** parameter to show a substitute view.
ID	One or more document IDs to show in a view specified by the **VIEWID** parameter. Separate multiple IDs with the semicolon (;) character. For example: `http://MyServer/bcenterprise/Home.aspx?VIEWID=DOC_E91E5&ID=100;101;102`
ISOLATION=TRUE	Hides the views bar and the **HOME** tab in the ribbon menu bar when one document or a list of documents is previewed in a new browser window, such as from within a maintenance management system.
MOD	When set to one of the shortcuts listed in the *Meridian URL shortcuts* article in the *Meridian Enterprise Server Administrator's Guide*, shows that view instead of the home page.
MRU	When missing (default) or set to **YES**, shows a group of the most recently used view names on the home page. When set to **NO**, it shows the welcome text instead of the view names.
NAVSTATE	Optional display state of the navigation pane in the browser. May only be used with **VIEWID**. If this parameter is set to **HIDE**, the pane is collapsed and the results pane expands to full window width. If this parameter is set to any other or no value, the navigation pane is visible.

Parameter	Description

PACKAGEID	Export package ID to show on the **Collections** page by the **VIEWCAT** parameter as in the following example.
	`http://MyServer/bcenterprise/home.aspx?RN=MyRepository&ViewCat=MyPackage&PACKAGEID=10`
	Also used for the ID of a package to show on the **Import Packages** page by the **import** URL shortcut described in the *Enterprise Server URL shortcuts* article in the *Meridian Enterprise Server Administrator's Guide*. For example:
	`http://MyServer/bcenterprise/import?PACKAGEID=10`

RN	The repository name to open. The asterisk (*) wildcard character may be specified to open the first available repository.
TAGFILTER	Optional ID of an item filter to apply to the specified view. Typically, this filter is used to specify which assets are included using indirect linking. If the filter specifies property value criteria, the property values must be specified in placeholders in the URL. The criterion operator in the filter definition will be used and should not be specified in the URL. If no value is specified in the URL for the property value criteria of a filter, the filter always evaluates to True. For information about creating item filters, see Create And Edit Item Filters.
TagNumber	Optional value of the **Tag Number** property of the tag for which to show its related documents.
UPLOAD	When set to **1**, the **Upload** button will be available in the toolbar of the **Related Documents** page. When set to **0** (default), the button is not shown. This parameter is intended for use when the view is shown from within a maintenance management system. Users can click the button to upload files to the Meridian Enterprise source vault of the repository. The files will be uploaded to the first vault that is a source of the synchronization job of the repository. You cannot specify one vault from among multiple sources. If no source vault is configured for the synchronization job, an error will occur. The Meridian Portal web application `web.config` file should also be modified to configure the maximum acceptable file size (in KB) to upload, similar to the following. Files larger than this will fail to upload. The default is 4096: `<httpRuntime maxRequestLength="1048576" />` The **AIMS_Attach_Intialize** event procedure must also be implemented (to assign a document type to the uploaded documents, for example) as described in *Asset Management Events* in the *Meridian Enterprise VBScript API Reference Guide*. The optional **AIMS_Attach_Before** and **AIMS_Attach_After** events may also be implemented.

Parameter	Description
VIEWCAT	The item type view to open. The supported types are **DOC**, **TAG**, **Project**, and **Package**.
VIEWID	The ID of the view to open. When a document view is specified, all documents will be listed that match the filter specified by **DOCFILTER** or are related to a tag that matches the filter specified for **TAGFILTER**. When a tag view is specified, all tags will be listed that match the filter specified by **TAGFILTER** or are related to a document that matches the filter specified for **DOCFILTER**. Required for use with the Meridian Asset Management Module.
VIEWMODE	Optional display mode of the detail pane. If this parameter is set to **DETAILS**, the details page of the first item in the result set will be shown.

Examples

Following are some examples of using the client URL parameters.

- Open the default documents view for the repository **MyRepos**:

  `http://<ServerName>/BCEnterprise/Home.aspx?RN=MyRepos&VIEWCAT=DOC`

- Open the view named **DOC_E915** of the default repository:

  `http://<ServerName>/BCEnterprise/Home.aspx?VIEWID=DOC_E91E5`

- Open the view named **DOC_E915** of the default repository and apply the document filter named **123456**.

  `http://<ServerName>/BCEnterprise/Home.aspx?VIEWID=DOC_E91E5&DOCFILTER=123456`

- Open the view named **DOC_E915** of the default repository and apply the tag filter named **222222**:

  `http://<ServerName>/BCEnterprise/Home.aspx?VIEWID=DOC_E91E5&TAGFILTER=222222`

- Open the view named **DOC_E915** of the default repository, apply the document filter named **123456**, and apply the tag filter named **222222**:

  `http://<ServerName>/BCEnterprise/Home.aspx?VIEWID=DOC_E91E5&DOCFILTER=123456&TAGFILTER=222222`

- Open the view named **DOC_E915** of the default repository, apply the document filter named **123456**, and pass the value **ABC** for the filter criterion with property **SITEID**:

```
http://<ServerName>/BCEnterprise/Home.aspx?VIEWID=DOC_
E91E5&DOCFILTER=123456&SITEID=ABC
```

- Open the view named **DOC_E915** of the default repository, apply the document filter named **123456**, pass the value **ABC** for the filter criterion with property **SITEID**, hide the navigation pane, and display the results pane in thumbnail mode:

  ```
  http://<ServerName>/BCEnterprise/Home.aspx?VIEWID=DOC_
  E91E5&DOCFILTER=123456&SITEID=ABC&NAVSTATE=HIDE&DEFVIEW=THUMBNAIL
  ```

- Open the view named **DOC_E915** of the default repository and show the **Comments** page for the current document.

  Use the following VBScript expression to calculate a URL that specifies an external property page in Meridian Enterprise PowerUser. Replace <*ServerName*> with your web server name and modify the ViewID parameter to specify your view definition. Then Meridian Enterprise users can view the comments entered by Meridian Explorer users.

  ```
  "http://<ServerName>/BCEnterprise/Home.aspx?ViewID=DOC_
  E91E5&GLOBALID=" & Cstr
  (Document.ID)& "&COMMENTS=True"
  ```

- Open the Meridian Explorer mobile website, apply the document filter named **123456** and the tag filter named **654321**, pass the filter template criteria **WO=123** and **FUNCLOC=ABC**, and title the results **Related Documents**.

  ```
  bluecielo:<ServerName>/<UserName>/<Password
  >?DOCFILTER=123456&TAGFILTER=654321&WO=123&FUNCLOC=ABC&TITLE=Rela
  ted Documents
  ```

- Open the view named **DOC_MASTERS** of the default repository in list mode, hide the navigation pane, apply the tag filter named **F00001**, and show the documents related to tag **ABC123** in a list.

  ```
  https://<ServerName>/BCEnterprise/Home.aspx?VIEWID=DOC_
  MASTERS&TAGFILTER=F00001&DEFVIEW=LIST&NAVSTATE=HIDE&VIEWMODE=LIST
  &TAGNUMBER=ABC123
  ```

Customize the Feedback Page Functionality

Meridian Explorer provides special functionality to create a page specifically for feedback from an asset management system that is integrated with Meridian. This functionality is activated when the **Enable feedback functionality** option is enabled on a detail page in the Meridian Explorer configuration:

- Adds the change management properties in the **Custom** property set to the page. Users can enter values that will be saved in the Meridian Enterprise vault:
  - **Remarks** (**Custom.ChangeManagementRemarks**)
  - **Request type** (**Custom.ChangeManagementRequestType**) will show a list of the values in the **RequestType** lookup list in the Meridian Enterprise vault. Users can enter new values that are added to the lookup list.

  > **Note:**
  > If the properties are not available on the page, the text **Change Management** will appear instead and show a value of **Not available**.
- The following properties are also updated but not shown on the page:
  - The date/time the preceding properties were changed (**Custom.ChangeManagementDateEntered**)
  - The name of the user who changed the properties (**Custom.ChangeManagementEnteredBy**)
- The document filename, workflow status, and revision number are also shown in the results grid. Additional properties can also be configured.
- (Optional) VBScript functions can be implemented that customize the behavior of the feedback page and add custom command buttons.
- Enables redlining in the Meridian Explorer viewer and saves any redline changes to the Meridian Enterprise vault.

> **Note:**
> - This option is typically used together with the **Viewer options** setting to show documents or their renditions and (optionally) their redlines within the asset management system.
> - If this page is used in web browsers other than Internet Explorer (for example, Firefox or Chrome), access denied errors can occur if the Meridian Enterprise Server service account is not the same as the Meridian Enterprise EDM Server service account.

For more information about activating the **Enable feedback functionality** option and configuring the viewer on the feedback page, see the *Create And Edit Repository Views* article in the *Meridian Enterprise Server Administrator's Guide*.

Import And Maintain Proxy Tags

To link documents to tags using tag linking as described in Link Tags And Documents, you need to import tag numbers from the maintenance management system or other sources to create the proxy tags and maintain them in Meridian Enterprise. The proxy tags will require ongoing maintenance that involves updating the proxy tags in Meridian Enterprise when tags are deleted or changed in the maintenance management system or the physical plant so that the data remains accurate.

There are usually three possible sources for the tag numbers:

- Asset numbers stored in the maintenance management system
- Numbers provided by equipment suppliers
- Numbers generated by the engineering or maintenance departments

When importing and maintaining tag numbers, there are many issues to contend with, among others:

- What is the structure of the tag numbers? For example, is the equipment type, manufacturer, or site of the equipment encoded in the tag number?
- What is the best storage structure to use in Meridian Enterprise? Possible structures are by equipment type, by process, or by geographic location. Other structures can also be used, and more than one structure can be used.
- How are the tag numbers determined? Possible sources are: the Engineering department, the Maintenance department, or equipment suppliers. If tag numbers are generated by an internal department, a mapping between these and numbers used by equipment suppliers may be necessary.

All of these issues are closely related to the operating procedures of the organization and the asset structure in the maintenance management system. A one-size-fits-all solution cannot and does not exist. Importing tag numbers when the Meridian is deployed and maintaining the proxy tags when the system is operational require customer-specific solutions, possibly supported by specific customization.

Given these issues, the goals of any solution are to:

1. Create a list that matches documents to maintenance management system tag numbers.
2. Implement procedures to control the creation of tag numbers and propagate new tag numbers between the maintenance management system and Meridian Enterprise.

The following topics describe provide some guidelines in how to achieve these goals.

Match Tag Numbers To Documents

Technically speaking, matching tag numbers to documents involves creating and maintaining property values and references in the Meridian Enterprise vault to match tag numbers in the maintenance management system database. Because a typical plant contains tens of thousands of locations, pieces of equipment, and so on, and there may be tens of thousands of documents that describe the assets, this is not a trivial task.

Given the different perspectives of the maintenance and engineering departments, it is unlikely that they will share a common list of tag numbers. For example, the engineering department may work with vendor-supplied tag numbers, whereas the maintenance department usually uses internally-generated numbers.

To match these disparate lists, it is usually necessary to look at secondary information in the database of the maintenance management system and on the documents. Data that is potentially useful to make the matches includes:

- **Name of the manufacturer of the equipment**: Both departments will usually keep a record of this
- **Description of the asset**: Elements such as class of equipment (for example, Centrifugal Pump) and design parameters (for example, 100GPM/60FT HD that indicates capacity and total head) can significantly narrow the search
- **Serial number**: This can be related to the purchase of an individual piece of equipment and from there, to the type of equipment

How useful this data is in a particular situation depends on how your organization uses the data and how accurately it has been maintained. In the best case, a unique relationship exists. Typically, this reduces the number of possible matches to several or perhaps dozens of documents for each tag number.

Whatever the situation, the organization must have a list or database somewhere that matches tag numbers with equipment types, and equipment types to documents. Without this, no documents can be found for a specified tag number and the maintenance department could not function. In the worst-case scenario, however, this could involve searching through several sources of data.

Deploying a link between a maintenance management system and Meridian Enterprise requires careful preparation. A few example scenarios are described in the following topics to help you decide on the best approach for your situation. In each scenario, the equipment numbers are managed by the maintenance management system but the proxy tag numbers are maintained by Meridian Enterprise. The differences between the scenarios are in where the related documents reside and are managed.

When the Documents Are Linked In The Maintenance Management System

In this scenario, tag numbers are managed in the maintenance management system and the relevant documents are linked to the tags in the system. The documents reside outside the system in a network file system or other shared location.

During deployment, the tag numbers (and possibly other fields) in the maintenance management system database can be imported to create proxy tags in Meridian Enterprise. To store the proxy tags in an organized folder structure, it is most convenient to use a Field-Path definition. Tools are provided that can be configured to connect to your maintenance management system. For assistance with performing the import or implementing the entire system, contact your Accruent Solution Partner or Accruent Professional Services.

Before you import the documents that are linked to the tags in the maintenance management system, consider that several copies or different revisions of the documents could inadvertently have been linked in the maintenance management system. All duplicates need to be identified before they are imported and one of the following choices made:

- Import duplicates as separate documents
- Import duplicates as revisions of the same document
- Do not import the duplicates

It is not possible to automatically import the attached documents without errors because there is no way to automatically determine whether one document is another revision of the same document. The only sure way is for someone to view the documents. A possible way to support and manage this process is to import all of the linked documents into a temporary Meridian Enterprise vault that can be used as a staging area. In this vault, the viewing and comparison features of Meridian Enterprise can be used to inspect the documents. A workflow can be configured to manage the identification and selection of documents to import into the final vault. When the staging process is complete, the selected documents can be imported into the production vault. A custom tool may need to be built for this task.

When the system is in production, numbers for new tags (equipment, locations, and so on) can be generated by the engineering department with automation provided by Meridian Enterprise. If the maintenance management system is Maximo, the Maximo SDK can be used to create corresponding new assets in Maximo. Alternatively, a procedure can be defined to let the engineer create the new tags manually in the maintenance management system.

When the Documents Are Not Linked

In this scenario, tag numbers are managed in the maintenance management system but there are no documents linked to the tags in the system. Although related documents exist, they are unmanaged and reside outside the system in a network file system or other shared location.

The main challenge is to match the documents with the maintenance management system tags. One possible approach is:

1. Create a staging vault in Meridian Enterprise that contains proxy tags made from the maintenance management system database as described in When the Documents Are Linked In The Maintenance Management System.

   The vault will not yet contain any related documents.
2. Review the title blocks of CAD drawings and the file properties of other documents and configure the Meridian Enterprise application links to map the fields to Meridian Enterprise properties.
3. Import the unmanaged documents into the staging vault using the **Database Import Wizard** with the **Import title block data** option enabled.

   This will initialize the Meridian Enterprise properties with the title block data and file properties as the documents are imported.
4. Build relationships between the imported document property values and the proxy tag numbers imported from the maintenance management system.

   Tools are provided that operate on the Meridian Enterprise vault as described in Meridian Enterprise includes tools that you can use to import and maintain proxy tags in a Meridian Enterprise vault. The tools must be configured to suit your environment before they can be used..

When the system is in production, numbers for new tags (equipment, locations, and so on) can be generated by the engineering department with automation provided by Meridian Enterprise. If the maintenance management system is Maximo, the Maximo SDK can be used to create corresponding new assets in Maximo. Alternatively, a procedure can be defined to let the engineer create the new tags manually in the maintenance management system.

When the Documents Are In a Document Management System

In this scenario, tag numbers are managed in the maintenance management system but there are no documents linked to the tags in the system. The related documents reside in a document management system (Meridian Enterprise or otherwise) or are indexed in a standard database management system.

The documents first need to be imported into the Meridian Enterprise vault. Depending on the quality of the document metadata and how well it matches with the maintenance management system, a staging vault (as described in When the Documents Are Linked In The Maintenance Management System or When the Documents Are Not Linked) may not be necessary. If so, you can proceed directly to importing the documents with the **Database Import Wizard**. After the documents are imported, the maintenance management system tags can be imported. If a staging vault is not used, this might require a custom tool as described in When the Documents Are Linked In The Maintenance Management System.

The main challenge in this scenario is matching the maintenance management system tags with Meridian Enterprise document properties. In most cases, this requires significant manual work. This work can be supported by using custom tools that match description, site code, equipment types, and so on. Matches on these values can then be used to narrow the choice of possible proxy tags for each document.

When the system is in production, numbers for new tags (equipment, locations, and so on) can be generated by the engineering department with automation provided by Meridian Enterprise. If the maintenance management system is Maximo, the Maximo SDK can be used to create corresponding new assets in Maximo. Alternatively, a procedure can be defined to let the engineer create the new tags manually in the maintenance management system.

Meridian Enterprise includes tools that you can use to import and maintain proxy tags in a Meridian Enterprise vault. The tools must be configured to suit your environment before they can be used.

The tools can be found in the Meridian Enterprise program folder. By default, that is `C:\Program Files\BC-Meridian\Program`.

Tag Synchronizer Tool

The Tag Synchronizer tool supports the import and maintenance of assets from the database of a maintenance management system (MMS) such as Maximo or SAP Plant Maintenance into Meridian Enterprise.

The Tag Synchronizer tool supports a two-step process. In the first step, the relevant information is exported from the MMS database to an intermediate file, usually an MS Access or MS Excel table. The export can be done by calling a stored procedure in the MMS database or by another tool such as the SAP Connector described in SAP Connector Tool.

In the second step, the actual import from the intermediate file takes place. Each record in a search result is imported as one tag of the type **tagObject** in Meridian Enterprise. If a tag does not exist already, the tool will create it, if it is configured to do so. The tool does not remove tags from Meridian Enterprise if they do not exist in the intermediate file. But it is possible to configure an action that sets the status of existing tags in a Meridian Enterprise vault to **Retired**.

The Tag Synchronizer tool supports several other features:

- Mapping of metadata from the MMS to Meridian Enterprise tag properties
- Running the tool in unattended mode from a command line without displaying a user interface
- Only updating existing tags, without creating them in the vault if they do not exist
- Only importing non-existing tags, without modifying existing tags
- Retiring tags, instead of importing (or updating them)
- Sequential import of tags from the last import date
- Adding content to the tags imported
- Setting or updating a revision number for the tags processed
- Specifying the folder location of the imported tags
- Sending an email notification in case of errors
- Log files for showing import details and error information
- Updating the intermediate file with the result of the import or retirement actions

After importing assets, it might be necessary to create references between documents in Meridian Enterprise and the tags. A second tool named Tag Link Synchronizer is provided for this purpose and is described in Tag Link Synchronizer Tool.

When Tag Synchronizer is started without command line arguments, the tool starts in interactive mode.

The tool is configured as described in Configure Tag Synchronizer.

Configure Tag Synchronizer

The behavior of Tag Synchronizer can be configured on the **Edit Configuration** and **Meridian Cloud** tabs.

After import, the import date and results are recorded in a text file and will be used in the next import. The name of the text file is `Lastimport-<ConfigurationFileName>.log`. The file will be located in the same folder as the application. If a mapped property is a part of the Field-Path definition, invalid characters **\ / : * ? " < > |** appearing in the value are replaced by an underscore character **_**.

The options that are saved in the configuration file are summarized in the following sections.

If you encounter SQL authentication errors when using this tool, you may need to install the Microsoft OLE DB Driver version 18 or 19 for SQL.

ExportDB section

Tag Synchronizer configuration settings

Setting	Description	Default	Remarks
Command	Stored procedure name in the maintenance management system database.	None	Optional
Connection string	Connection string to the maintenance management system database where the stored procedure exists.	None	Optional

VaultInfo section

Tag Synchronizer configuration settings

Setting	Description	Default	Remarks
DatastoreName	Datastore name of the destination vault.	None	Required
MachineName	EDM Server service computer name.	None	Required
RootFolder	Root folder in Meridian Enterprise for creating the tags.	\	Required
TagDocExt	Meridian Enterprise extension of the imported tag.	.object	Required

Setting	Description	Default	Remarks
TagDocType	Meridian Enterprise document type of the imported tag.	tagObject	Required
TagIDProperty	Meridian Enterprise property to be used to uniquely address a tag in the vault. If not configured then the display name is used. Invalid characters **\ / : * ? " < > |** appearing in the value are replaced by an underscore character **_**	None	Required
VaultName	Name of the Meridian Enterprise destination vault.	None	Required

Config section

Tag Synchronizer configuration settings

Setting	Description	Default	Remarks
AddressSMTPServer	Address of an SMTP server for sending email messages.	None	Optional
LogDirectory	Folder for storing the log files.	None	Optional
LogErrorDirectory	Folder for storing the error log files.	None	Optional
LogErrorEmail	Email address for reporting errors.	None	Optional

ImportDB section

Tag Synchronizer configuration settings

Setting	Description	Default	Remarks
ActionAdd	Semicolon separated list of strings that trigger an import action.	None	
ActionField	Column in the intermediate file that specifies the action to be taken. If no action is specified, then the application will import tags instead of retire them.	None	Optional

Setting	Description	Default	Remarks
ActionRetire	Semicolon separated list of strings that trigger a retire action.	None	
ConnectionString	Connection string to the maintenance management system database from which to import tags. This setting may contain **%1** as a placeholder for the intermediate filename. If so, then the user interface dialog will provide the option to specify the name manually. Do not use this feature when running in unattended mode.	None	Required
DatabasePath	Path to the exported intermediate file.	None	Required
Field<*X*>	A column in the intermediate file to map to the corresponding Meridian Enterprise property specified in **Property<*X*>**. Possible formats include: Field<*X*>=<*ColumnName*>, <*Size*> Field<*X*>=//<*Value*> Where <*ColumnName*> is the name of a column in the intermediate file, <*Value*> is a fixed value to use and <*Size*> is an optional integer to restrict to a number of characters.	None	
ImportDBFieldName	Column in the intermediate file that specifies the name of the imported tag.	None	Required
ImportPathField	Path to a content file to import for a new tag. Not applicable to existing tags.	None	Optional
NumFields	Number of additional properties to map. Ensure that at least a mapping between **TagIDProperty** and **ImportDBFieldName** exists.	N	
Property<*X*>	Meridian Enterprise property to map to the corresponding intermediate file column **Field<*X*>**. The value is must contain both the Meridian Enterprise property set name and the property name in the format <*PropertySet*>.<*PropertyName*>.	None	

Setting	Description	Default	Remarks
ResultFail	Message to insert in the column specified by **ResultField** if the import or retire action fails.	None	
ResultField	Column in the intermediate file for displaying the result of the action.	None	Optional
ResultOK	Message to insert in the column specified by **ResultField** if the import or retire action succeeds.	None	
SelectionCommand	SQL SELECT statement for the intermediate file. The value can contain a placeholder {0} for the modification date time. See also **SkipModifiedArgument.**	None	Required
SkipExisting	Imports only new records.	0	Optional
SkipHeaderRecords	Integer value specifying the number of header records in the result set to be ignored.	0	Optional
SkipModifiedArgument	If **True**, the statement in **SelectionCommand** is expected to not contain a placeholder for the modification date and time, and the application expects a query that needs a modification date as an input parameter. This date should have the format **YYYY/MM/DD HH:MM:SS**. For example: Select * FROM *<ImportDatabase>* Where *<ModificationDate>* =%1 Where *<ImportDatabase>* is the name of the import database and *<ModificationDate>* is the date of the modification.	False	Optional
SkipNonExisting	Only synchronizes existing tags.	0	Optional
SubFolderField	Column that contains a subfolder path where to import tags. Invalid characters **\ / : * ? " < > |** appearing in the value are replaced by an underscore character **_**	None	Optional

Setting	Description	Default	Remarks
SubFolderFieldIsParent	Boolean value that specifies how to interpret the **SubFolderField** setting. Set to **True** if **SubFolderField** specifies the parent folder of the imported tag. Set to **False** if **SubFolderField** specifies the path to the tag (including the tag name). In that case the tag name is stripped from the value.	True	Optional
VersionField		None	Optional

Tag Link Synchronizer Tool

The Tag Link Synchronizer tool creates references between tags and documents in a Meridian Enterprise vault. You may want to consider whether using an import package would better meet your needs before using the Tag Link Synchronizer tool. To learn how to create an import package, see *Create an Import Package* in the *Meridian Enterprise Server Administrator's Guide*.

The Tag Link Synchronizer tool supports a two-step process. In the first step, the tags are created in the vault such as by Tag Synchronizer as described in Tag Synchronizer Tool. In the second step, you use Tag Link Synchronizer to create the references. Each record in a search result from an intermediate file is processed and creates one or more references. The tool expects the file to have at least two columns: one column that contains tag names and one column that contains related document names. The tool does not create tags in Meridian Enterprise nor does it delete existing references.

The Tag Link Synchronizer tool supports several other features:

- Running the tool in unattended mode from a command line without displaying a user interface
- Sequential update of references from the last import date
- The reference type and direction can be configured
- Sending an email notification in case of errors
- Log files for showing import details and error information

When Tag Link Synchronizer is started without command line arguments, the application starts in interactive mode. The application is configured as described in Configure Tag Link Synchronizer .

Configure Tag Link Synchronizer

The behavior of Tag Link Synchronizer can be configured on the **Edit Configuration** tabs.

You may want to consider whether using an import package would better meet your needs before using the Tag Link Synchronizer tool. To learn how to create an import package, see *Create an Import Package* in the *Meridian Enterprise Server Administrator's Guide*.

Use Import Packages when you use the API to import assets.

After import, the import date is recorded in a text file and will be used in the next import. The name of the text file is `Lastimport-<ConfigurationFileName>.log`. The file will be located in the same folder as the application.

Edit Configuration Tab

The options that are saved in the configuration file are summarized in the following table.

Tag Link Synchronizer configuration settings

Section	Setting	Description	Remarks
ExportDB	Command	Stored procedure name in the maintenance management system database	Optional
ExportDB	Connection string	Connection string to the maintenance management system database where the stored procedure exists.	Optional
VaultInfo	DatastoreName	Datastore name of the destination vault	Required
VaultInfo	DocProperty	Meridian Enterprise property that contains the unique identifier to match with the tag (**TagProperty**). Typically, this is the name of the document.	Required
VaultInfo	MachineName	EDM Server service computer name	Required
VaultInfo	TagProperty	Meridian Enterprise property that contains the unique identifier to match with the document (**DocProperty**). Typically, this is the name of the tag.	Required
VaultInfo	TagRefType	Meridian Enterprise reference type with which to link the tag to the document.	Required

Section	Setting	Description	Remarks
VaultInfo	ReferenceDirexction	Direction of the reference to be created: **incoming** (from tag to document) or **outgoing** (from document to tag).	Required
VaultInfo	VaultName	Name of the Meridian Enterprise destination vault	Required
Config	AddressSMTPServer	URL of an SMTP server through which to send notification emails.	Optional
Config	LogDirectory	Folder for storing the error log files	Optional
Config	LogErrorEmail	Email address to which to send notification emails	Optional
ImportDB	ConnectionString	Connection string to the intermediate file that contains the tag and document names to link. This setting may contain **%1** as a placeholder for the intermediate filename. If so, then the user interface dialog will provide the option to specify the name manually. Do not use this feature when running in unattended mode.	Required
ImportDB	DatabasePath	Path to the intermediate file.	Required
ImportDB	SelectionCommand	SQL SELECT statement for the intermediate file. The value can contain a placeholder {0} for the modification date time. See also **SkipModifiedArgument**	Required
ImportDB	SkipHeaderRecords	Integer value specifying the number of header records in the result set to be ignored. The default is **0**.	Optional

Section	Setting	Description	Remarks
ImportDB	SkipModifiedArguments	If True, the statement in **SelectionCommand** is expected to not contain a placeholder for the modification date and time. The default is **False**. If the **SkipModifiedArguments** setting is **True**, then the application expects a query that needs a modification date as an input parameter. This date should have the format YYYY/MM/DD HH:MM:SS. For example: Select * FROM *<ImportDatabase>* Where *<ModificationDate>* =%1 Where *<ImportDatabase>* is the name of the import database and *<ModificationDate>* is the date of the modification.	Optional
ImportDB	RefNameField	Column in the intermediate file that specifies the name (type) of a created reference.	Optional
ImportDB	TagField	Column in the intermediate file that specifies a unique reference to one or more existing tags. Values must be separated by the value of **Separator**.	Required
ImportDB	DocField	Column in the intermediate file that specifies a unique reference to one or more existing documents. Values must be separated by the value of **Separator**.	Optional
ImportDB	Separator	The character that separates the values provided in **TagField**. The default is the semicolon character (;).	Optional

SAP Connector Tool

The Meridian Asset Management SAP Connector is a stand-alone tool that you can use to automate the export of functional location and equipment data out of SAP Plant Maintenance for use with Meridian Enterprise. The SAP Connector stores the exported data in a Microsoft Access database where it can be used as the source for importing the data into a Meridian Enterprise vault as proxy tags. The Tag Synchronizer and Tag Link Synchronizer tools that are installed with the Meridian Enterprise can be used to import the data.

The source system, item filters, which items to export, and output path are configurable and can be saved to separate files for specific purposes and reused. The tool can be run either interactively or from a command line as a scheduled task to keep the Meridian Enterprise vault synchronized. Detailed log files are created for each export and tool status events are logged for viewing with the Windows Event Viewer.

The SAP Connector has been certified by SAP to follow SAP standards for technical integration and can allow for upgrades with minimal interruptions.

Installing, configuring, and running the SAP Connector are described in the following topics.

Create And Edit an Export Configuration

The Meridian Asset Management SAP Connector can work with multiple export configurations that are each stored in separate files.

Each export configuration comprises:

- SAP Plant Maintenance server connection parameters
- Item filter parameters
- Output destination parameters

You can create and load export configuration files from within the SAP Connector user interface.

Create New Export Configuration

1. Start `C:\Program Files\BC-Meridian\Program\SAP AMM Connector\BlueCieloECM.SAPInfoConnector.exe`.

   The **Accruent SAP Connector** window opens.

2. On the **File** menu, click **New config**.

   The **Settings** dialog box appears.

3. Click options or type values using the descriptions in the following table.

Export configuration options

Group	Option	Description
Filtering	Export Functional Locations	Always set to **True** to include functional location items in the export.
Filtering	Export Equipment	Always set to **True** to include equipment items in the export.
Filtering	Date modified after	The date after which the modified items will be included in the export. Leave empty to include items with any dates. This option has no effect if **Incremental update** is set to **True**.
Filtering	Functional location starts with	The beginning characters of the identifiers of the functional locations to include in the export.

Group	Option	Description
Filtering	Extra conditions	Additional filter conditions separated by AND or OR. Each condition must contain a column name in SAP Plant Maintenance, an operator abbreviation, and the value to match surrounded by single quotation marks ('). The supported operator abbreviations are listed in the following list. Use the tilde (~) character to break up expressions longer than 70 characters. • **EQ**: Equals • **LT**: Less than • **LE**: Less than or equals • **LIKE**: Like • **GT**: Greater than • **GE**: Greater than or equals • **NE**: Not equals Example of a short expression: IWERK EQ '1000' OR IWERK NE '' Example of a long expression: WERK LIKE '12%' AND ERDAT LT '20120501' ~ AND AEDAT LT '20120501'
Import Parameters	Incremental update	Set to **True** to include only matching items that have been modified since the date in **LastSuccessfulImport**. Set to **False** to export all matching items.
Import Parameters	LastSuccessfulImport	The date and time of the last successful export. This can also be manually reset in the configuration file (for example, 0001-01-01T00:00:00 or 2015-09-03T14:45:21.498+02:00).
Source SAP System	Application server	The URL or IP address of the SAP Plant Maintenance server from which to export items.
Source SAP System	System number	The number of the SAP Plant Maintenance instance from which to export items.
Source SAP System	System ID	The system ID of the SAP Plant Maintenance instance from which to export items.
Source SAP System	Client	The code of the client context from which to export items.
Source SAP System	Language	The language with which to connect to the SAP Plant Maintenance server.

Group	Option	Description
Source SAP System	User name	The SAP Plant Maintenance account name with which to connect to the SAP Plant Maintenance server.
Source SAP System	Password	The password for the account specified in **User name**.
Source SAP System	Confirm password	The password for the account specified in **User name**.
Source SAP System	Pool size	The number of concurrent connections to use to the SAP Plant Maintenance database. The default is **1**.
Target Database	ExportDBFilename	The fully-qualified path and filename of the Microsoft Access database to which to save the exported items. The substitution variable `%1` may be specified to pass the filename as a parameter in the command line.

Edit Existing Export Configuration

1. Start `C:\Program Files\BC-Meridian\Program\SAP AMM Connector\BlueCieloECM.SAPInfoConnector.exe`.

   The **Accruent SAP Connector** window opens.
2. On the **File** menu, click **Open**.

   The **Open Import Settings File** dialog box appears.
3. Select the export configuration file (`*.sapexp`) that you want to edit and then click **Open**.

   The configuration file is loaded.
4. On the **Tools** menu, click **Settings**.

   The **Settings** dialog box appears.
5. Click options or type values using the descriptions in the above table.
6. Click **OK**.

Save Export Configuration as a Different File

1. On the **File** menu, click **Save As**.

   The **Save Export Settings File** dialog box appears.
2. Modify the file name and click **Save**.

Run And Stop an Export Interactively

Run Meridian Asset Management SAP Connector interactively when you want to:

- Create or modify export configurations using the SAP Connector user interface
- Open and preview an export configuration before you run an export
- Run an export immediately for testing

Run Export Interactively

To run an export interactively:

1. Start `C:\Program Files\BC-Meridian\Program\SAP AMM Connector\BlueCieloECM.SAPInfoConnector.exe`.

   The **Accruent SAP Connector** window opens.
2. On the **File** menu, click **Open**.

   The **Open Export Settings File** dialog box appears.
3. Select the export configuration file (`*.sapexp`) that you want to use and then click **Open**.

   The configuration file is loaded.
4. On the **Tools** menu, click **Run**.

   The **Import in progress** dialog box appears.

   The dialog box updates dynamically to show:

   - The quantity of each item type found that match the filter conditions specified in the export configuration file
   - The quantity of each item type exported
   - The address of the SAP Plant Maintenance that is connected
   - The elapsed time of the export
   - The estimated time remaining to complete the export

   > **Note:**
   > The performance of the export is significantly affected by the proximity of the computer running the tool to the SAP server. Maximum performance is approximately 50 items exported per second. If the elapsed time to complete the export is unacceptable, consider refining the filter conditions to be more specific as described in Create And Edit an Export Configuration.

When the export is finished, the **Import in progress** dialog box disappears and the exported data appears in the **Accruent SAP Connector** window for viewing. The functional locations appear in the left pane and the equipment items in the right pane. A log file of all activity named `SapExport-<Date>.log` is saved in the current folder for review and troubleshooting. If the log file already exists, a numeric postfix is appended to the extension, for example, `SapExport-<Date>.log.1`.

Stop Export

To stop an export immediately:

- Click the **Abort** button in the **Import in progress** dialog box.

Run an Export From a Command Line

Run Meridian Asset Management SAP Connector from a command line when you want to:

- Test command line parameter values for use in a batch file or scheduled task
- Include an export in a batch file with other commands like running the Meridian tag synchronization tools
- Schedule an export to occur automatically on a periodic basis to maintain synchronization of a Meridian Enterprise vault with SAP Plant Maintenance. The command line can be used in Windows Task Scheduler.

Syntax

`"<Path>\BlueCieloECM.SAPInfoConnector.exe"`
`"<ConfigurationFilePath>" "[<OutputFilePath>]"`

By default, the SAP Connector files are installed in `C:\Program Files\BC-Meridian\Program\SAP AMM Connector`.

If <*OutputFilePath*> is omitted and is not specified in the configuration file, a default file name is assigned (for example, `flocs_and_equi_since_00010101_at_2015-09-04-13-20-17.mdb`), and the file is stored in `C:\Temp`.

The **Import in progress** dialog box appears on screen during processing similar to when the tool is run interactively as described in Run And Stop an Export Interactively.

Returns

When the tool exits normally, it sets the **ERRORLEVEL** environment variable to **0** if the export finished without errors or to **1** if the exported failed. Your batch file can test the returned value and act accordingly.

Exported Data

The data that is output from SAP Connector is saved in a Microsoft Access database with the name as specified in the export configuration described in Create And Edit an Export Configuration. The export file is overwritten each time the tool is run with the same export configuration file.

The database contains two tables:

- **Equipment**: Items exported from SAP if the **Import Equipment** option is **True** in the export configuration
- **FunctionalLocations**: Items exported from SAP if the **Import Functional Locations** option is **True** in the export configuration

Each table contains the following columns by default. These are also included in the table template **BlueCieloSAPInitial**:

- All columns that are available with the connection parameters that are specified in the export configuration file.
- Ten additional columns (**NAVLEVEL_0**, **NAVLEVEL_1**, and so on) that contain the codes for each level of the plant breakdown structure for each item. These are calculated from the values in the **FUNCTIONAL_LOCATION** column. These columns can help to organize and identify the items when they are imported as proxy tags into the Meridian Enterprise vault.
- Ten additional columns (**DESCLEVEL_0**, **DESCLEVEL_1**, and so on) that contain the descriptions of each level in the plant breakdown structure for each item. These are for ease of identifying the plant breakdown structure levels in the Meridian Enterprise vault.

Example Files

The Meridian Asset Management SAP Connector includes example files that demonstrate a 3-step process to export assets out of SAP and import them to a Meridian Enterprise vault. You can use these files as templates to create your own files to work in your environment and meet your requirements. They are not intended to be a complete solution for production use. They are only examples to help you get started. Additional steps, configuration changes, and additional tools may be needed. For expert assistance, contact Accruent Professional Services.

Steps in Process

The steps in the process are:

1. Use the SAP Connector to export the equipment and functional locations from SAP to a temporary Microsoft Access database.

   An example configuration file `Initial_Export_Meridian.sapexp` is provided and must be modified with your own settings as described in Create And Edit an Export Configuration.

2. Use the AMMTagSynchronizer tool to import the equipment and functional locations from the Access database into a Meridian Enterprise vault.

   Example configuration files `TagSynchFLOC_DESC.ini` and `TagSynchEQUI_DESC.ini` are provided and must be modified with your own settings as described in Configure Tag Synchronizer.

3. Use the AMMTagLinkSynchronizer tool to create the references between the equipment and functional locations in the Meridian Enterprise vault.

   Example configuration files `TagLinkSynchFLOC.ini`, `TagLinkSynchFloc2Equi.ini`, and `TagLinkSynchEqui2Equi.ini` are provided and must be modified with your own settings as described in Configure Tag Link Synchronizer . This step is optional.

Each of the steps is performed by the example batch file `SAP_Initial_Export_Meridian.bat`. View the file for details.

> **Note:**
> - The example files assume the Meridian Enterprise vault uses the Accruent Industry Template.

- The following tasks assume that Meridian Enterprise is installed in the default location. Adjust the paths accordingly in `SAP_Initial_Export_Meridian.bat` for your environment.

Install Example Files

To install the example files:

- Extract the contents of `C:\Program Files\BC-Meridian\Program\SAP AMM Connector\SAP Link.zip` to a new folder (`C:\SAP Link` is used in the example files).

Perform Complete Export / Import Process

To perform the complete export/import process:

- Run `SAP_Initial_Export_Meridian.bat`.

Troubleshoot Problems

To troubleshoot problems:

- Review the log files in `C:\SAP Link\FLOCLogs`.

Required Vault Objects

Meridian requires numerous vault objects that should be reserved for asset management unless otherwise stated in this guide. You must manually create the objects listed in the following table. For details on creating the objects, see the related topics in this guide.

Note:

- The internal names of the objects are recommended only and may be changed. Similarly, their **Display Name** properties may be whatever you want to meet your requirements.
- Because the properties listed may not be applicable to every organization, they are not presented on property pages supplied with Meridian. You must create your own property pages to display the properties that your organization will use or add the properties to existing property pages.

Vault objects

Internal Name	Type	Description
TagObject	Document Type	Used for proxy objects in the vault that represent assets managed in a maintenance management system. A pre-existing document type may be used as described in Configure the Document To Tag Relationships .
TagObjectReference	Reference Type	Used to relate vault documents to proxy objects in the vault. A pre-existing reference type may be used as described in Configure the Document To Tag Relationships .
Custom.ChangeManagementDateEntered	Date property	The date and time when the last remark about the document was typed or changed from within the maintenance management system.
Custom.ChangeManagementEnteredBy	String property	The full name of the user's Windows account that last typed change request information in the maintenance management system.
Custom.ChangeManagementRemarks	Memo property	The remarks typed by a user in the maintenance management system.

Internal Name	Type	Description
Custom.ChangeManagementRequestType	String property	The type of change request selected in the maintenance management system. The possible values for this property are maintained in the lookup list **Request Type**.
Custom.StatusMaintenancePreferred	Boolean property	Specifies that the document has been selected as preferred in the maintenance management system.
Custom.StatusPublished	Boolean property	Makes the document visible in the maintenance management system. **Note:** Set this property to **True** in the vault's event handlers when the document is released in Meridian Enterprise.
Custom.StatusCanBeDownloaded	Boolean property	Specifies that the document can be downloaded from the maintenance management system. **Note:** Set this property to True in the vault's event handlers when the document is released in Meridian Enterprise.
RequestType	Lookup list	Contains the possible change request types that can be selected in the maintenance management system. Create entries that meet your organization's requirements.
ObjectFPRvalues	Lookup list	Contains all possible values of the property that is selected for the **Object indication property** option as described in Configure the Document To Tag Relationships . This lookup list is only needed if Meridian Explorer is used and if the **Object indication property** option is set to a property that is part of the Field-Path definition.

Sequence Numbers

Sequence numbers are series of sequential numbers sometimes used as parts of naming standards. They can be used for file names, document names, drawing numbers, project numbers and other properties. Each sequence of numbers has a name by which it can be manipulated and a current value. The value of a sequence may be changed but its name may not be changed. For information about using sequence numbers for file names (the same principles apply to other properties as well), see File Name Calculation.

> **Note:**
> Sequences may not be deleted from a vault but they occupy a negligible amount of space. However, since sequence names cannot be reused, choose them carefully so that they remain applicable for the life of the vault. We recommend using a naming standard for sequences just as you would for any other vault objects.

Sequence numbers can be created, incremented, and reset using VBScript as described in the *Sequence Object* article in the *Meridian Enterprise VBScript API Reference*. But they can also be managed without VBScript programming with the Accruent Sequence Number Manager, which is a stand-alone tool program included with Meridian Enterprise. By default, the Accruent Sequence Number Manager (`BCSequenceManager.exe`) is installed in `C:\Program Files\BC-Meridian\Program`.

To use the Accruent Sequence Number Manager, you must have the **Advanced Document Properties** privilege for the folder for which you want to use the program.

The Accruent Sequence Number Manager supports managing sequence numbers for folders only. Sequence numbers for vault, folder type, and document type objects must be managed with VBScript.

The following topics describe how to manage sequence numbers with the Accruent Sequence Number Manager.

View Sequence Numbers

You can view sequence numbers with the Accruent Sequence Number Manager to see what the highest used sequence number is for a selected folder.

View Sequence Numbers

To view sequence numbers, open Accruent Sequence Number Manager.

- If you have used the program before, the existing sequences and their corresponding values for the last folder that you viewed are shown.
- If you have not opened the program before, a message appears stating that a default vault could not be initialized. This is normal.

  To continue:

  1. Click **OK**.

     The **Open Vault** dialog box appears.
  2. Select the vault for which you want to view sequence numbers and click **OK**.

     The dialog closes and the existing sequences for the vault root are shown, if any.

View Sequence Numbers for a Different Folder

To view the sequence numbers for a different folder:

1. In Accruent Sequence Number Manager, click **Browse**.

   The **Select Folder** dialog box appears.
2. Select the folder that you want to view and click **OK**.

   The dialog box closes and the existing sequences for the selected folder are shown, if any.

View Sequence Numbers for a Different Vault

To view the sequence numbers for a different vault:

1. In Accruent Sequence Number Manager, in the status bar at the bottom of the window, click the server name or vault name panel.

   The **Open Vault** dialog box appears.

2. Select a different server or vault and click **OK**.

   The dialog box closes and the existing sequences for the selected vault are shown, if any.

Create And Edit Sequence Numbers

Sequence names must be unique for each folder and may not contain spaces or illegal characters. They can be repeated in other folders although we do not recommend it. Sequence numbers may be positive or negative integers (Long data type) but negative numbers are not very useful.

> **Note:**
> The Accruent Sequence Number Manager does not prevent skipping sequence numbers and it keeps no record of unused numbers. Similarly, the **Sequence** object methods in VBScript do not check for unused numbers. Functions similar to these must be implemented with custom programming or other methods.

Create a Sequence Number

To create a sequence number:

1. In Accruent Sequence Number Manager, view the sequences as described in View Sequence Numbers for the folder where you want to create the number sequence. Ensure that the sequence does not already exist.
2. Click **New**.

   The **New Sequence** dialog box appears.
3. Type the sequence name in the text box and click **OK**.

   The dialog box disappears and the new sequence appears in the list. The default value of new sequences is **0**.

Edit a Sequence Number

- The Accruent Sequence Number Manager does not check whether sequence numbers have already been used anywhere in the vault. If you edit a sequence number to a lower value, that value may already be used and could result in duplicate names for the objects with which it is used. You should be certain that a sequence number is not already used before setting the same value.
- Using the vault name as a sequence name can cause errors and possibly crash the Meridian EDM Server service.

To edit a sequence number:

1. In Accruent Sequence Number Manager, view the sequences as described in View Sequence Numbers for the folder where you want to edit a sequence.
2. Select the sequence that you want to edit and click **Change**.

   The **Change Sequence Number** dialog box appears.
3. Type the new sequence value in the text box and click **OK**.

   The dialog disappears and the new sequence value appears in the list.

Export and Import Sequence Numbers

Sequence numbers can be an important part of a vault's configuration but the numbers are not exported with the configuration as described in Exporting configuration data. To transfer or migrate sequence numbers to a different server or vault, you must do so manually by exporting the numbers from the source vault and importing them into the destination vault. The Accruent Sequence Number Manager transfers sequence numbers using XML files.

Export Sequence Numbers

To export sequence numbers:

1. In Accruent Sequence Number Manager, view the sequences for the folder in the source vault that you want to export as described in View Sequence Numbers.

   To export sequence numbers for the entire vault, view the vault's root folder.
2. Choose between two options:
   - To export sequence numbers for just the current folder, click **Export**.
   - To export sequence numbers for the entire vault, click **Export All**.

     The **Save File** dialog box appears.
3. Select a convenient location for the file and click **Save**.

   A confirmation dialog box appears and shows the path to the saved file.
4. Click **OK**.

   The confirmation dialog closes.

Import Sequence Numbers

To import sequence numbers:

1. In Accruent Sequence Number Manager, view the sequences for the folder in the destination vault where you want to import the numbers as described in View Sequence Numbers.

   To import sequence numbers for the entire vault, view the vault's root folder. Ensure that the sequence numbers that you intend to import do not already exist or verify that they can be overwritten.
2. Choose between two options:

- To import sequence numbers for just the current folder, click **Import**.
- To import sequence numbers for the entire vault, click **Import All**.

  The **Open File** dialog box appears.

3. Select the XML file that contains the sequence numbers that you want to import and click **Open**.

   The sequence numbers are imported and a confirmation dialog box appears that shows the path to the file that was imported.

4. Click **OK**.

   The confirmation dialog closes. The sequence number list updates to show the imported sequence numbers.

Glossary

A

Active Directory

A Microsoft directory service that provides central authentication and authorization services for Windows-based computers.

AMFS

The InnoCielo File System service that makes vaults available through the Windows file system.

approved

A workflow status that indicates that a document that has been approved for reproduction, distribution, manufacture, or construction.

archive

When used as a noun, a repository of obsolete documents kept for possible future reference. When used as a verb, the process of exporting obsolete documents from a repository.

assign to work area

The process of creating a copy of a document in a work area to isolate its changes from the original revision in the Main area.

attribute

When used to describe a file system, it is a property of a file such as Hidden, System, or Read Only. When used to describe an AutoCAD drawing, a named object in a drawing that is included in a block definition and used to store alphanumeric data.

audit log

A system-generated record of the date and time of user actions that create, modify, or delete critical business data.

audit trail

A system-generated record of the date and time of user actions that create, modify, or delete critical business data.

authorization key

The ten character hexadecimal code generated by BlueCielo ECM Solutions that authorizes a software license indefinintely. Authorization keys are generated based on

the license serial number, license key, and return key specific to each installation.

B

baseline

When used to describe Meridian Enterprise, a named moment in time in the history of a vault, such as a milestone.

Basic Authentication

A method designed to allow a web browser, or other client program, to provide credentials – in the form of a user name and password – when making a request from a server.

briefcase

An Accruent portable document package. A briefcase is a single file in an archive format that may contain multiple discrete documents. Briefcases may be in open standard formats such as ZIP and RAR, the Accruent BRC format, or custom formats. A briefcase may also contain document metadata in a data file and, in the Accruent BRC format, document redlines.

C

client

A computer, object, or program that obtains data or services from a server.

COM

Component Object Model - an interface standard for software componentry by Microsoft used to enable interprocess communication and dynamic object creation by programs.

content

The electronic data associated with a document.

content indexing

The process of extracting and indexing text data from documents for full-text searching. See also "full text search".

context

When used to describe Meridian Enterprise, a frame of reference comprised of a specific compartment of a vault and a moment in time for viewing the content of a vault.

criterion

A search filter condition comprised of a property name, operator, and value.

current

In general, the object that a user has selected or an object that is currently within the scope of a programming expression. When used to describe the history of a document, the latest revision of a document, which might not yet be released.

D

data source

An external data file or database that provides data that is presented by or imported into a Accruent system.

database

A structured set of document metadata used by a Accruent system. The database may be managed by Hypertrieve, SQL Server, or Oracle depending on the system.

DB

An Oracle database.

DCOM

Distributed Component Object Model - a Microsoft proprietary technology for software components distributed across several networked computers to communicate with each other.

derive

To create a new document based on an existing document. Also the name of a Meridian Enterprise command.

destination state

The state of a Meridian Enterprise workflow that follows a workflow transition.

details page

A type of property page that displays the properties of a document.

digital signature

A digitized image of a person's handwritten signature. See also "electronic signature".

discard

When used to describe Meridian Enterprise, to cancel the process of revising a document and delete the file copy that is being edited.

document

Information recorded on a medium (paper, digital media, and so on) for communication to others.

document controller
A person within a facility owner/operator organization that is responsible for the management of project documents.

document type
A classification of documents that share one or more document management characteristics such as format, purpose, or security.

document type workflow
A predetermined sequence of steps through which a document must be processed to generate a new approved revision in Meridian Enterprise. The workflow is defined by the document type from which the document was created.

document view
A view of a Meridian Explorer repository that displays documents.

document workflow interlock
A rule consisting of specific document types and property filters that limit when a project's workflow may proceed. Interlocks are configured by a System Administrator with the Meridian Enterprise Configurator application. Interlocks are available only with the Meridian Advanced Project Workflow Module.

domain controller
A server that responds to security authentication requests (logging in, checking permissions, and so on) within a Windows Server domain.

dynamic collection
A Meridian Enterprise saved search in which the search criteria are reevaluated and the results are updated whenever the collection is displayed.

E

e-signature
An electronic indication that a person adopts the contents of an electronic message. See also "digital signature".

ECM
Engineering Content Management. Content management as it applies specifically to engineering.

EDM
Engineering Document Management. Document management as it applies specifically to engineering documents.

effectivity
An attribute of a Meridian Enterprise property that determines when changes to its value apply within the life cycle of a document.

electronic signature
An electronic indication that a person adopts the contents of an electronic message. See also "digital signature".

environment
An organization's overall computing platform.

Explorer view
The view of a Meridian vault that displays documents organized within the Field-Path Relation.

external page
A type of property page that displays a web page that is hosted on a different information system.

F

Field-Path Relation
A hierarchical structure defined by properties that determines the folder structure of a vault and the locations of documents according to the values of the properties.

Folders view
The view of a Meridian Enterprise vault that displays documents organized by the vault's Field-Path definition.

FS
An acronym for file system.

full-text search
A method of searching for text contained in document content as opposed to searching document metadata. See also "content indexing."

G

grid view
Name of a Meridian Explorer view mode that displays search results in tabular format.

GUID
An acronym for Globally Unique Identifier.

H

history

A configurable option of a Meridian vault that causes it to save changes to documents and metadata over time. Allows users to view prior revisions of documents and their property values at specific moments in the past.

History mode

A configurable option of a Meridian vault that causes it to save changes to documents and metadata over time. Allows users to view prior revisions of documents and their property values at specific moments in the past.

HTTP

An acronym for Hypertext Transfer Protocol.

hybrid drawing

A drawing composed of both vector graphics and raster image files.

I

import

The process of creating a new file in a vault from a file outside the vault or repository .

inactive user

A user account that has been deactivated. The account is not deleted but the user cannot use the application. The account can be reactivated later.

initiate

The act of starting a new revision of a document by performing the first step of a workflow.

issue code

The name of a Meridian Transmittal Management Module property that stores a standard keyword or phrase. The issue code describes the reason why a transmittal was issued.

L

layout

A configurable arrangement of items on a form or page.

LDAP

An acronym for Lightweight Directory Access Protocol.

Local Workspace

A portion of disk space on a user's computer reserved for caching documents when they are viewed or edited. Using Local Workspace improves performance when working with very large documents. Meridian Enterprise's local workspaces can be synchronized with the vault at a configurable interval.

lookup list

A list of predetermined values for a property that is presented to the user for selection. Lookup lists can be either managed in the application or linked to an external database or query.

M

Main area

The area of a Meridian vault where released documents reside.

manager

The Meridian user who initiated the current document workflow and the only person with permission to change the current To-Do Person.

master document

In Meridian Enterprise, a released document from which one or more project copies are made that become either independent documents or new revisions of the master document. Master documents are designated by Meridian Enterprise and the Meridian Advanced Project Workflow Module. In Accruent Project Portal, a document to which a master file is attached.

Meridian Enterprise Server application server

The Meridian Enterprise Server data access and business services running on a server computer. May also be used to refer to the server hosting the services.

Meridian Explorer client

The Meridian Explorer application installed on the Meridian Enterprise Server web server.

metadata

Information that classifies, supplements, or describes a document. Metadata is commonly used to find documents as opposed to searching for data within documents (see “full-text search”). Metadata may also be used for a variety of other purposes.

N

NAT

An acronym for Network Address Translation.

Navigation view

A view of a Meridian vault that displays documents organized in a hierarchical structure according to a predefined set of properties.

O

OS

An acronym for operating system.

OU

An acronym for organizational unit.

P

package

A set of files that are used together for a common purpose. The files are often bound together in a single archive file for convenience when transporting, such as .zip and .msi files. Examples of file packages are software distribution packages and submittal packages. See also “briefcase.”

pane

A separate area of a split or single window used to display related data.

performance counter

Stores the count of specific program activities on a computer to conduct low-level performance analysis or tuning.

PowerUser

The Meridian desktop client software. Not related to the Windows administrative group Power Users.

PowerWeb

The Meridian Enterprise web browser-based client application.

preselection

A property filter that can be applied to a Meridian Explorer view to limit the number of visible items.

privilege

The right of a user to view specific data or execute a specific command. Privileges are assigned by a System Administrator.

project copy

A copy of a master document made for the purpose of creating a new independent document or creating a new revision of the master document. Project copies can be created in Meridian Enterprise.

project definition

A template used to create special folders in a vault that can represent design project processes. Project definitions are configured by a System Administrator with the Meridian Enterprise Configurator application. Meridian Advanced Project Workflow Module project definitions consist of a custom folder type, a workflow, and optional project workflow interlocks or document workflow interlocks. A project definition may restrict folders from being created at the root of a vault and may restrict creation of subprojects (Meridian Advanced Project Workflow Module only).

project folder

A folder created from a project definition template.

project workflow

The workflow of a project folder as defined by the project definition template from which it was created. Configured by a System Administrator with the Meridian Enterprise Configurator application.

project workflow interlock

A rule comprised of specific sub-project folder types and property filters that is applied to a project or subprojects that limits when a project's workflow may proceed. Interlocks are configured by a System Administrator with the Meridian Enterprise Configurator application. Interlocks are available only with the Meridian Advanced Project Workflow Module.

property

Descriptive data used to identify, classify, and find documents. Properties are organized into related groups called property sets.

property navigation

A dynamic search method in which a user progressively reduces the number of documents found by selecting from additional property values.

property page

A secondary window, usually displayed with a tab, that displays the properties of an object such as a document.

property set

A group of related properties.

publish

To create a copy of a document in another information system, optionally in a different electronic format.

purge

To completely and permanently delete data from a system.

Q

query

A search command comprised of one or more search criteria often expressed in Structured Query Language (SQL) syntax.

Quick Change

A very simple document workflow consisting of only two steps, Start Quick Change and Release Quick Change that may or may not increment the document's revision number depending on the configuration of the document type.

R

reassign

To immediately assign a document to the current work area for additional changes after discarding or releasing the current revision.

recovery log

The log of vault documents that can be executed in order to export the documents from a vault to a specified location on the file system. The recovery log is created for use in the event of a critical disaster to provide continued access to documents.

redline

Corrections to a drawing made graphically on a copy of the drawing. Redlines can be created for electronic drawings with the InnoCielo viewer by a user with the appropriate security privileges.

reference
A link that represents a relationship between two documents. References can be created automatically by Meridian (for example, AutoCAD External Reference) or manually by a user.

reference type
A classification of references that share one or more document management characteristics such as purpose, source or destination document types, or security.

references page
A type of property page that displays the references of a document.

related documents page
A type of property page that displays the documents that are related to the selected object.

related tags page
A type of property page that displays the asset tags that are related to the selected document.

release
The final step (transition) of a Meridian Enterprise workflow. When describing project workflow, refers to a new revision of a master document that was created from the content of a project copy. When describing document type or workflow definition workflows, refers to a new revision of the document that was created by completing the document's workflow.

render
Rendition (noun) refers to a copy of a document in a format other than the original. Render (verb) refers to the process of creating a rendition.

rendition
Rendition (noun) refers to a copy of a document in a format other than the original. Render (verb) refers to the process of creating a rendition.

repository
The largest logical container of a document management system for storing documents and metadata. A repository commonly contains all of the documents for a single organization, division, department, workgroup, or other purpose, organized into folders and sub-folders. The fundamental container of a Meridian Explorer system.

result grid
A configurable grid view used to display documents or tags found by a search.

retire
To classify a document as obsolete and prevent it from being revised.

return code
A standard keyword or phrase that represents the reason why a submittal was issued.

review
The process of evaluating the accuracy and completeness of revisions to a document.

revision
A milestone in a document's history that represents approved information at particular point in time identified by a number or letter.

revisions page
A type of property page that displays a list of the revisions of a document.

revoke
The act of canceling revision of a working copy of a document and deleting the copy being edited.

role
A named set of privileges to which users or groups are assigned by an administrator.

RPC
Acronym for Remote Procedure Call.

S

saved search
A user-defined set of search criteria that is saved for future reuse.

scope
A Meridian Enterprise feature that limits vault functionality and the visible information to named sets. A scope can be selected by users to make the system easier to use or to gain access to different documents.

search layout
A configurable combination of repository navigation and search filter parameters used by Meridian Explorer.

server
A centralized computer or application that provides services to one or more client computers or applications in a network.

shared workspace
A special folder in a Meridian Enterprise vault that is used to store files to support multi-user applications. The vault folder is mapped to a shared network location outside the vault that is used instead of local workspaces on the users' computers. Meridian Enterprise synchronizes the contents of the shared network location with the vault folder. Configurable options control other behaviors specific to using a shared workspace.

shortcut bar
The name of the accordion control containing shortcuts to views, vaults, and baselines that can be displayed in the left pane of the Meridian Enterprise desktop application.

SID
An acronym for System Identifier. A name that identifies a specific instance of a running Oracle database.

SMTP
An acronym for Simple Mail Transport Protocol.

snapshot
A read-only copy of metadata made so that slower data backup processes can occur while the application continues writing to its data. Backing up a snapshot minimizes maintenance downtime.

source state
The state of a workflow that precedes a workflow transition.

SSL
An acronym for Secure Sockets Layer or Transport Security Layer.

SSL/TLS
An acronym for Secure Sockets Layer or Transport Security Layer.

static collection
Saved search results that are displayed without reevaluating the search criteria.

sub-project
A Meridian Enterprise project folder contained within another project folder that can represent a subordinate process. Subprojects are available only with the Meridian Advanced Project Workflow Module.

submit
When used to describe a document, means to check in the working copy of a document that is under revision. Equivalent to releasing a document from a workflow.

submittal

A package of documents received by an organization for review, reference, modification, or final delivery.

T

tag

A vault or repository record that represents a logical asset stored in a separate maintenance management system. The logical asset represents a physical asset that is present at a facility that is managed with the maintenance management system. A tag may reference one or more documents, or the reverse.

tag type

The document type that is configured for use as asset tags.

thumbnail

A small preview image that is shown to assist the user in identifying a file.

TLS

An acronym for Secure Sockets Layer or Transport Security Layer.

To-Do List

The name of a navigation view in Meridian Enterprise.

transaction isolation

A property in a database system that defines how and when the changes made by one operation become visible to other concurrent operations.

transition conditions

Property value filters and logical expressions that are evaluated to determine the validity of a workflow transition to be executed by a user.

transition equivalence

The equality of a Meridian Enterprise transition in one document workflow to a transition in another document workflow. Transition equivalence makes it possible to execute a transition for one document in a batch of documents and have it also execute transitions in the other documents within the batch even if the transitions don’t have the same name, source state, or destination state. Configured by a System Administrator with the Meridian Enterprise Configurator application. Transition equivalence is available only with the Meridian Advanced Project Workflow Module.

transmittal sheet
A cover letter for a submittal that lists the names and other property values of the documents that are included in the submittal. It might also include comments about the status of the documents or the project, instructions to the recipient, and a date by which a response to the submittal is due back to the sender.

U

unretire
To reverse the effects of retiring a document so that it can be revised.

URL
An acronym for Uniform Resource Locator used to specify Internet and intranet addresses.

V

vault
A Meridian repository for storing documents related by organization, division, department, workgroup, or purpose.

VBScript
The Visual Basic scripting language (Visual Basic Scripting Edition).

version
A document derived or copied from another document of the same revision.

VPN
An acronym for Virtual Private Network.

W

WAN
An acronym for wide area network.

watermark
Textual or graphic information overlaid on a printed document used to indicate authenticity or validity.

Web Access
The Meridian Enterprise web browser-based client application.

web client
A client application that is presented in a web browser.

Work Isolation mode
The vault setting that defines how and when the changes made by one user become visible to other concurrent users.

workflow
A predetermined sequence of steps used to produce standardized results.

working copy
A temporary copy of a document made for making changes as an alternative to document workflow.

workstation
A personal computer used by an individual in a network. A workstation is the client in a client/server system.

X

X-Ref
An AutoCAD drawing that is linked to, but not inserted into, the current drawing. Changes made to referenced drawings (X-Refs) are automatically displayed in the current drawing when the current drawing is opened.

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