

USER GUIDE

Digital Assets

Release 10.0-MP3 (October 2020)

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Digital Assets

Digital assets can be either images or non-images (based on MIME type), but both include metadata, references, and digital content. For more information, see the **MIME Types** section of the **System Setup / Super User Guide**.

- **Images** are assets, usually with a MIME type of **image/***, and can be converted during export from STEP. Modifications can include changes to size, color, and/or converting the file to a format available in the wizard. Image Conversion Configurations allow these modifications to be saved and applied consistently for additional exports. For more information about converting images, see **Image Conversion Configuration** in the **Digital Assets** documentation.
- **Non-images** are assets with any other MIME type and cannot be modified during an export. Non-images are exported from STEP in the same format and manner that they were loaded into STEP.

Inbound Assets

These are the ways to import assets into STEP:

- **Asset Importer** allows you to import assets via Web UI and/or hotfolders configured with an Inbound Integration Endpoint.
- **Manual Asset Importer** allows you to import assets via STEP Workbench but cannot be scheduled.

Outbound Assets

These are the ways to export assets from STEP:

- **Export Images and Documents** wizard allows you to manually export asset digital content.
- **Export Manager** or an **OIEP** allows you to manually export asset metadata, references, and digital content, in addition to data, using STEPXML.
- **Asset Push** allows you to automatically export modified / approved assets.
- **REST API** allows you to upload files to REST. For more information, click the **STEP API Documentation** button on the STEP Start Page.

To exchange data independent of assets, see the **Data Exchange** documentation.

Asset Management

These are the options for managing assets:

- **Asset Analyzer** is an add-on component that can automatically tag image assets with keywords through visual analysis.
- **Asset Download** is an add-on component that allows users to provide a URL to an asset on a product and have STEP automatically download the asset.
- **External Digital Asset Management (DAM)** is a component model that allows assets to be stored outside of STEP.

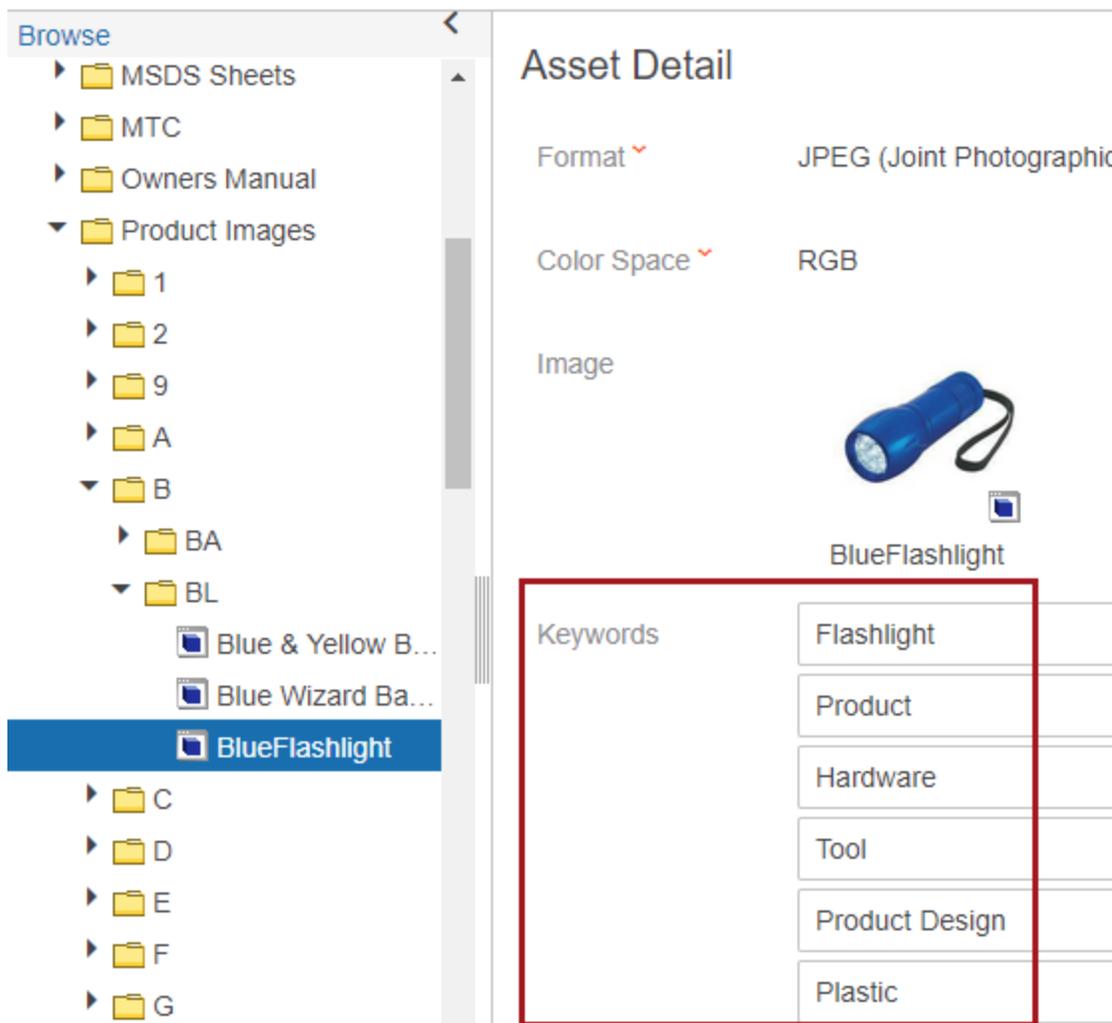
- **External File Structure (EFS)** allows assets to be stored outside of STEP in a file structure.
- **Image Deduplication** is an add-on component that identifies and manages duplicate images to ensure that only one version of a particular image is maintained in the system.

Asset Analyzer

Asset Analyzer is an add-on component for STEP that leverages machine-learning capabilities to automatically tag image assets with keywords through visual analysis. This automated metadata enrichment enables enhanced search capabilities, improved categorization, and better search engine optimization (SEO) for web publishing.

The Asset Analyzer component integrates STEP directly with the Google Cloud Vision API. Users can easily send assets to the Google Cloud Vision API by performing bulk updates or executing business actions on assets and/or on products with referenced image assets. To simplify the setup, these bulk update and business action operations are installed, and largely pre-configured, when the Asset Analyzer is first installed.

The Google Cloud Vision API analyzes the images and automatically computes tags based on their visual characteristics. These tags are then stored in STEP and can be used to search images, export metadata about an image for the web, and improve the classification of products according to their referenced images. The Asset Analyzer can be used from within the Web UI, workbench, and during imports—i.e., any location where bulk updates and JavaScript business rules can be run.



Additionally, the Asset Analyzer component helps users to:

- Enrich data-poor images by running images through an analytics algorithm to gather relevant metadata for each image, then assigning metadata values to that image based on the value's certainty score
- Make newly enriched images more searchable
- Enhance matching and linking by using metadata on assets

Prerequisites for Using the Asset Analyzer

- Your STEP server must be able to communicate externally with the specified Google Cloud Vision API server
- A Google Cloud Vision API account and API key is required to use this functionality. For more information, contact your Stibo Systems representative. The following websites also provide instructions for enabling the Google Cloud Vision API: <https://cloud.google.com/vision/docs/before-you-begin> and <https://cloud.google.com/vision/docs/auth>.
- The executing user for Asset Analyzer business rules and bulk updates must have permissions to write values to the specified Keywords attribute

Topics Covered in This Guide

This guide / documentation section covers the following topics:

- Configuring the Asset Analyzer - Setup Group Items and Business Rules
- Configuring the Asset Analyzer - Additional Configurations
- Using the Asset Analyzer

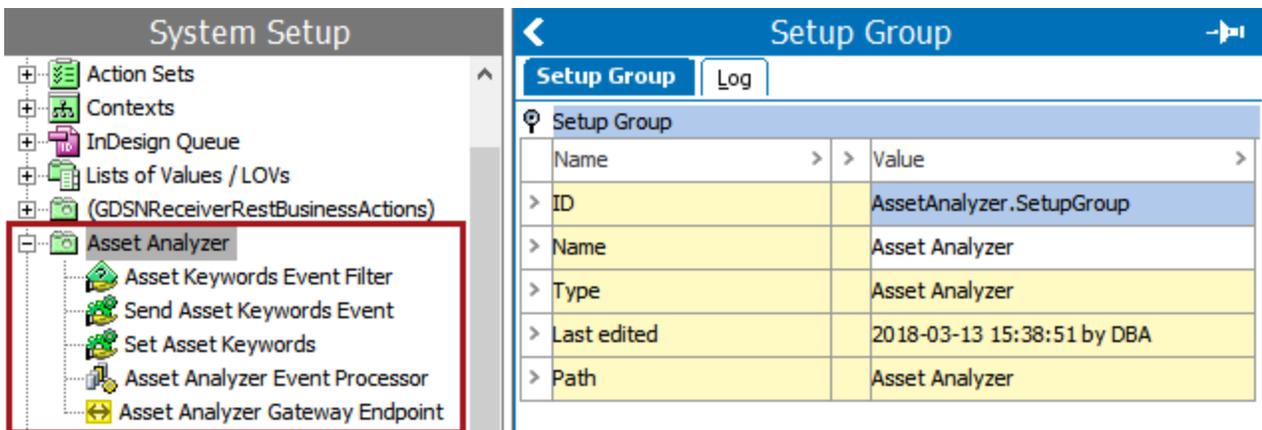
Configuring Asset Analyzer - Setup Group Items and Business Rules

When the Asset Analyzer component is first installed, the majority of the configurations necessary to run the solution are installed automatically. This pre-configuration means that setup is only done once, making the solution easy to set up and use.

Asset Analyzer Setup Group

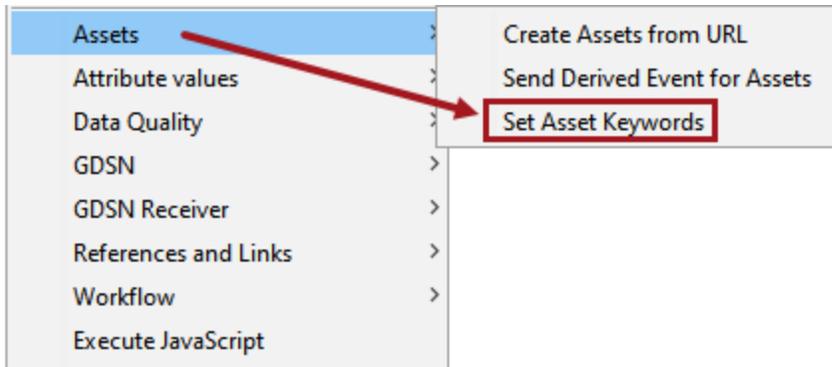
A setup group named **Asset Analyzer** (AssetAnalyzer.SetupGroup) is created upon installation, which contains the following items:

- Set Asset Keywords - business action
- Send Asset Keywords Event - business action
- Asset Keywords Event Filter
- Asset Analyzer Event Processor
- Asset Analyzer Gateway Endpoint



Set Asset Keywords – Business Action

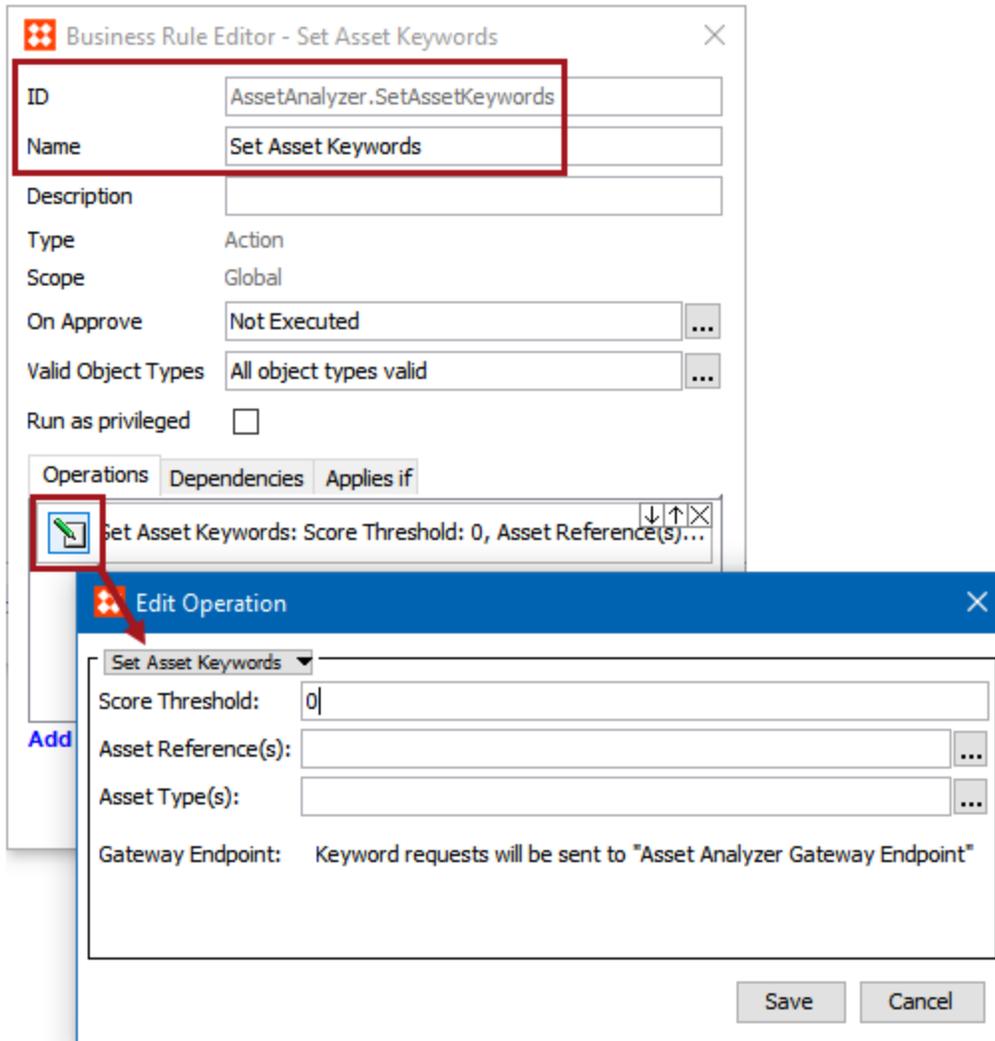
The **Set Asset Keywords** (AssetAnalyzer.SetAssetKeywords) action handles the communication to and from the Google Cloud Vision API using the Asset Analyzer Gateway Endpoint. The **Set Asset Keywords** operation is used to send assets to the Google Cloud Vision API, return keywords, then set the keywords on the asset, storing them in the Keywords (AssetAnalyzer.Keywords) description attribute. It is used for synchronous operations, meaning that each operation has to wait for another operation to complete before it can begin.



Optional Configurations

Though Set Asset Keywords is automatically created upon installation of the Asset Analyzer, additional configurations are needed if you wish to change and/or add any of the following behaviors:

- Add a Description to the rule
- Change the behavior of On Approve. By default, the selection is **Not Executed**.
- Limit the selection of valid object types for the rule. By default, all object types are valid.
- Run as privileged



In the Edit Operation dialog, the following optional parameters may also be set:

- **Score Threshold:** Keywords returned by the Google Cloud Vision API have a score that indicates the confidence level of the returned keywords. If a keyword score falls below this threshold, the keyword is ignored. The default value set to 0, meaning that all keywords will be returned, unless a limitation is placed on the maximum returned results in System Settings; see **Configuring the Asset Analyzer - Additional Configurations** for more information.
- **Asset Reference(s):** This parameter is *optional* when executing the business action on asset(s).

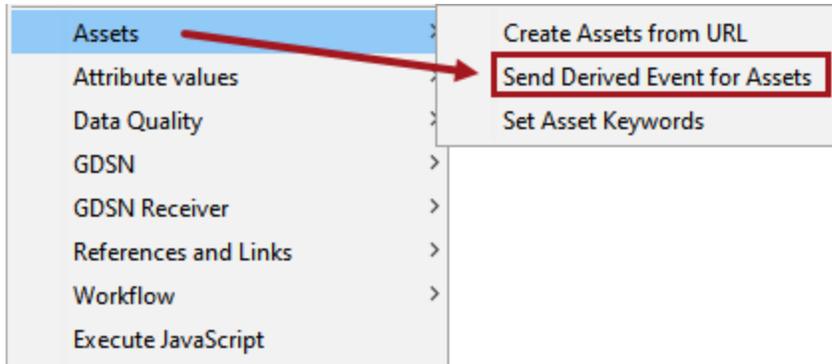
Note: If executing the business action on an object with referenced assets, e.g., a product, this parameter is required. In this instance, the asset reference type(s) must be specified so the system knows which reference type(s) to check for linked assets. These linked assets will then be sent to the Google Cloud Vision API for analysis.

- **Asset Type(s):** This parameter is optional. If set, the asset being operated on (either the current asset or the referenced asset) must match this type. If it does not match the type, the asset will not be sent to the Google Cloud Vision API for analysis.

- **Gateway Endpoint:** This is a read-only parameter that displays the gateway endpoint selected under Asset Analyzer Settings in System Settings. If no endpoint is specified in System Settings, then a warning is displayed. For more information about the Asset Analyzer Settings, see **Configuring the Asset Analyzer - Additional Configurations**.

Send Asset Keywords Event – Business Action

The Asset Analyzer business action **Send Asset Keywords Event** (AssetAnalyzer.SendAssetKeywordsEvent) is used by the **Send Derived Events for Assets** operation, which is accessible from the **Assets** category in the 'Edit Operation' dialog for business rules.



The Send Asset Keywords Event raises the derived event **Asset Keywords Event** and is used for asynchronous operations. By default, it is configured to use the **Asset Analyzer Event Processor**, which is also automatically created upon installation of the Asset Analyzer (more information about this event processor follows below).

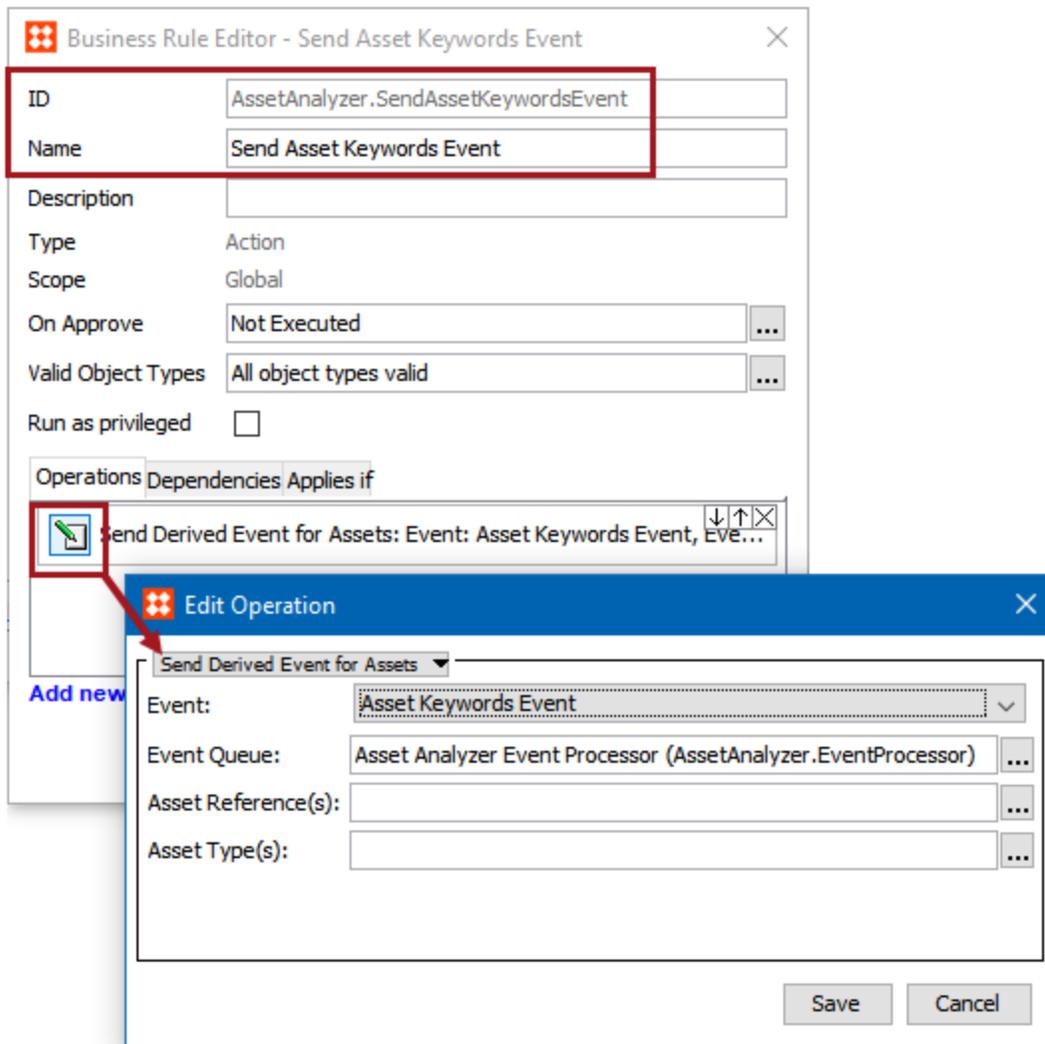
One use case where this action would be used is for setting asset keywords asynchronously, in a non-blocking fashion; i.e., it does not need to wait for another operation to complete. For example, as part of an import, it could be used to trigger the setting of asset keywords without blocking the import while the asset keywords are retrieved. In order to do this, the Asset Analyzer Event Processor is used to run the **Set Asset Keywords** business action (detailed in the following section). The event processor is configured to listen for a particular derived event, via an event filter. The workflow could then be configured to use the **Send Derived Event for Assets** action to trigger the event processor in the background.

Optional Configurations

Though Send Derived Events is automatically created upon installation of the Asset Analyzer, additional configurations are needed if you wish to change add and/or add any of the following behaviors:

- Add a Description to the rule
- Change the behavior of On Approve. By default, the selection is Not Executed.
- Limit the selection of valid object types for the rule. By default, all object types are valid.
- Run as privileged
- Specify the asset reference types and/or asset types that are valid for the business action. By default, all asset types are valid.

Note: If running the business rule from an object to which the assets are linked via an asset reference type (e.g., a product object), then at least one asset reference type must be specified so the system will know which referenced assets to fetch.



Asset Keywords Event Filter

The **Asset Keywords Event Filter** (`AssetAnalyzer.AssetKeywordsEventFilter`) is an Execute JavaScript business condition that binds to the derived event **Asset Keywords Event**. The Asset Keywords Event is automatically created under System Settings > **Derived Events** when the Asset Analyzer is installed.

Optional Configurations

Though the Asset Keywords Event Filter is automatically created upon installation of the Asset Analyzer, additional configuration is needed if you wish to change and/or add any of the following behaviors:

- Add a Description to the rule
- Change the behavior of On Approve. By default, the selection is Not Validated.

- Limit the selection of valid object types for the rule. By default, all object types are valid.
- Run as privileged
- Add additional binds (e.g., Logger) and/or add a message

Business Rule Editor - Asset Keywords Event Filter

ID: AssetAnalyzer.AssetKeywordsEventFilter
 Name: Asset Keywords Event Filter
 Description:
 Type: Condition
 Scope: Global
 On Approve: Not Validated
 Valid Object Types: All object types valid
 Run as privileged:

Operations: JavaScriptBusinessConditionWithBounds: Bindings, 0 messages, if (currentEVE...
 Add new

Edit Operation

Evaluate JavaScript

Binds:

Variable name	Binds to
currentEventType	Current Event Type

Messages:

Variable name	Message	Translations

JavaScript:

```

1  if (currentEventType) {
2      return (currentEventType.getID() == "Asset Keywords Event");
3  }
4  return false;

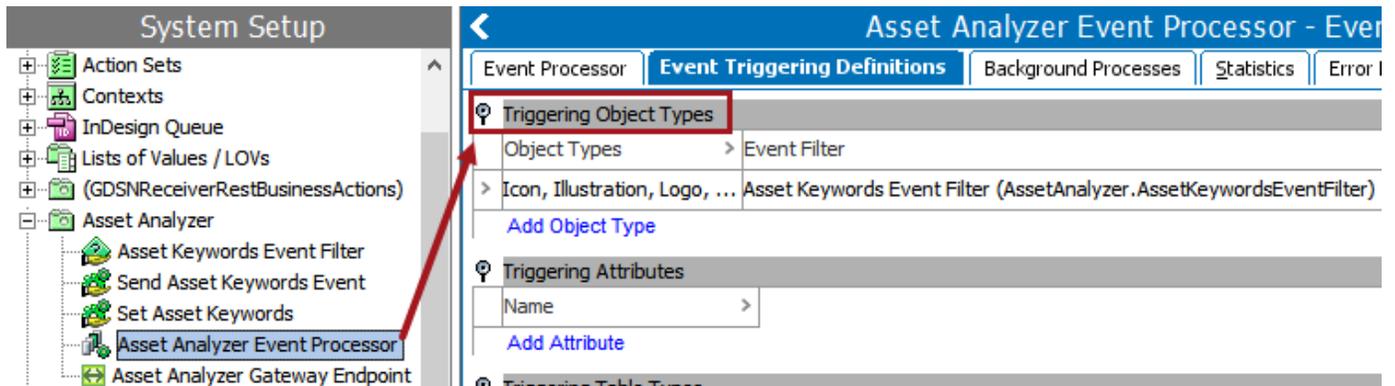
```

Save Test JavaScript Cancel

Asset Analyzer Event Processor

The Asset Analyzer Event Processor (AssetAnalyzer.EventProcessor) is a standard event processor that executes the **Set Asset Keywords** business action.

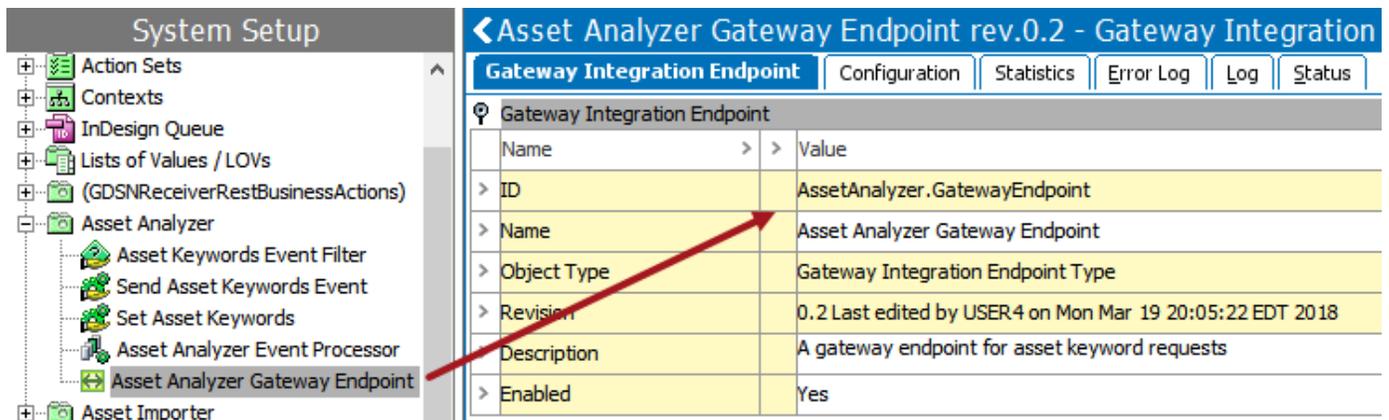
By default, all asset object types are valid for **Triggering Object Types**, though it is recommended that only image asset types are made valid. The default Event Filter is the **Asset Keywords Event Filter** business condition.



Though the event processor is functional upon installation, there are a multitude of additional configurations that can be made, such as number of events to batch, days to retain events, scheduling, and so forth. For more information on the available configuration options for event processors, see the **Event Processors** section of the **System Setup / Super User Guide** documentation.

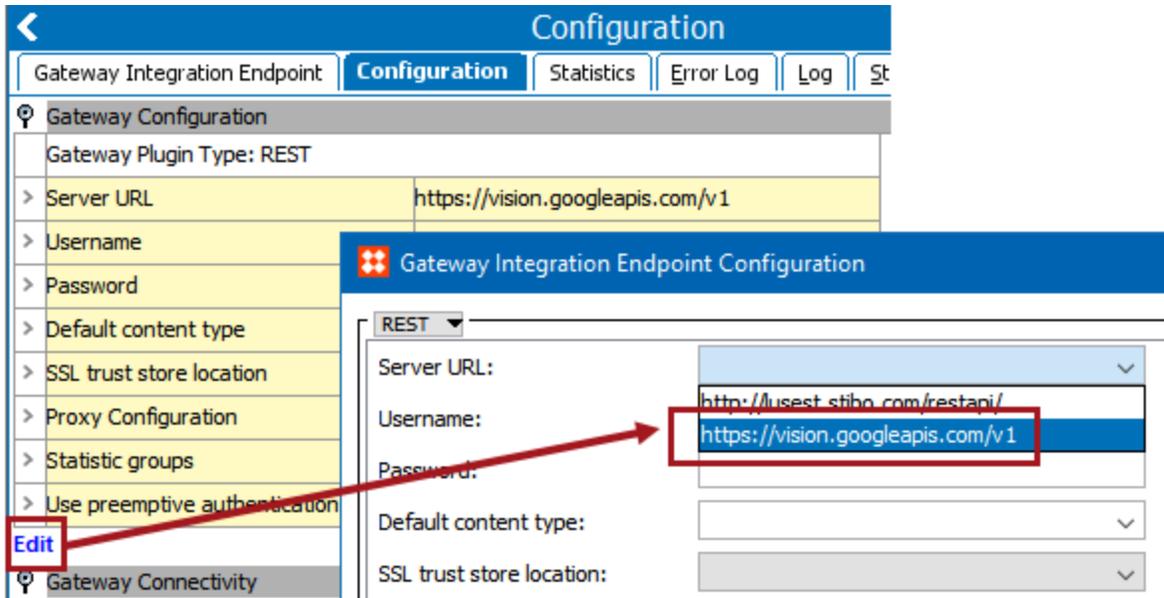
Asset Analyzer Gateway Endpoint

The **Asset Analyzer Gateway Endpoint** (AssetAnalyzer.GatewayEndpoint) enables STEP to communicate with the Google Cloud Vision API. The endpoint must be running to enable the solution to work.



The URL to the Google Cloud Vision API service must be specified in the **Server URL** field of the Gateway Integration Endpoint Configuration, using a REST plugin.

Note: The Google Vision API URL must first be added to your sharedconfig.properties file before it will be available in the Server URL dropdown. The below screenshot shows a sample URL and may not be the same server address that will ultimately be obtained from Google. For more information on the configuration of Gateway Integration Endpoints, see the **Gateway Integration Endpoints** section of the **Data Exchange** documentation.



Sharedconfig.Properties file

The Google vision API URL is obtained from Google, and must first be added to your sharedconfig.properties file.

If no other REST URLs are already available in the file, you will enter a string similar to the following:

```
RESTGateway.ServerURL=googlevision=https://vision.googleapis.com/v1
```

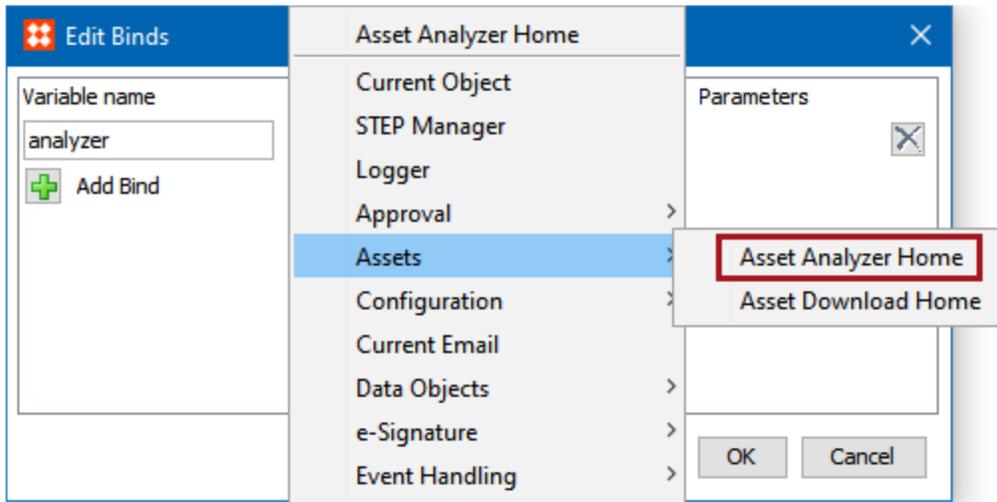
Since the RESTGateway.ServerURL is a comma separated list of name / value pairs, if other REST URLs are available, they will be entered after the other URLs, similar to the following:

```
RESTGateway.ServerURL=01=http://lusest.stibo.com/restapi/,  
googlevision=https://vision.googleapis.com/v1
```

```
#=====#  
#RestGateway Proxy Server Settings  
#=====#  
RESTGateway.ServerURL=01=http://lusest.stibo.com/restapi/,googlevision=https://vision.googleapis.com/v1  
RESTGateway.ProxyConfiguration.1=testProxyConfig1,10.64.8.253,808,username,password  
RESTGateway.ProxyConfiguration.2=testProxyConfig2,10.64.9.253,64,user10,password1
```

Public JavaScript API methods to get and set asset keywords

Two public API JavaScript methods are also installed with the Asset Analyzer to handle scenarios outside of those covered by the other two asset keyword business actions, such as performing operations based on the returned keywords and their score. These new methods are **getAssetKeywords** and **setAssetKeywords**. Both are used with the **Asset Analyzer Home** bind, which is located under the **Assets** category for Execute JavaScript business actions. Both methods analyze the asset and return the keywords found. The setAssetKeywords method sets the relevant keywords to the Keywords Attribute. The getAssetKeywords method returns the keywords found, but does not set them.



For more information on the STEP Scripting API, see the **JavaScript in STEP** section of the **Resource Materials** online help.

Configuring Asset Analyzer - Additional Configurations

When the Asset Analyzer component is first installed, additional items are created in the workbench for configuration in addition to the business rules, event filter, event processor, and gateway endpoint that are created in the Asset Analyzer Setup group. This topic explains the additional configurations required to enable the Asset Analyzer functionality.

Keywords Attribute

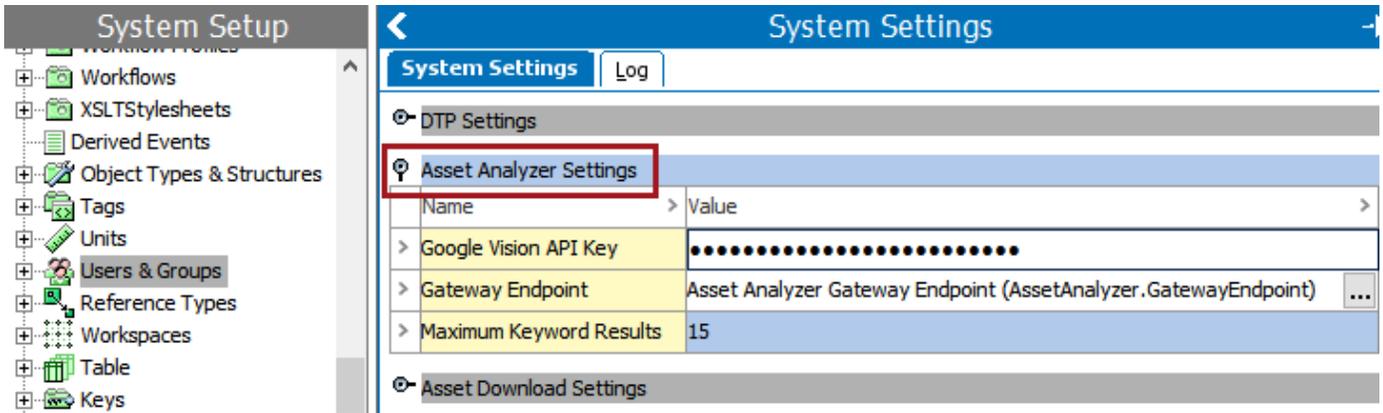
A multi-valued description attribute named **Keywords** (AssetAnalyzer.Keywords) is created along with an attribute group named Asset Analyzer Attributes (AssetAnalyzer.Attributes) when the Asset Analyzer is installed. This attribute holds all keywords returned by the Google Cloud Vision API. By default, this attribute is valid on all asset object types, though the object types can be limited by removing them from the Asset Analyzer component model. See the subsection on the 'Asset Analyzer Component Model' below for more information.

Keywords - Attribute	
Description	
Name	Value
ID	AssetAnalyzer.Keywords
Name	Keywords
Last edited by	2018-03-13 15:38:53 by DBA
Full Text Indexable	No
Externally Maintained	Yes
Hierarchical Filtering	None
Calculated	No
Type	Description

System Settings

Three settings are available under Asset Analyzer Settings in Users & Groups > System Settings:

- **Google Vision API Key:** This field is used to authenticate requests to the Google Cloud Vision API. To use the Set Asset Keywords functionality in the Asset Analyzer component, you must have a valid Google Vision API Key, which is obtained from Google.
- **Gateway Endpoint:** By default, this is the Asset Analyzer Gateway Endpoint, which is created upon installation of the Asset Analyzer.
- **Maximum Keyword Results:** This is the maximum number of keywords that can be returned after the asset is analyzed. The default is 15.



Asset Analyzer Component Model

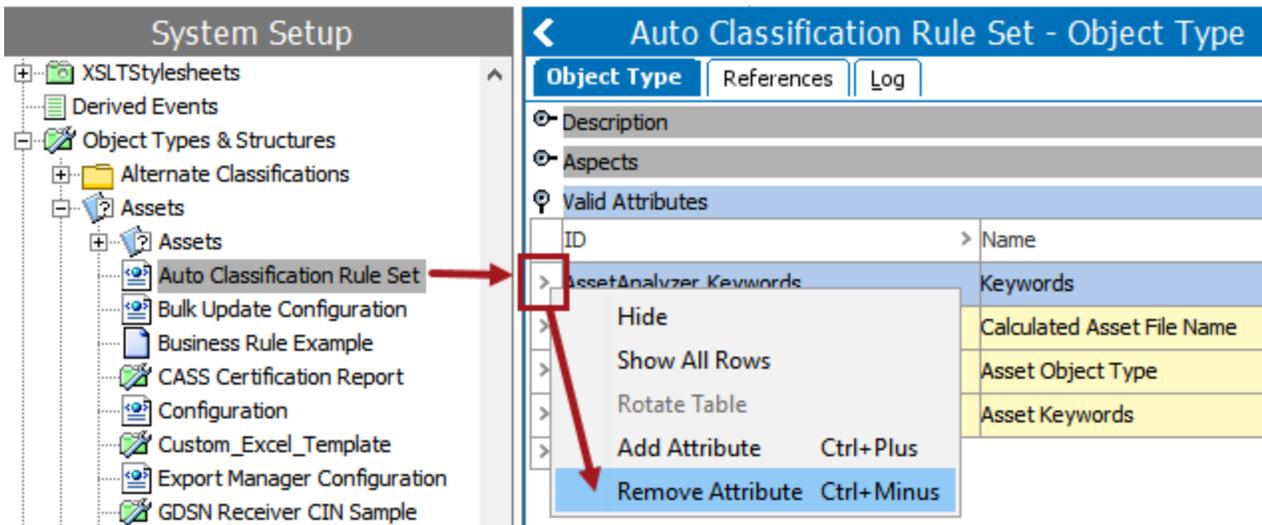
The Asset Analyzer component model enables the specification of:

- The attribute used to store keywords, which is, by default, Keywords (AssetAnalyzer.Keywords)
- The asset object types that the Keywords attribute is valid for.

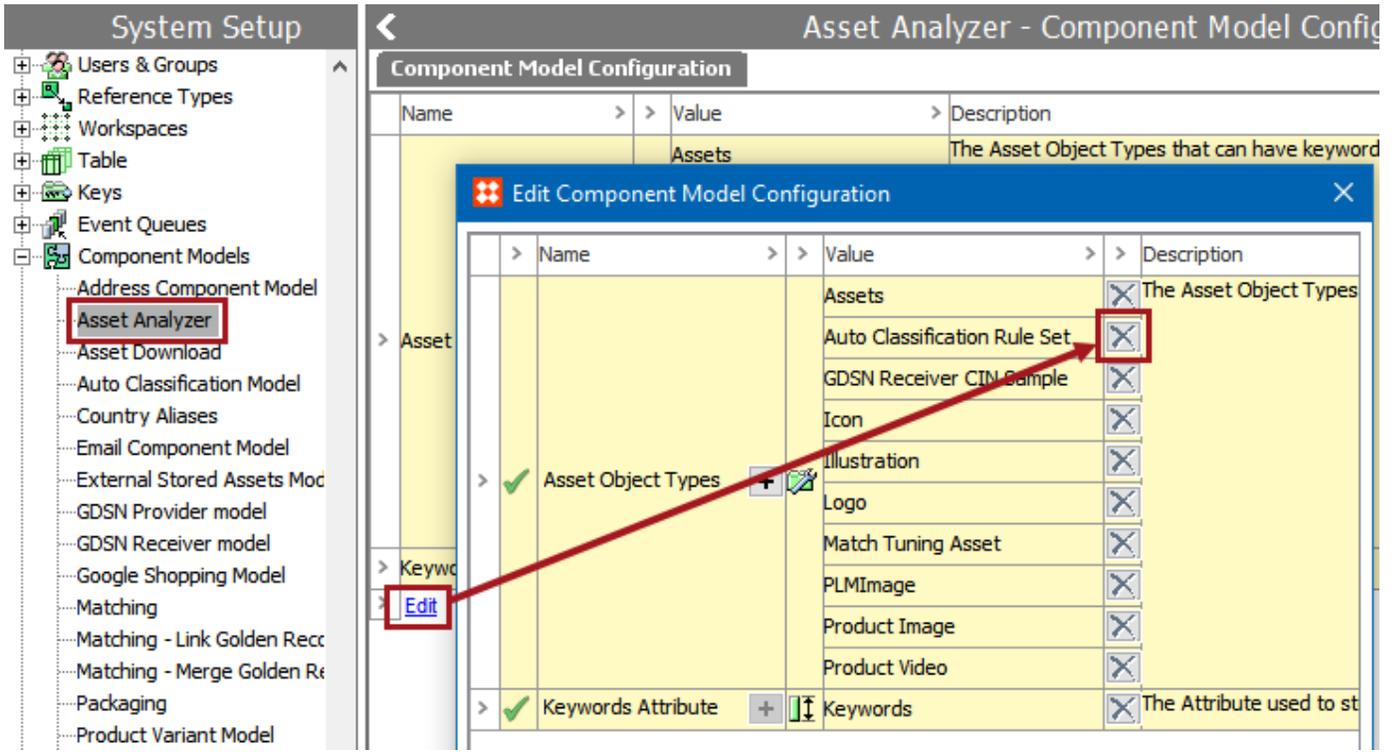
By default, all asset object types are automatically included in the component model. Since some of these asset types may not be used for images (for example, PDF, Word, or Excel files), it is recommended to remove them from the component model, which is done by following these steps:

Removing an Asset Object Type from the Asset Analyzer Component Model

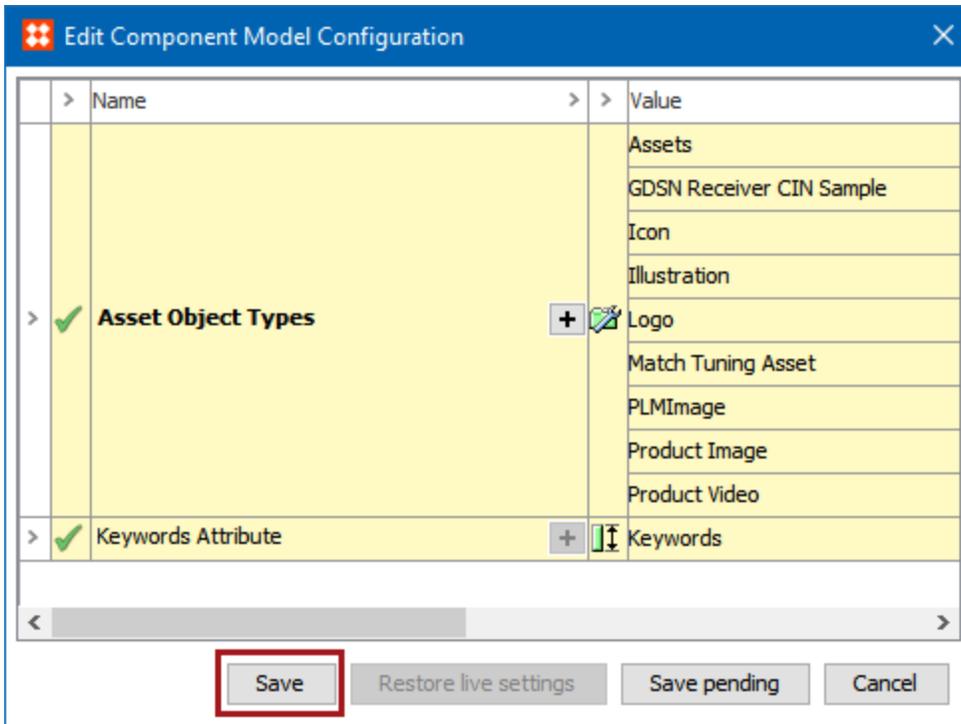
1. In System Setup, navigate to Object Types & Structures > **Assets** and select the asset object type that you want to remove from the component model. The following example uses the 'Auto Classification Rule Set' asset object type.
2. Under the Valid Attributes flipper, right-click on the arrow in the row containing the AssetAnalyzer.Keywords attribute, then click **Remove Attribute**.



3. While still in System Setup, select the **Asset Analyzer** component model and click the 'Edit' hyperlink. The **Edit Component Model Configuration** window displays.
4. Double-click on the **X** next to the object type that you want to remove from the component model.



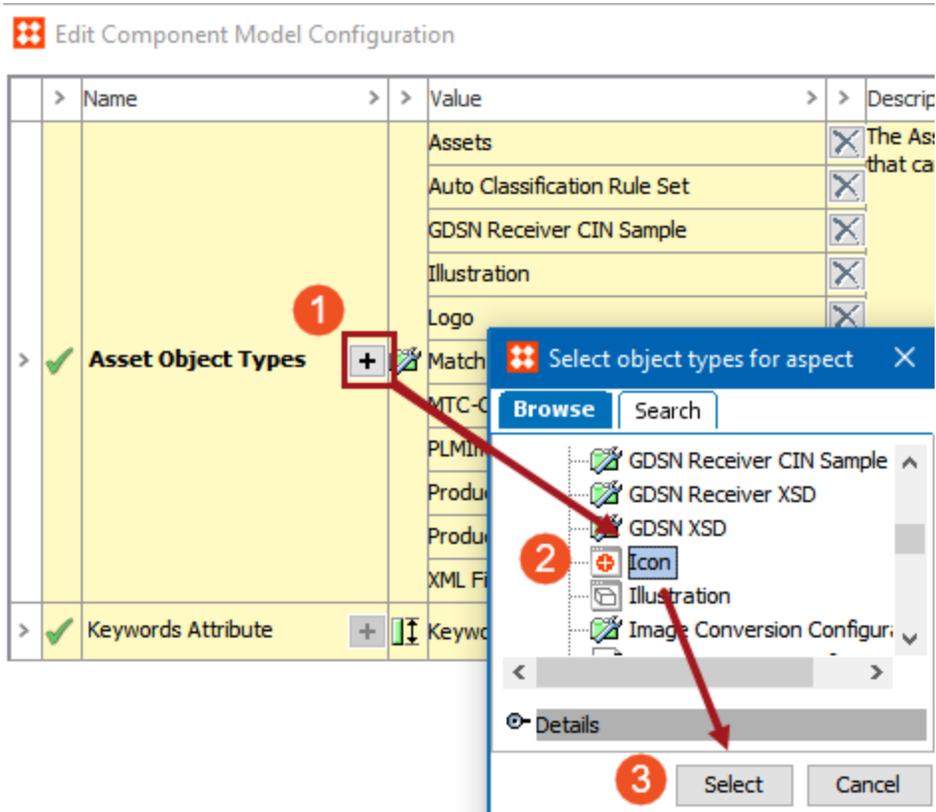
5. The **Save** and **Save pending** buttons are activated. Click **Save** to remove the asset object type and close the Edit Component Model Configuration dialog. Click **Save pending** to keep the live configuration as-is and make additional changes later.



Adding an Asset Type to the Asset Analyzer Component Model

To add a new asset object type or re-add a previously deleted asset object type to the component model:

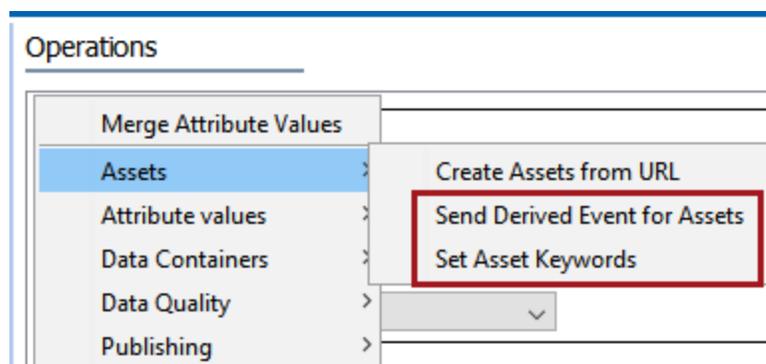
1. Launch the 'Edit Component Model Configuration' dialog by following the steps outlined in the previous subsection
2. Double-click the plus sign icon to launch the **Select object types for aspect** dialog.
3. Select the asset object type(s) that you want to add to the component model, then click **Select**.



4. Click Save to close the 'Edit Component Model Configuration' dialog.

Asset Analyzer Bulk Update Operations

A category of bulk update operations named **Assets** is added to the system when the Asset Analyzer component is installed. The Assets category contains two operations for asset keywords: **Send Derived Event for Assets** and **Set Asset Keywords**. These are configured and behave in a near-identical fashion to the 'Send Asset Keywords Event' and 'Set Asset Keywords' business actions, which are explained in detail in the **Configuring the Asset Analyzer - Setup Group Items and Business Rules** topic.



Using Asset Analyzer

The Asset Analyzer can be used from within the Web UI, workbench, and during imports—i.e., any location where bulk updates and JavaScript business rules can be run.

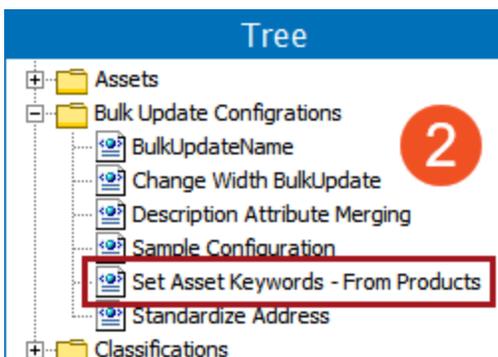
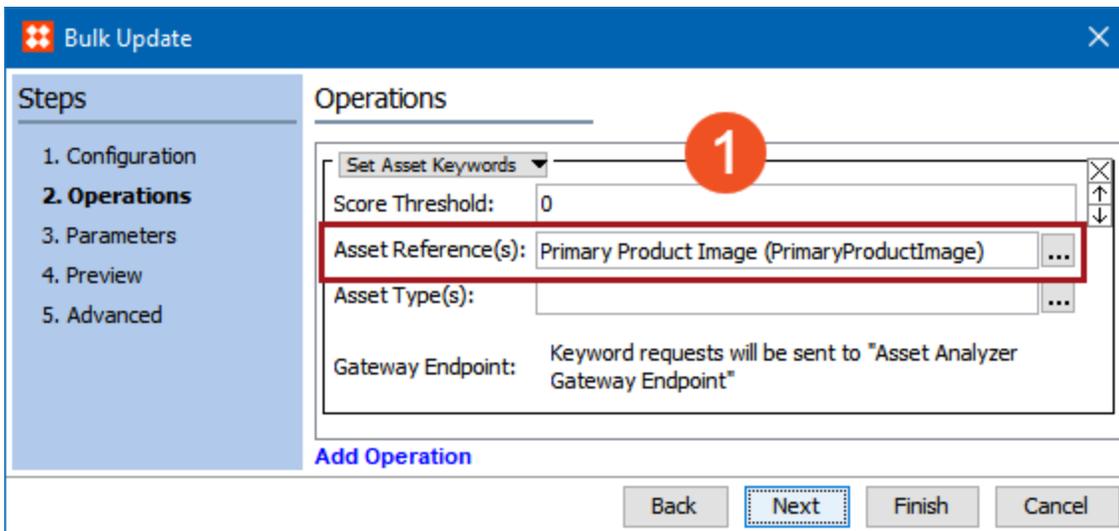
Users can send assets to the Google Cloud Vision API by performing bulk updates or executing business actions on **assets** and/or on **products** with referenced image assets. Running these operations on **assets** will set keywords directly on the **assets**; running these operations on products will set the keywords on referenced assets after fetching them from the asset reference links specified in the business rule or bulk update configuration.

The following examples describe a small selection of use cases and possible setups for using the Asset Analyzer.

Run a Bulk Update on a Product Collection

This simple example shows how keywords can be set on assets by performing a bulk update on a product collection of Flashlights in the Web UI.

1. The **Set Asset Keywords** bulk update will first be configured in the workbench to use the Primary Product Image asset reference type, then saved as a bulk update configuration named 'Set Asset Keywords - From Products.' For information on how to create a bulk update configuration, see the **Bulk Updates** documentation.



- In the Web UI, the Flashlights collection is selected on the Collection Detail screen, and all objects within the collection are selected.
- To perform the bulk update, click the **Bulk update action** button, then choose the 'Set Asset Keywords - From Products' bulk update configuration. For information on how to add an action button to a Node List Properties screen, see the **Action Button Configuration on a Node List** topic in the **Web User Interfaces** documentation.

Collection Detail 1

Clear all Export **Bulk update action**

	Name	Object Type
<input checked="" type="checkbox"/>	Blue Flashlight	Item
<input checked="" type="checkbox"/>	Flashlight Items	Item Folder
<input checked="" type="checkbox"/>	Green Flashlight	Item
<input checked="" type="checkbox"/>	Orange Flashlight	Item
<input checked="" type="checkbox"/>	Pink Flashlight	Item
<input checked="" type="checkbox"/>	Red Flashlight	Item

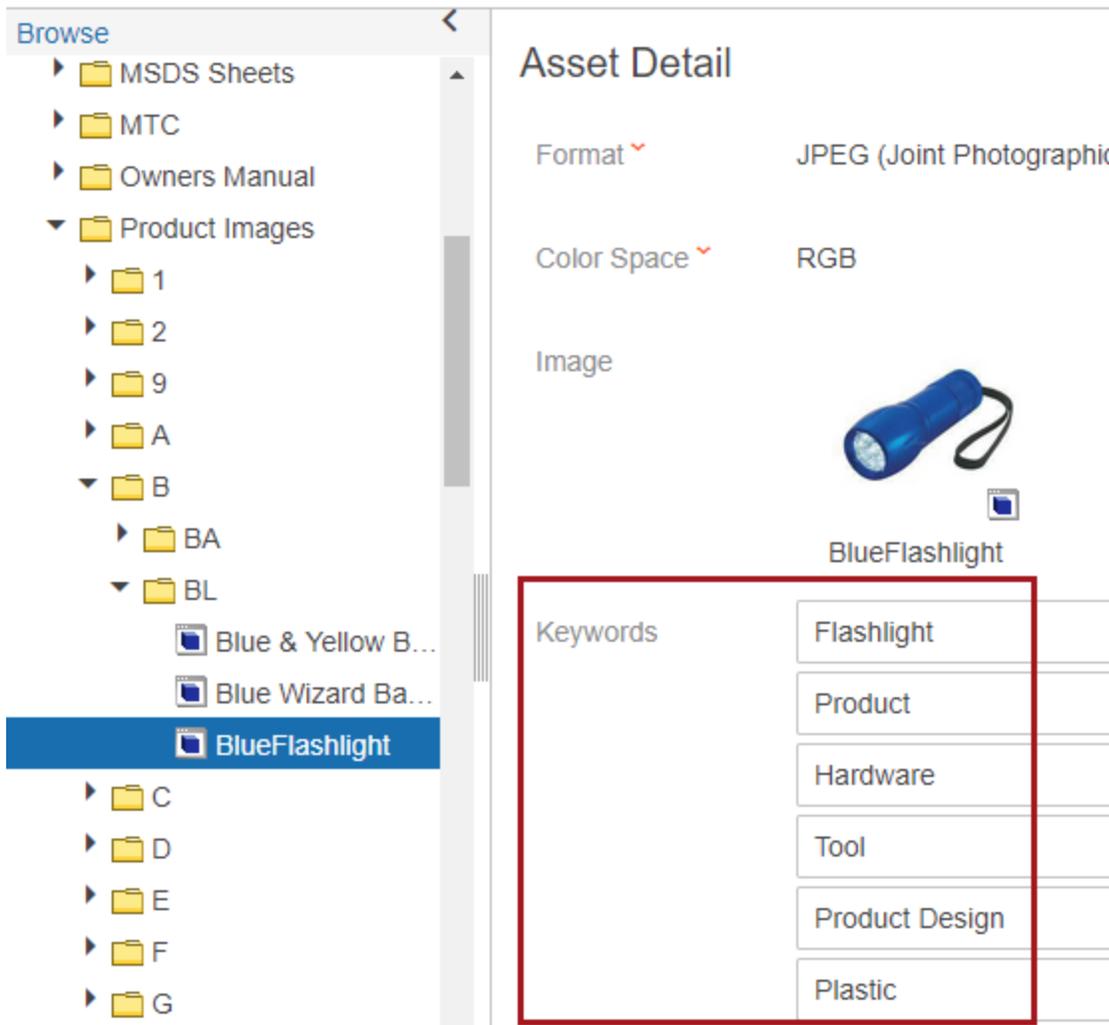
Bulk Update 2

Enter or select Bulk Update configuration

Set Asset Keywords - From Products

OK Cancel

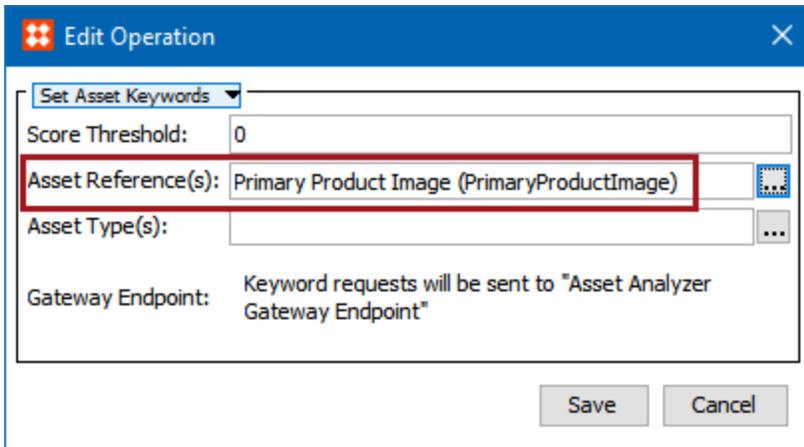
- After the bulk update action process completes, the keywords are set on the referenced images. The below image shows the keywords that have been set on the BlueFlashlight image, which is the Primary Product Image referenced by the Blue Flashlight item.



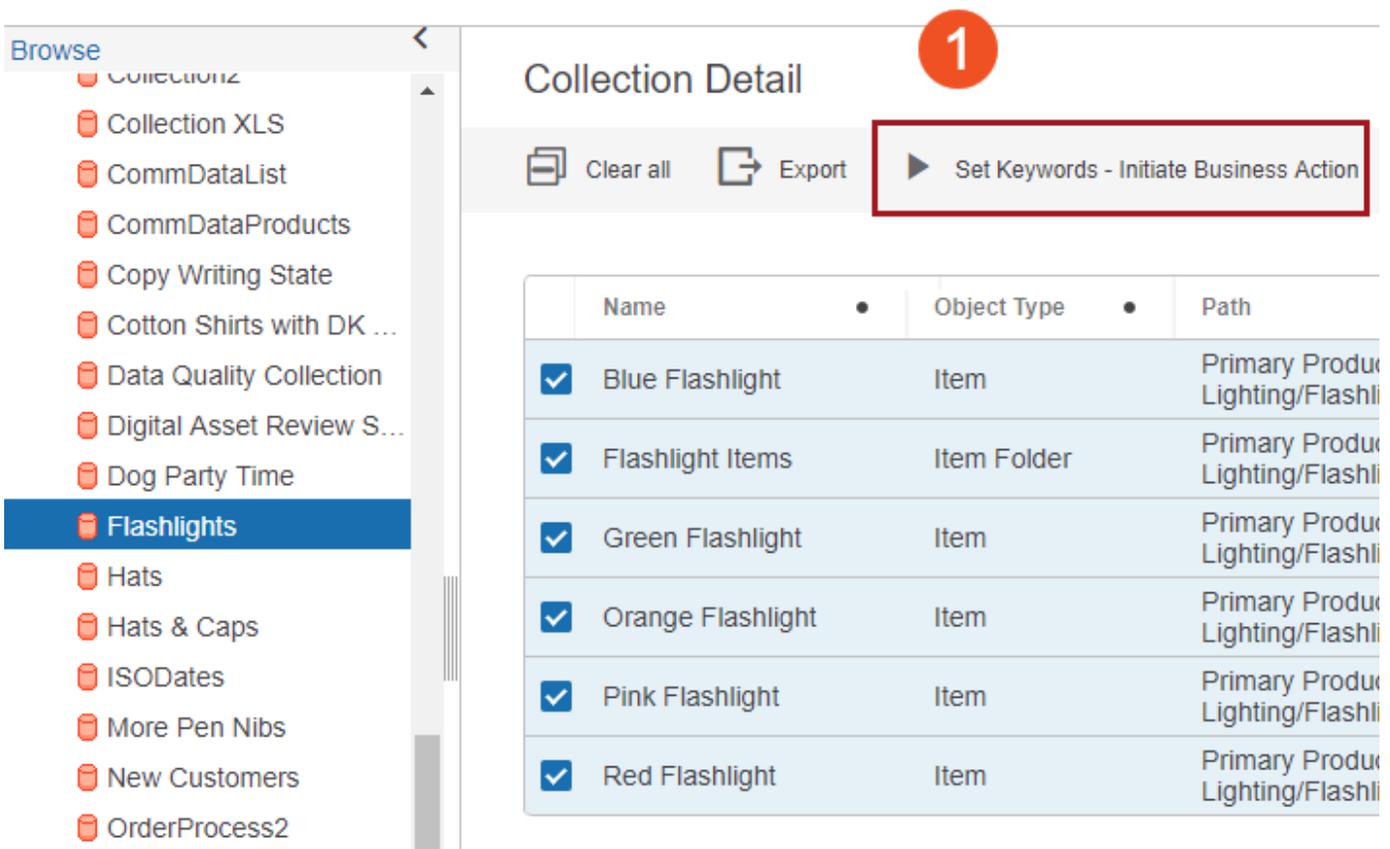
Run a Business Rule on a Product Collection

This example uses the same Flashlights collection as shown in the previous example for bulk updates, except the keywords are set using a business rule.

- The **Set Asset Keywords** business action operation is configured in the workbench in a similar fashion to the bulk update detailed above, by choosing the Primary Product Image asset reference type.



2. In the Web UI, the Flashlights collection is selected on the Collection Detail screen, and all objects within the collection are selected.
3. Click the 'Initiate Business Action' button to run the business rule, which is labeled 'Set Keywords - Initiate Business Action' in this example. For information on how to add an action button to a Node List Properties screen, see the **Action Button Configuration on a Node List** topic in the **Web User Interfaces** documentation.



4. After the business rule executes, The keywords are set on the referenced Primary Product Image assets, as shown in the screenshot provided in the previous 'Run a Bulk Update on a Product Collection' subsection.

On Import of Assets

Another example of where a Set Asset Keywords business action can be executed on assets is when they are imported into STEP. The below screenshot shows a sample Asset Importer Configuration where the **Set Asset Keywords** business rule has been specified to run on import. For more information on adding business rules to Asset Importer Configurations, see the **Business Rules** section of the **Asset Importer** documentation.

The screenshot displays the configuration interface for the 'JPEG Importer rev.0.4'. On the left, the 'System Setup' tree shows the 'Asset Importer' folder expanded to 'JPEG Importer'. A red arrow points from this folder to the configuration pane on the right. The configuration pane shows various components like 'Product Linker', 'Approver', 'Auto Purger', 'Workflow Handler', and 'Business Rules'. The 'Business Rules' section is expanded to show a table of rules:

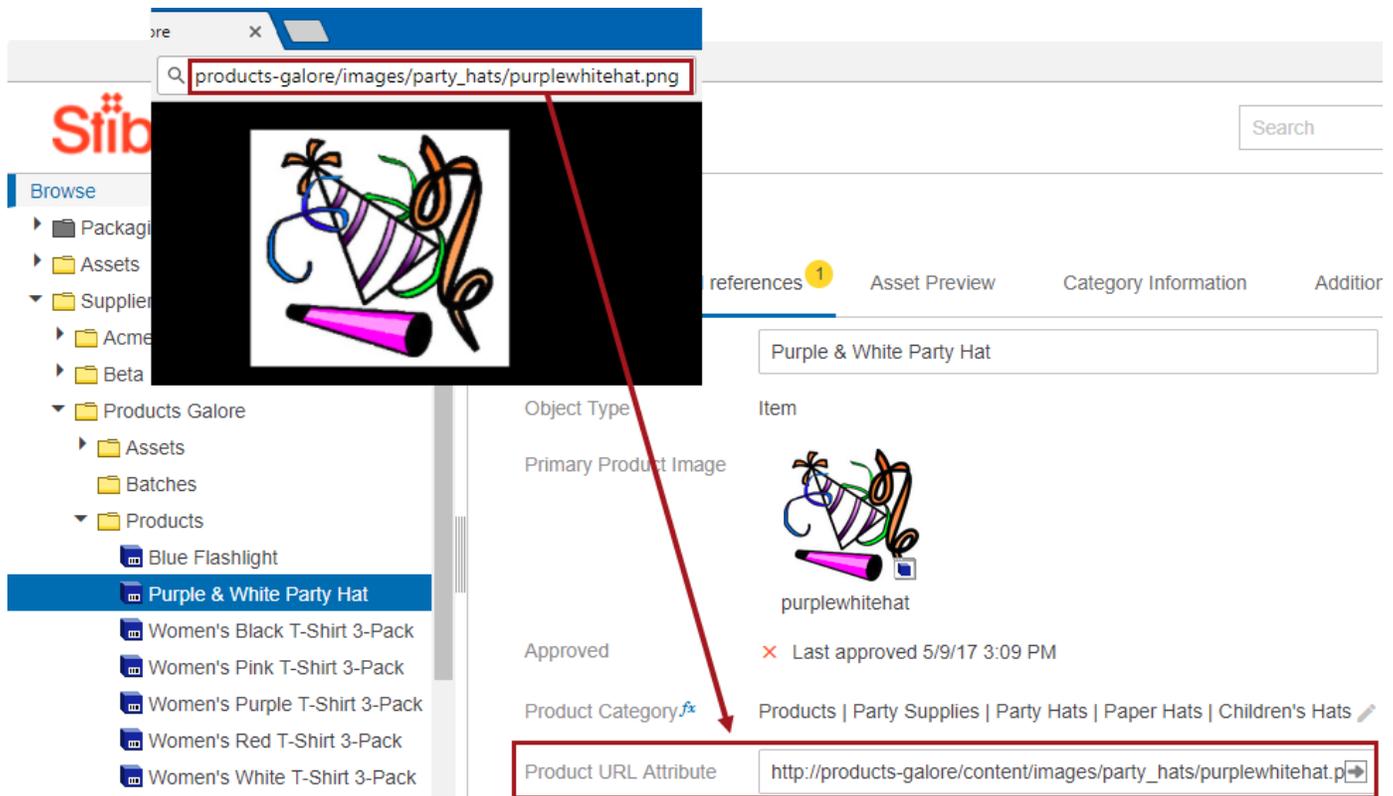
Business Rules	
> Business Condition	...
> Business Action	Set Asset Keywords (AssetAnalyzer.SetAssetKeywords) ...

Asset Download

Asset Download is an add-on component for STEP that enables users to provide a URL to an asset on a product and have STEP automatically download the asset. This functionality allows users—typically suppliers—to efficiently create and/or replace their business-critical assets in STEP, adding an additional layer of flexibility in how they can manage and store the assets and images that need to be linked to their products.

The Asset Download component enables STEP to pull assets (e.g., images) from external URLs, store them in supplier asset classification structures, and link them to products in an automated operation. It can be used from within the Web UI, workbench, and during imports—i.e., any location where bulk updates and business actions can be run. This functionality can be used for non-image assets as well, such as owners manuals, MSDS sheets, videos, and so forth.

This feature supports both the download of new assets and the replacement of existing assets. Users can have an asset downloaded from the web by providing the image URL as an attribute value on the product to which the asset will be linked. Through a bulk update operation, or a business action invoked from, for instance, an import or workflow transition, STEP fetches the asset from the URL, stores it in a specified supplier asset classification hierarchy, then links it to the product using a specified asset reference type. The same processes can also be used to replace the content of existing assets. The image URL is checked against previously downloaded assets to determine whether to replace an existing asset or create a new one.



Prerequisites and Considerations for Using Asset Download

- Your STEP server must be able to communicate externally with the location of the specified URL attribute value before assets can be downloaded.

- Standard Asset Download functionality will only work on **supplier** products, which are products that are linked into a supplier product classification. However, the actual execution of the features (such as the running of an asset URL bulk update or business rule, detailed within this documentation section) can be performed by any STEP user.

If you need to work with non-supplier products or perform other non-standard operations, such as asset content replacement, you can script an 'Execute JavaScript' business action using the public JavaScript API method, which is detailed in the **Configuring Asset Download - Business Rules and Bulk Updates** topic.

- The executing user for Asset Download business rules and bulk updates must have the required permissions, which include, but are not limited to, writing values to the specified URL attribute, linking assets to products, and linking assets to classification structures.

Topics Covered in This Guide

This guide / documentation section covers the following topics:

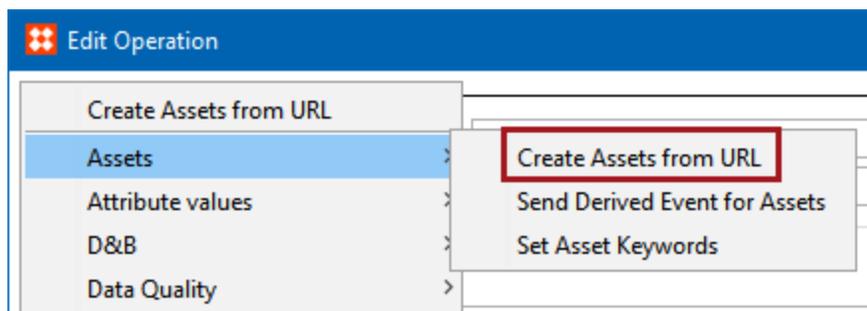
- Configuring Asset Download - Business Rules and Bulk Updates
- Configuring Asset Download - Additional Configurations
- Asset Download Component Model
- Using Asset Download

Configuring Asset Download - Business Rules and Bulk Updates

When the Asset Download component is first installed, many of the configurations necessary to run the solution are installed automatically. This topic covers the pre-configured business action operation 'Create Assets from URL,' the public JavaScript API method to download assets, and the 'Create Assets from URL' bulk update operation.

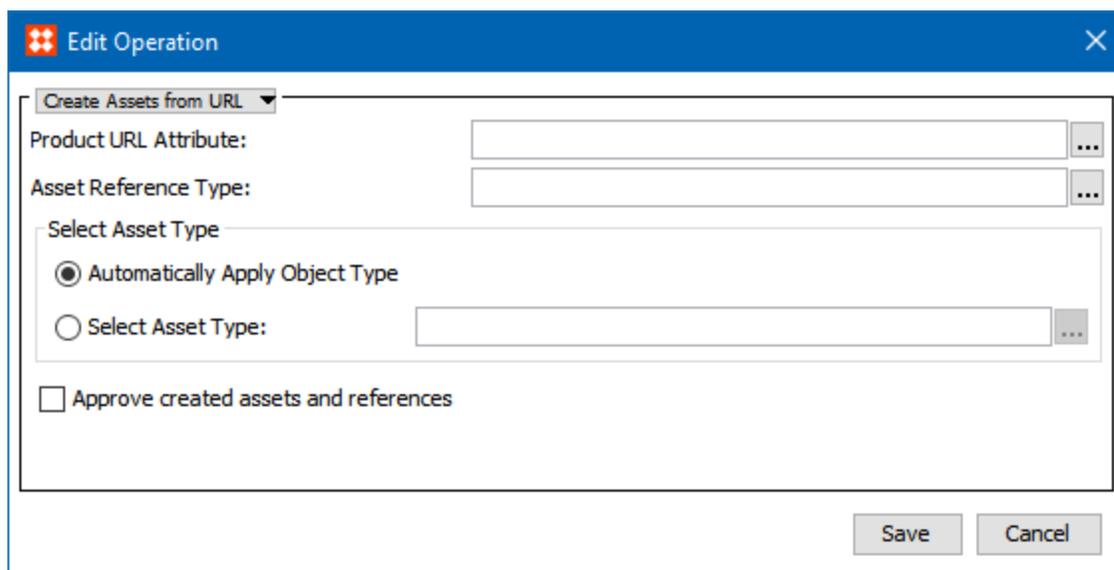
Create Assets from URL – Business Action Operation

Though a business rule itself is not created when Asset Download is installed, a business action *operation* for asset downloads is created, called **Create Assets from URL**, which is located under the **Assets** category. This action is used for synchronous operations, meaning that each operation has to wait for another operation to complete before another can be run. The business action works on a product level and looks at a specified attribute which contains asset file URLs. If a file URL is found, the asset is downloaded, created, and an asset reference is created according to the configuration.



Create Assets From URL - Business Rule Configurations

The following configurations are required for the business action to function.



- **Product URL Attribute:** This field contains the URL that exists on the **product** object. Click the ellipsis button (...) to the right of the field to browse to or search for the relevant attribute. Only one attribute can be selected.
- **Asset Reference Type:** Specify the asset reference type that will be used to link the downloaded asset to the product object(s). Click the ellipsis button (...) to the right of the field to browse to or search for the relevant asset reference type. Only one reference type can be selected.
- **Automatically Apply Object Type:** The default is for the object type to be automatically applied, based on the asset's MIME Type. To explicitly specify the asset type, use the 'Select Asset Type' option.
- **Select Asset Type:** Choose a specific asset type to apply to the asset that is downloaded from the URL. When the Select Asset Type radio button is selected, the ellipsis button (...) to the right of the field is activated. Click the ellipsis button (...) to browse to or search for the relevant asset type. Only one asset type can be selected.
- **Approve created assets and references:** Check this box to automatically approve the downloaded assets and their reference links.

The following is a sample configuration for this business action:

The screenshot shows a dialog box titled "Edit Operation" with a close button (X) in the top right corner. The main content area is titled "Create Assets from URL" and contains the following fields and options:

- Product URL Attribute:** A text field containing "Product URL Attribute (ProductURLAttribute)" with an ellipsis button (...).
- Asset Reference Type:** A text field containing "Primary Product Image (PrimaryProductImage)" with an ellipsis button (...).
- Select Asset Type:** A section with two radio buttons:
 - Automatically Apply Object Type
 - Select Asset Type: A text field containing "Product Image (ProductImage)" with an ellipsis button (...).
- Approve created assets and references

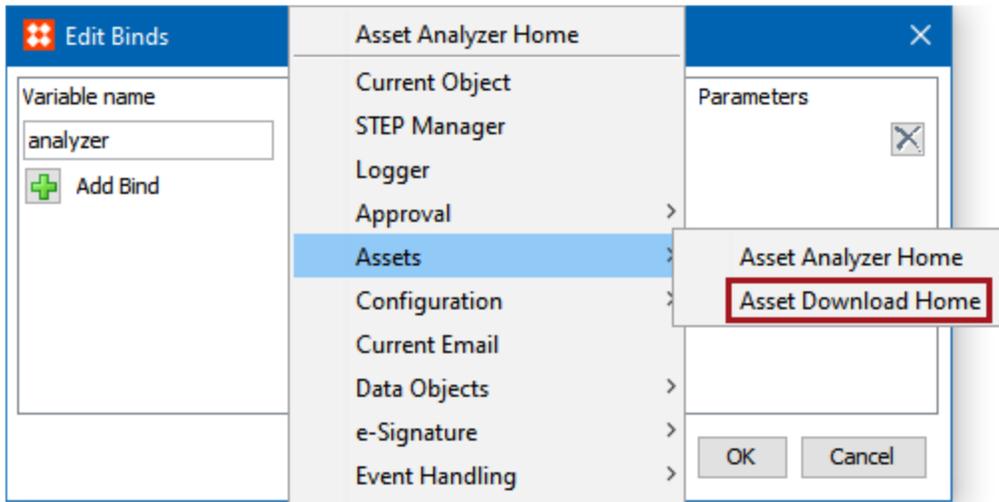
At the bottom right of the dialog box are two buttons: "Save" and "Cancel".

Public JavaScript API Method to Download Assets

A public API JavaScript method is also created upon installation of the Asset Download component, which is used to handle scenarios outside of those covered by the Create Assets from URL business action. This method, called **downloadAssetContent**, is used with the **Asset Download Home** bind that is found under the **Assets** category for **Execute JavaScript** business actions.

Two possible use cases for using the scripting API to create assets from a URL are:

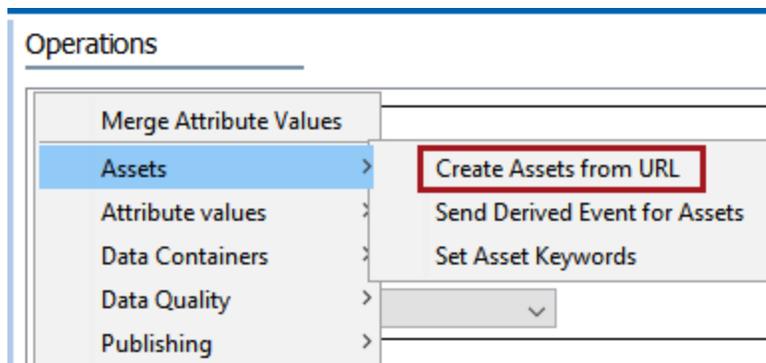
- Allowing for asset download actions to be performed on non-supplier products
- Executing an asset download action on **asset** objects, which can be used to replace the content of these assets. This use case is described in the **Using Asset Download** topic.



For more information on the STEP Scripting API, see the **JavaScript in STEP** section of the **Resource Materials** online help.

Create Assets from URL – Bulk Update Operation

A category of bulk update operations named **Assets** is created when Asset Download is installed, which contains the asset download bulk update operation **Create Assets from URL**. The bulk update operation is configured and behaves in identically to the 'Create Assets from URL' business action described earlier in this topic.



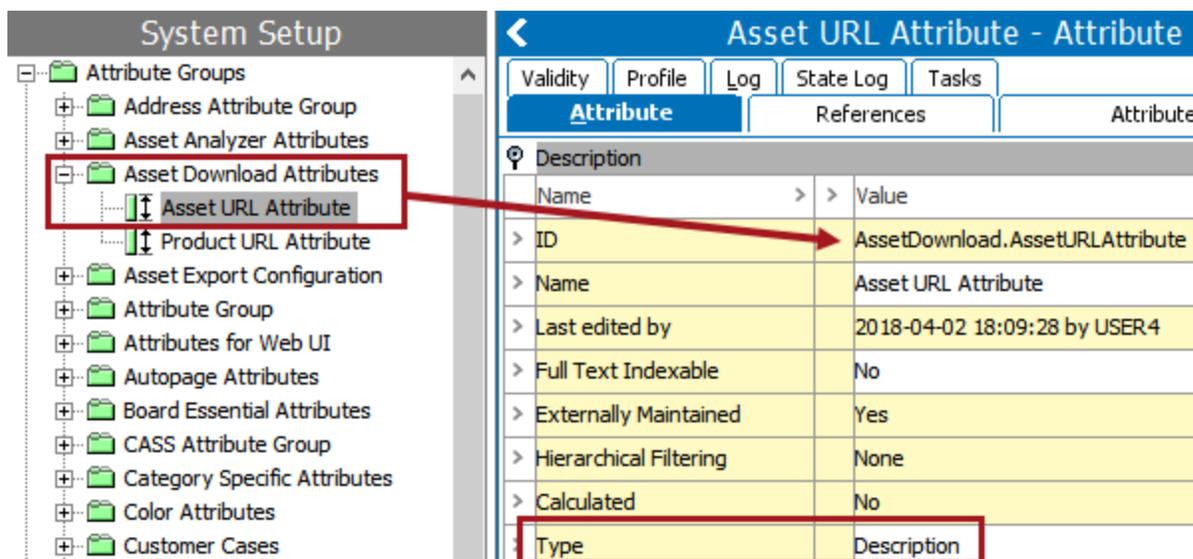
The screenshot shows a software window titled "Bulk Update" with a close button in the top right corner. On the left side, there is a "Steps" sidebar with five items: "1. Configuration", "2. Operations" (which is bolded and highlighted), "3. Parameters", "4. Preview", and "5. Advanced". The main area is titled "Operations" and contains a configuration box for a new operation. At the top of this box is a dropdown menu set to "Create Assets from URL". Below it are two text input fields: "Product URL Attribute:" and "Asset Reference Type:", each followed by a three-dot menu icon. A "Select Asset Type" section contains two radio button options: "Automatically Apply Object Type" (which is selected) and "Select Asset Type:" followed by a text input field and a three-dot menu icon. At the bottom of the configuration box is a checkbox labeled "Approve created assets and references". Below the configuration box is a blue "Add Operation" button. At the very bottom of the window are four buttons: "Back", "Next", "Finish", and "Cancel".

Configuring Asset Download - Additional Configurations

When the Asset Download component is first installed, many of the configurations necessary to run the solution are installed automatically. Some additional settings must also be configured under Users & Groups > System Settings to enable Asset Download. This topic covers the pre-configured attribute (Asset URL Attribute) and unique key (Asset URL Key), as well as the settings that must be configured in System Settings under 'Asset Download Settings' and 'Web UI Settings.'

Asset URL Attribute

An attribute group named **Asset Download Attributes** (AssetDownload.Attributes) is created upon installation that contains a description attribute named **Asset URL Attribute** (AssetDownload.AssetURLAttribute). This attribute is valid for asset object types and stores the URL (from which the image is downloaded) on the asset.

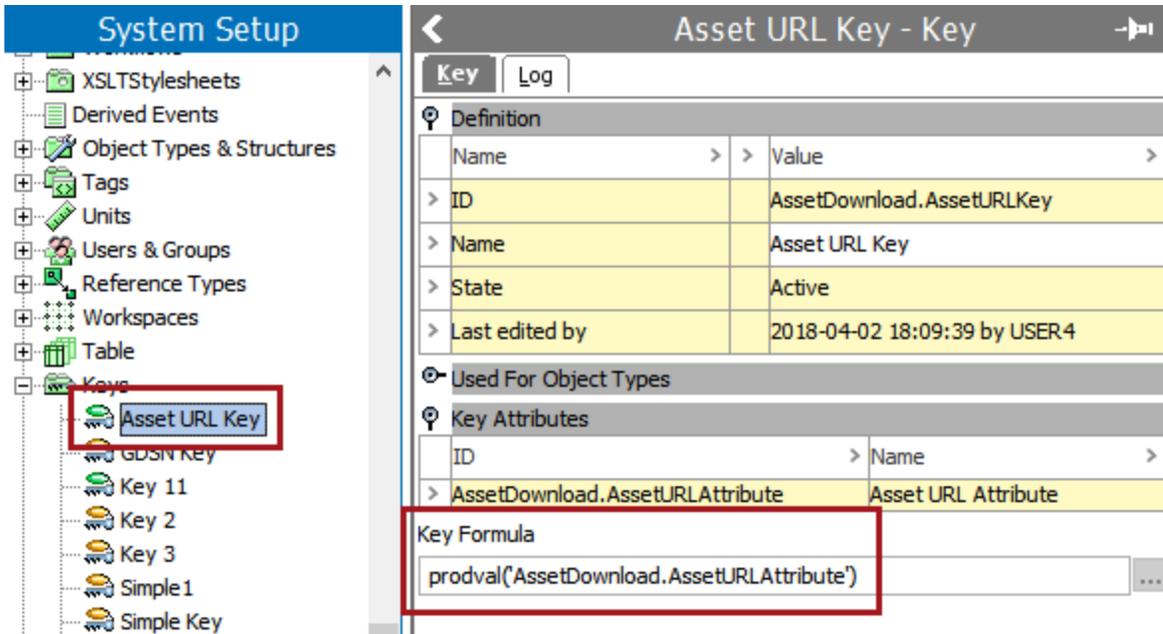


Note: The attribute that is valid on **product** objects, which contains the asset's URL, is *not* automatically created; it must be created by users. In the above screenshot, this attribute is named 'Product URL Attribute' and has been stored in the Asset Download Attributes folder alongside the Asset URL Attribute. However, any attribute can be used whose validation base type is **Text** or **URL**. It can be either a specification or a description attribute, and can also be either single or multi-valued, in case multiple assets need to be linked to a single product using an asset reference type that allows multiple references.

Asset URL Key

When Asset Download is installed, a unique key named **Asset URL Key** (AssetDownload.AssetURLKey) is created upon installation that is used to return the value of the Asset URL Attribute when identifying whether or not an asset has already been downloaded. By default, all asset types in the system are valid for the key. The Key Attribute is **Asset URL Attribute** and the Key Formula is based on the value of this attribute. The formula is:

```
prodval('AssetDownload.AssetURLAttribute')
```

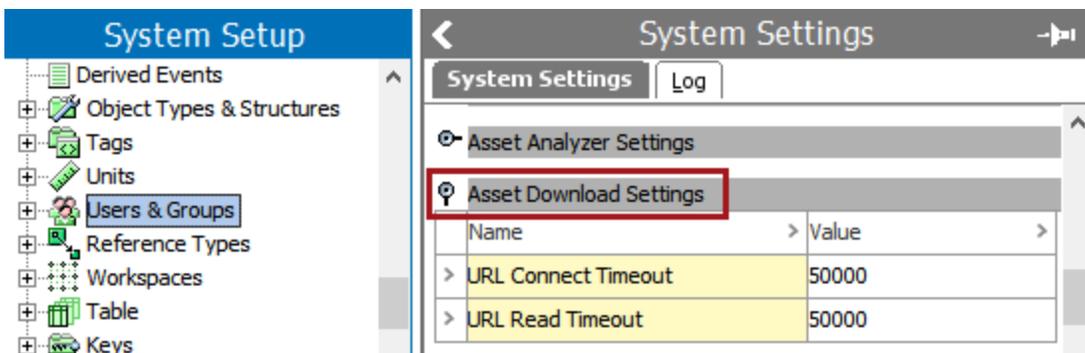


System Settings

To enable the Asset Download component, a number of settings must be specified in System Setup > Users & Groups > System Settings under the **Asset Download Settings** and **Web UI Settings** categories.

Asset Download Settings

Two settings are available under Asset Download Settings: **URL Connect Timeout**, which specifies how long the system should wait before it gives up on connecting to the URL, and **URL Read Timeout**, which specifies the time allowed to download the asset. By default, the value for each is 50000 milliseconds.



Web UI Settings

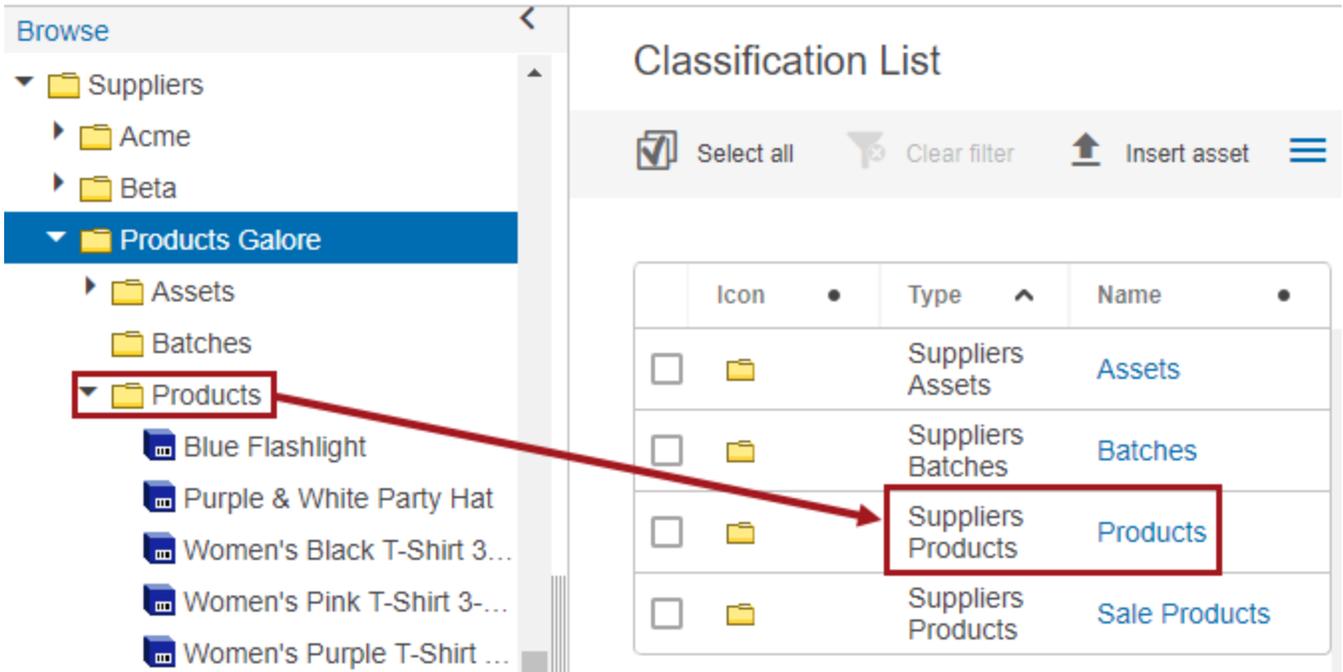
Since the Asset Download component is geared toward supplier users who work exclusively in Web UI, a number of Web UI Settings must first be specified in System Settings that are related to supplier classification hierarchies. This section highlights the three primary Web UI settings that are needed to enable Asset Download. The full list of these settings is detailed in the **Web UI Settings** topic in the **System Settings / Super User Guide** documentation.

The settings related to Asset Download are as follows. The numbers in the screenshot correspond to the entries in the numbered list that appears directly beneath.

System Settings		Log
Web UI Settings		
Name		Value
> Control override meta attribute		
> Default context		Context1
> Default workspace		Main
> Web UI supplier classification object type		SuppliersRoot
> Web UI supplier products classification object type	1	SuppliersProducts
> Assets classification object type	2	SuppliersAssets
> Batches classification object type		SuppliersBatches
> Batch classification object type		SuppliersBatch
> Excel-template asset		QuickSheetTemplate
> Proof view stylesheet attribute		
> Step-users Web UI batches folder		SuppliersBatches
> Step-users Web UI assets folder		SuppliersAssets
> Context Help metadata attribute		AttributeHelpText
> Link type for vendor classification to product link	3	SupplierLink
> Enable all-view for users that are a member of multiple suppliers		Y

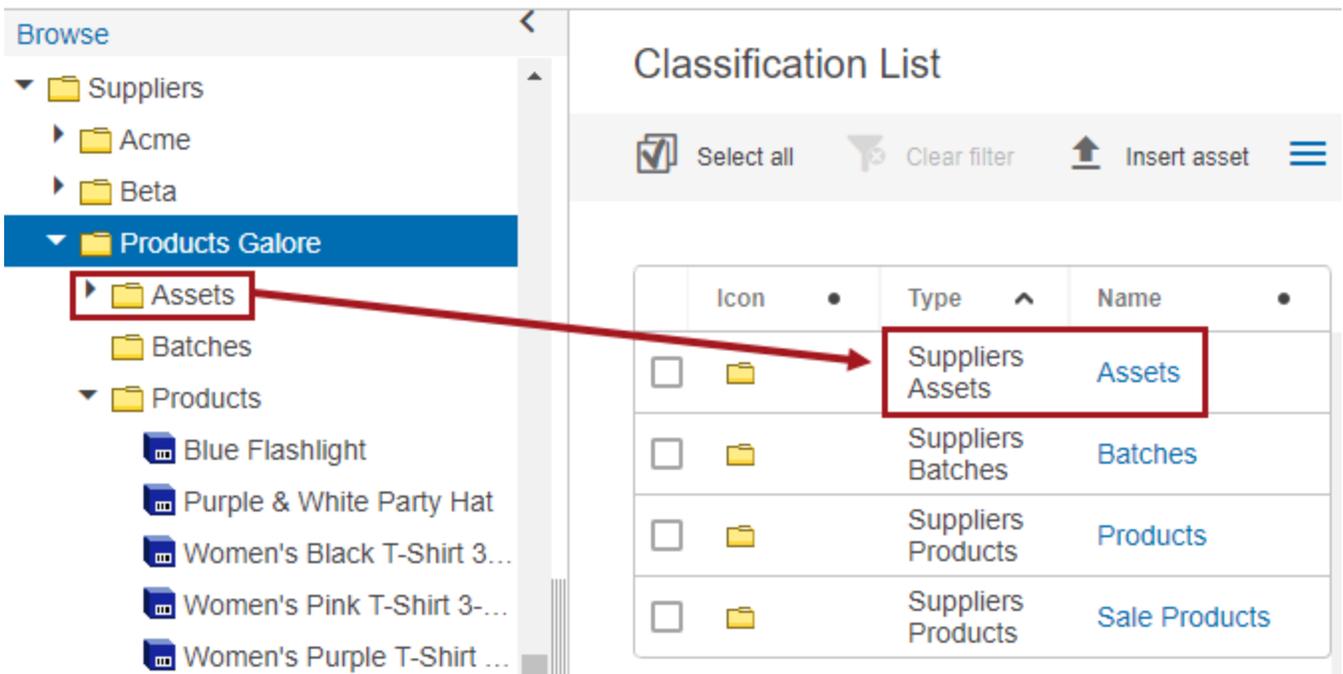
1. **Web UI supplier products classification object type:** This setting specifies the object type of the folder in the supplier classification hierarchy that will be used to store **product** objects. For this example, the specified object type is Suppliers Products (SuppliersProducts).

The below screenshot shows a Web UI Classification Screen that displays a list of child folders in the 'Products Galore' classification structure. The folder named 'Products' is of the object type Suppliers Products (SuppliersProducts). So, for this example, this will be a valid folder in which to store products that will be used for Asset Download.



2. **Assets classification object type:** This setting specifies the object type of the folder in the supplier classification hierarchy that will be used to store **asset** objects. For this example, the specified object type is Suppliers Assets (SuppliersAssets).

The below screenshot shows the same 'Products Galore' classification structure. The folder named 'Assets' is of the object type Suppliers Assets (SuppliersAssets). So, for this example, this will be a valid folder in which to store assets that will be used for Asset Download.



3. **Link type for vendor classification to product link:** This setting specifies the product to classification **link type** that will be used to link **product** objects into supplier product folders in the supplier classification hierarchy. For this example, the specified link type is Supplier Link (SupplierLink).

The below screenshot shows the same 'Products Galore' classification structure, this time with a product object selected. The product's references are shown in the Multi Edit Display Mode component. The link to the parent Products folder is of the type Supplier Link (SupplierLink). So, for this example, this will be a valid link type to connect product objects to the supplier product folders used for Asset Download.

The screenshot displays the 'Browse' pane on the left with a tree view of the classification structure. The 'Products Galore' folder is expanded, showing sub-folders for 'Assets', 'Batches', and 'Products'. Under 'Products', several product items are listed, with 'Purple & White Party Hat' selected and highlighted in blue. A red arrow points from this selected item to the 'Reference type' cell in the table below.

The 'Item' pane on the right shows 'Basic Information and references' (with a notification badge '1') and 'Asset Preview'. Below this are buttons for 'Select all', 'Clear filter', and 'Add Reference'.

	<input type="checkbox"/>	Purple & White Hat	<input type="checkbox"/>	Products
Reference type	•	Primary Product Image		Supplier Link
Icon	•			
ID	•	254921		Products
Type	•	Product Image		Suppliers Products

Asset Download Component Model

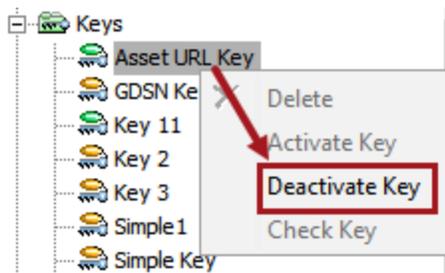
The Asset Download component model enables the specification of:

- The attribute used to store the asset URL on asset objects, which is, by default, **Asset URL Attribute** (AssetDownload.AssetURLAttribute)
- The valid asset object types for the Asset Download component

By default, all asset object types are automatically included in the component model. Since some of these asset types may never be used with the Asset Download component, you can remove them by following these steps:

Removing an Asset Object Type from the Asset Download Component Model

1. Deactivate the **Asset URL Key** by selecting the key in System Setup, then right-click and select Deactivate Key.



2. With the Key still selected, locate the object type that you want to remove under the **Used for Object Types** flipper on the **Key** tab.
3. Right-click on the arrow in the row containing the object that you want to remove, then click **Remove Object Type**. This example uses the 'CASS Certification Report' asset object type.

Asset URL Key - Key

Key Log

Definition

Name	Value
ID	AssetDownload.AssetURLKey
Name	Asset URL Key
State	Inactive
Last edited by	2018-05-06 19:03:51 by USER4

Used For Object Types

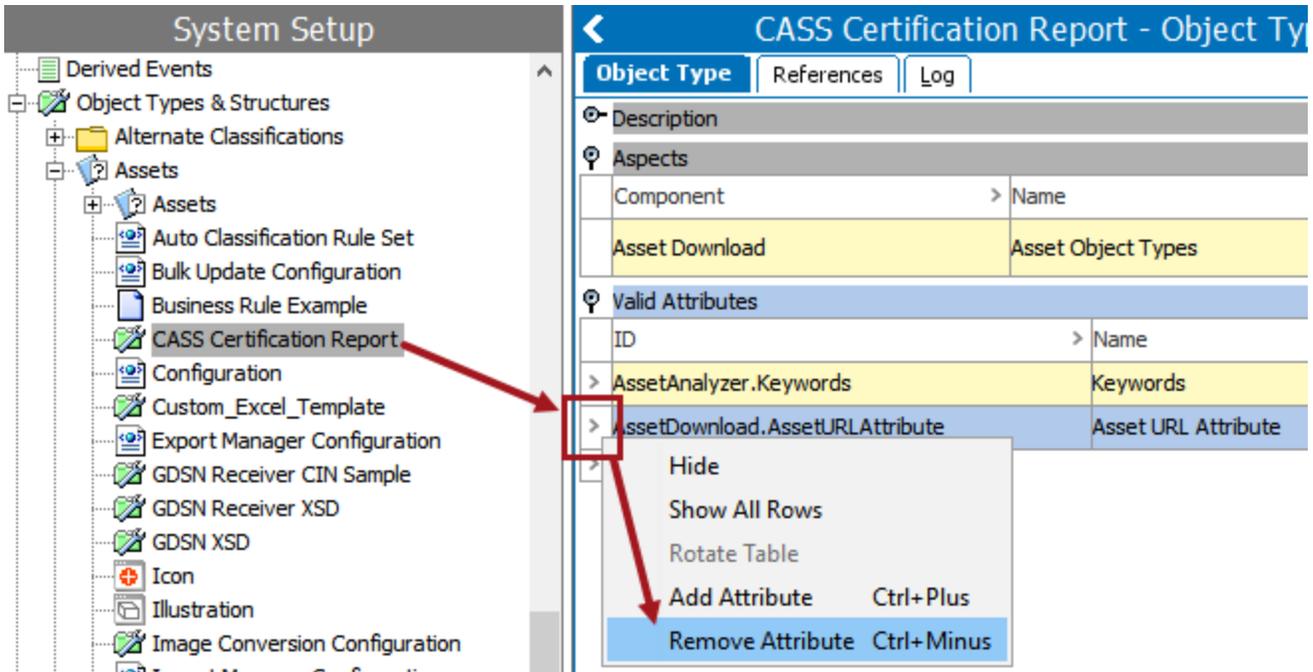
ID	Name
Logo	Logo
ProductVideo	Product Video
InstallationManual	Installation Manual
Icon	Icon
OwnersManual	Owners Manual
MSDS	MSDS
ProductImage	Product Image
CASSCertificationReport	CASS Certification Report

Context Menu:

- Hide
- Show All Rows
- Rotate Table
- Add Object Type Ctrl+Plus
- Remove Object Type Ctrl+Minus**

Add Object Type

- Next, locate the asset object type under System Setup > Object Types & Structures > **Assets** and select it.
- Under the **Valid Attributes** flipper, right-click on the arrow in the row containing the AssetDownload.AssetURLAttribute attribute, then click **Remove Attribute**.



6. While still in System Setup, select the **Asset Download** component model (under Component Models), then click the 'Edit' hyperlink. The **Edit Component Model Configuration** window displays.
7. Double-click on the **X** next to the object type that you want to remove from the component model.

System Setup

- Table
- Keys
- Event Queues
- Component Models
 - Address Component Model
 - Asset Analyzer
 - Asset Download**
 - Auto Classification Model
 - Country Aliases
 - Email Component Model
 - External Stored Assets Model
 - GDSN Provider model
 - GDSN Receiver model
 - Google Shopping Model
 - Matching
 - Matching - Link Golden Record
 - Matching - Merge Golden Record
 - Packaging
 - Product Variant Model
 - Publishing - Assetpush Queue
 - Publishing - Flatplan Workflow
 - Publishing - Freeze
 - Publishing - Milestone Settings
 - Publishing - Node with Pickup
 - Publishing - UI Filtering
 - Reference Data Address Street
 - Reference Data Address Witho

Asset Download - Component Model Configuration

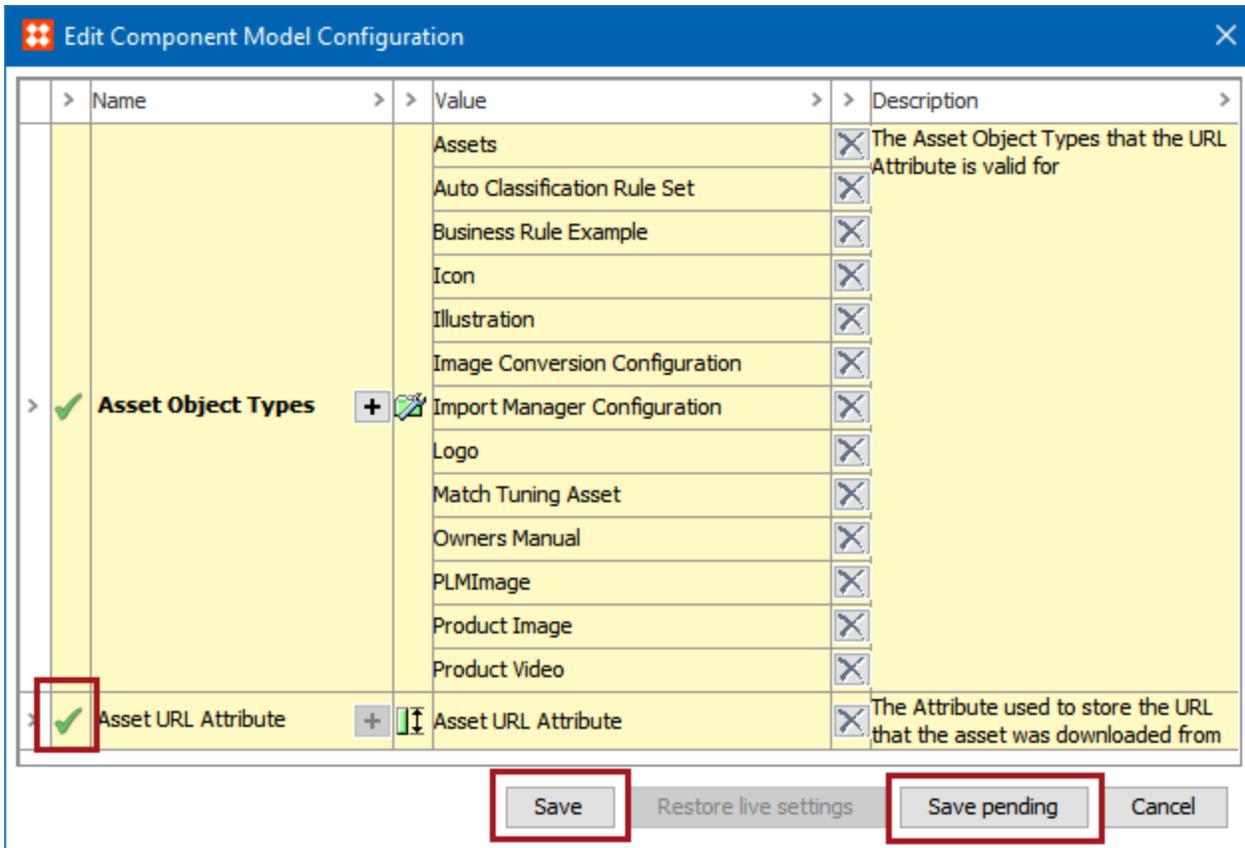
Component Model Configuration

Name	Value	Desc
Assets	Assets	The / that valid
Auto Classification Rule Set	Auto Classification Rule Set	
CASS Certification Report	CASS Certification Report	
Icon	Icon	
Illustration	Illustration	
Image Conversion Configuration	Image Conversion Configuration	
Import Manager Configuration	Import Manager Configuration	
Logo	Logo	
Match Tuning Asset	Match Tuning Asset	
Owners Manual	Owners Manual	
PLMImage	PLMImage	
Product Image	Product Image	
Product Video	Product Video	
Asset URL Attribute	Asset URL Attribute	The / store asse/ from

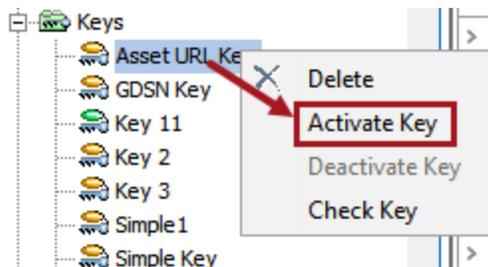
Edit Component Model Configuration

Name	Value	Desc
Assets	Assets	
Auto Classification Rule Set	Auto Classification Rule Set	
CASS Certification Report	CASS Certification Report	
Icon	Icon	
Illustration	Illustration	
Image Conversion Configuration	Image Conversion Configuration	
Import Manager Configuration	Import Manager Configuration	
Logo	Logo	
Match Tuning Asset	Match Tuning Asset	
Owners Manual	Owners Manual	
PLMImage	PLMImage	
Product Image	Product Image	
Product Video	Product Video	

8. If the object type can be successfully removed, the red X next to Asset URL Attribute will change to a green check mark. The red X was present because there was an object type in the component model that was not valid for the Asset URL Attribute, e.g., the CASS Component Model object type.



- The **Save** and **Save pending** buttons are activated. Click **Save** to remove the asset object type and close the 'Edit Component Model Configuration' dialog. Click **Save pending** to keep the live configuration as-is and make additional changes later.
- Re-activate the **Asset URL Key** by selecting the key, right-clicking, and selecting **Activate Key**.

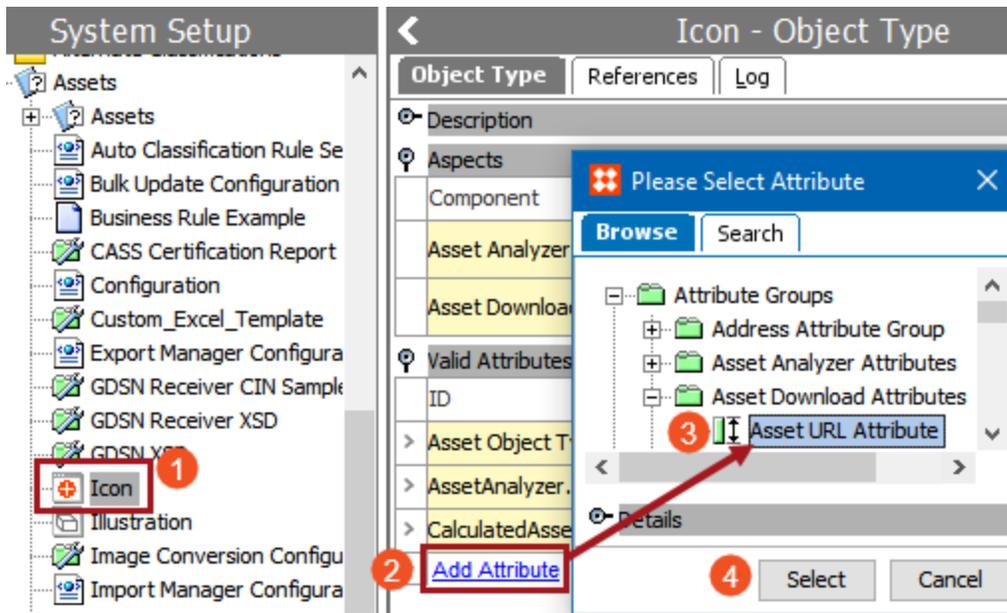


Adding an Asset Type to the Asset Download Component Model

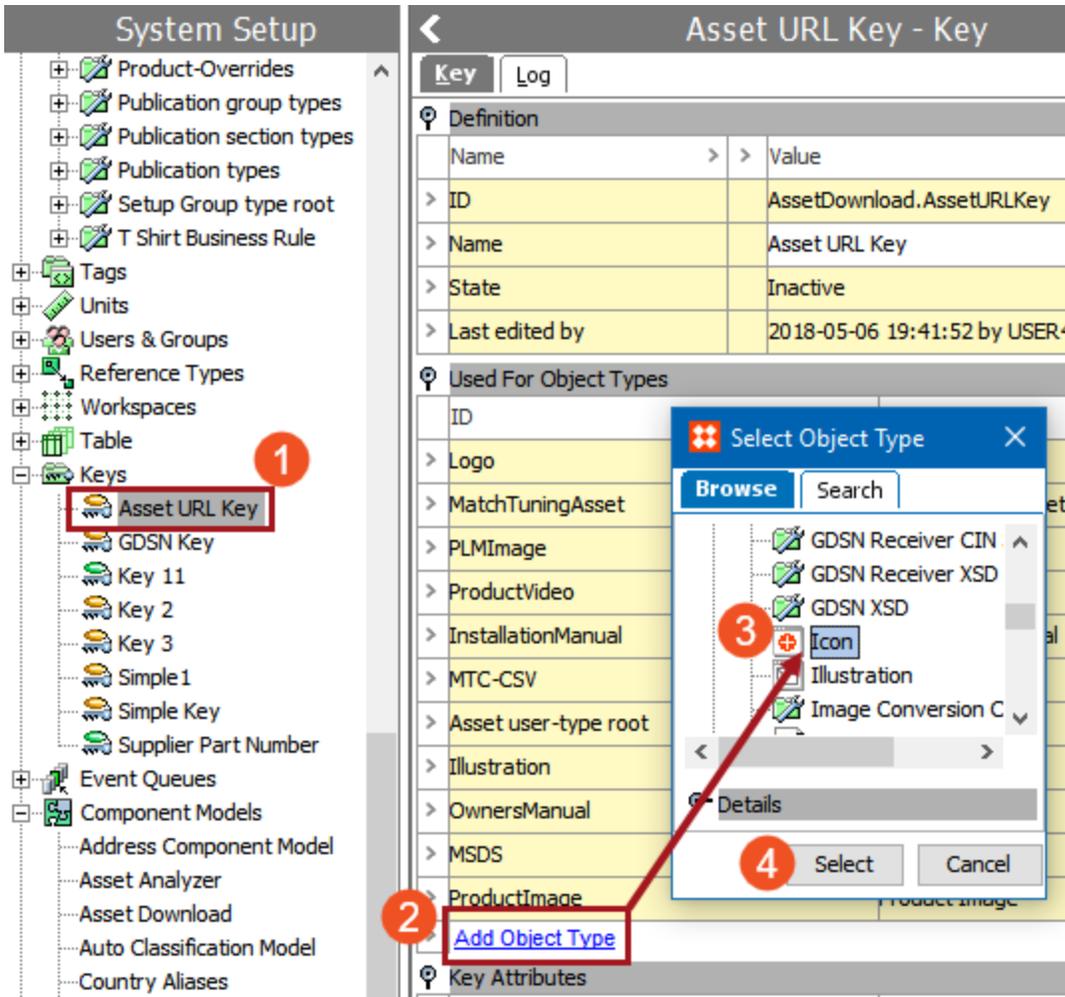
To add a new asset object type or re-add a previously deleted asset object type to the component model:

- Deactivate the **Asset URL Key** following the steps outlined in the previous subsection.
- Locate the asset object type that you want to add to the component model under System Setup > Object Types & Structures > **Assets**. In the following example, the **Icon** object type is used.
- With the object type selected, click the **Add Attribute** hyperlink under the 'Valid Attributes' flipper on the **Object Type** tab.

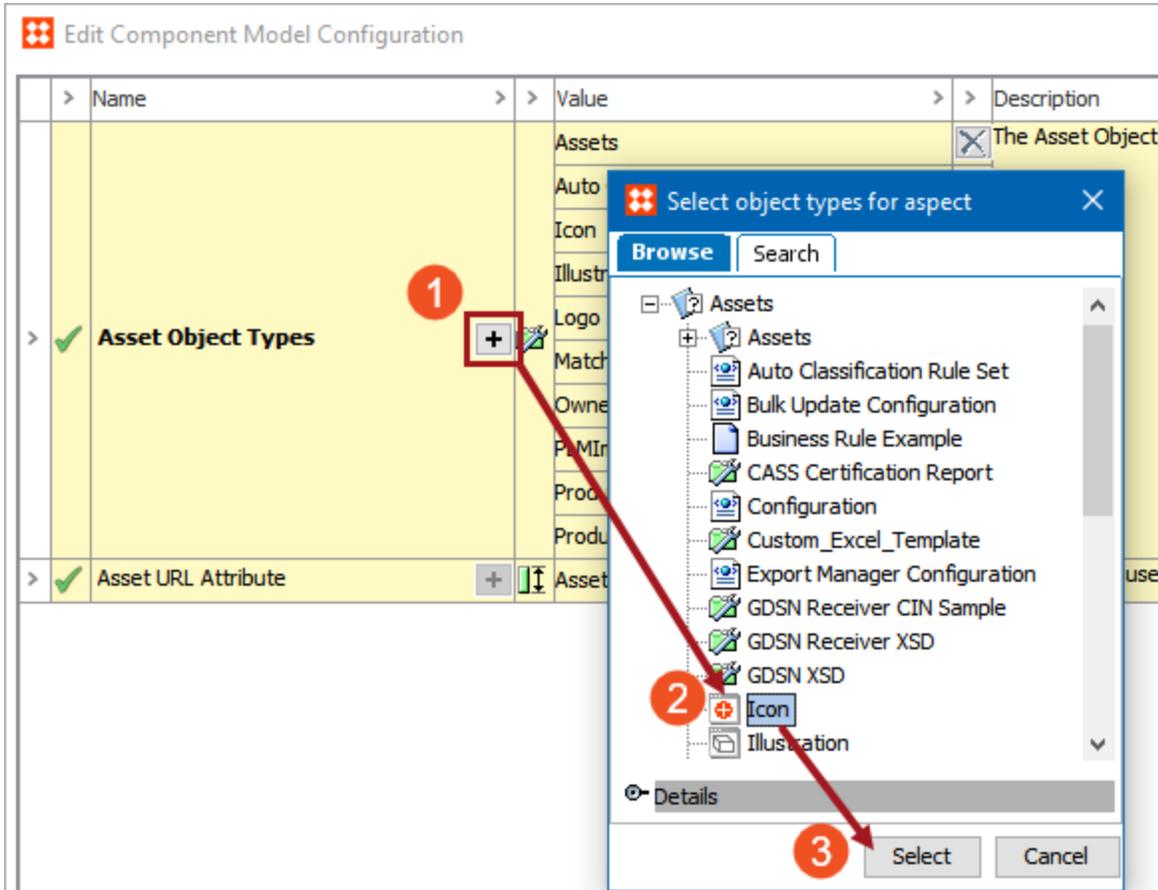
- In the attribute dialog, browse to or search for the **Asset URL Attribute**, then click **Select**.



- Return to the **Asset URL Key** and click the 'Add Object Type' hyperlink under the 'Used for Object Types' flipper on the **Key** tab.
- In the 'Select Object Type' dialog, browse to or search for the relevant object type, then click **Select**.



7. Go to the **Asset Download** component model and launch the 'Edit Component Model Configuration' dialog by following the steps outlined in the previous sub-section
8. Double-click the plus sign icon to launch the **Select object types for aspect** dialog.
9. Select the asset object type(s) that you want to add to the component model, then click **Select**.



10. Click **Save** to close the 'Edit Component Model Configuration' dialog.
11. Reactivate the Asset URL Key by following the steps outlined in the previous subsection.

Using Asset Download

The Asset Download component enables users to download assets from URLs and link them to supplier products by performing bulk updates or executing business actions on these products. By using the **downloadAssetContent** public API JavaScript method, users can perform any number of additional operations, such as downloading assets to non-supplier products, or executing an action on **asset** objects to replace their content.

Multiple assets can be downloaded onto multiple products in single actions, including, but not limited to: bulk updates; as part of a workflow; as part of an import; or executed based on events via an event processor. This functionality can also be used for non-image assets, such as owners manuals, MSDS sheets, and so forth.

The following examples describe a small selection of use cases and possible setups for using the Asset Download component.

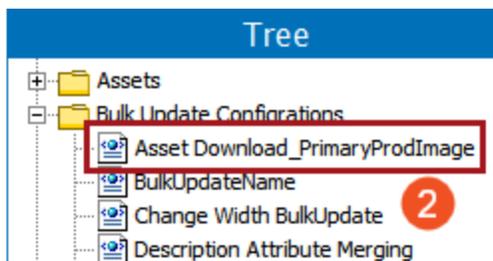
Run a Bulk Update on a Product Collection

This example shows how assets can be downloaded and linked to products by performing a bulk update on a collection of T-Shirt products in the Web UI. This example will download images and link them to the products using the Primary Product Image asset reference type. Setups must be performed both in STEP Workbench and the Web UI to enable the solution. The same type of operation could also be used for scheduled bulk updates, which could be run overnight to enrich a larger number of products with images.

Workbench Configurations

1. The required settings under Users & Groups > System Settings > **Web UI Settings** must first be configured so the system will know where to store the downloaded assets. For more information on these settings, see the 'System Settings' subsection of the **Configuring Asset Download - Additional Configurations** topic.
2. Additionally, the product(s) that will be linked to assets must first be linked to a supplier product folder of a specified classification object type, using a specified vendor classification to product link. Both of these settings are also configured under **Web UI Settings**.
3. The **Create Assets from URL** bulk update will be configured, then saved as a bulk update configuration. In this example, the configuration is named 'Asset Download_PrimaryProdImage.'

For more information on how to configure a 'Create Assets from URL' bulk update operation, see the **Configuring Asset Download - Business Rules and Bulk Updates** topic. For more information on how to create a bulk update configuration, see the **Bulk Updates** documentation.



4. In System Setup, activate the **Asset URL Key** if it is not already activated. See the **Activating and Deactivating Keys** topic in the **Unique Keys** documentation for more information.

Web UI Setup and Actions

1. In the Web UI, for our example, there are multiple products stored in a **Suppliers** classification structure (1, below) within a **Products** folder (2). The product named 'Women's Pink T-Shirt 3-Pack' (3) is selected, and contains a URL to an asset in the 'Product URL Attribute' field (4).

Note: This attribute is the *user-created* product URL attribute that is valid on *products*, not the Asset URL Attribute, valid on *assets*, that is automatically created when Asset Download is installed. It does not matter if this attribute is populated in the workbench or in the Web UI.

The screenshot displays the Stibo Systems Master Data Management interface. On the left, a 'Browse' tree shows a hierarchy: Suppliers (1) > Products Galore > Products (2). Under 'Products', several items are listed, with 'Women's Pink T-Shirt 3-Pack' (3) selected. On the right, the 'Item' detail view for 'Women's Pink T-Shirt 3-Pack' is shown. The 'Basic Information and references' tab (1) is active, displaying fields: Name (Women's Pink T-Shirt 3-Pack), Object Type (Item), Approved (Never been approved.), Product Category (Apparel | Upper Body Wear | T-shirts | T-shirts Items | Women's Shirts), Product URL Attribute (4) (http://products-galore/images/womens_tshirts/pink3pack.png), and Base Unit of Measure.

2. The 'Women's Pink T-Shirt 3-Pack' product is also included as part of a **collection** named 'Womens 3-Pack T-Shirts.' The screenshot in the next step shows the Collection Detail screen for this collection, with all objects selected.
3. To perform the bulk update, click the **Bulk update action** button, then choose the 'Asset Download_Primary ProdImage' bulk update configuration. For information on how to add an action button to a Node List Properties screen, see the **Action Button Configuration on a Node List** topic in the **Web User Interfaces** documentation.

Browse

- Review_Collection
- Sample Search Collection
- Shoes
- TireCollection
- Tshirt Case
- ▼ Tshirt Group
 - ▶ Men's Tshirts
 - Red Color Collection
 - ▼ Women's Tshirts
 - Size Small
 - Womens 3-Pack T-Shirts**
 - ▶ TShirtItems
 - TshirtsOnly4
 - TXT Load
- ▶ Entity Root
- ▶ Publications
- ▶ Recycle Bin

Collection Detail 1

Clear all Export **Bulk update action**

	Name	Object Type
<input checked="" type="checkbox"/>	Women's Black T-Shirt 3-Pack	Item
<input checked="" type="checkbox"/>	Women's Pink T-Shirt 3-Pack	Item
<input checked="" type="checkbox"/>	Women's Purple T-Shirt 3-Pack	Item
<input checked="" type="checkbox"/>	Women's Red T-Shirt 3-Pack	Item
<input checked="" type="checkbox"/>	Women's White T-Shirt 3-Pack	Item

Bulk Update 2

Enter or select Bulk Update configuration

Asset Download_PrimaryProdImage

OK Cancel

- After the bulk update action process completes, the assets pointed to by the URL in the 'Product URL Attribute' attribute value field are linked to the products. In the below screenshot, the product is selected, and the linked image (pink3pack) displays as the Primary Product Image on the Node Details Screen.

Item

Basic Information and references ¹

Asset Preview

Category Information

Additional Information

Packaging Hierarchy

Name

Select all Clear filter

Object Type Item

Primary Product Image



	<input type="checkbox"/>
	pink3pack
Reference type	• Primary Product Image
Icon	•
ID	• 254762
Type	• Product Image

Approved ✗ Never been approved.

Product Category ^{fx} Apparel | Upper Body Wear | T-shirts | T-shirts Shirts

Product URL Attribute

5. The image (2, below) is also stored in the **Assets** folder (1) in the same supplier classification hierarchy as the **Products** folder (3), which contains the linked product (4). The URL that the image was downloaded from is stored on the image in the **Asset URL Attribute** field (5) as a read-only value.

Browse

- Products Galore
 - 1 Assets
 - Orange Cap
 - 2 pink3pack
 - purplewhitehat
 - T-Shirt Color Assortment
 - Water, 6pk
 - Water, case
 - Water, pack
 - Water, single
 - Batches
 - 3 Products
 - Purple & White Party Hat
 - Women's Black T-Shirt 3-Pack
 - 4 Women's Pink T-Shirt 3-Pack
 - Women's Purple T-Shirt 3-Pack
 - Women's Red T-Shirt 3-Pack
 - Women's White T-Shirt 3-Pack

Asset Detail

Image pink3pack

ID 254762

Asset Type

Name

Asset Keywords

Asset Object Type ^{fx}

Asset URL Attribute 5 http://products-galore/images/womens_tshirts/pink3pack.png

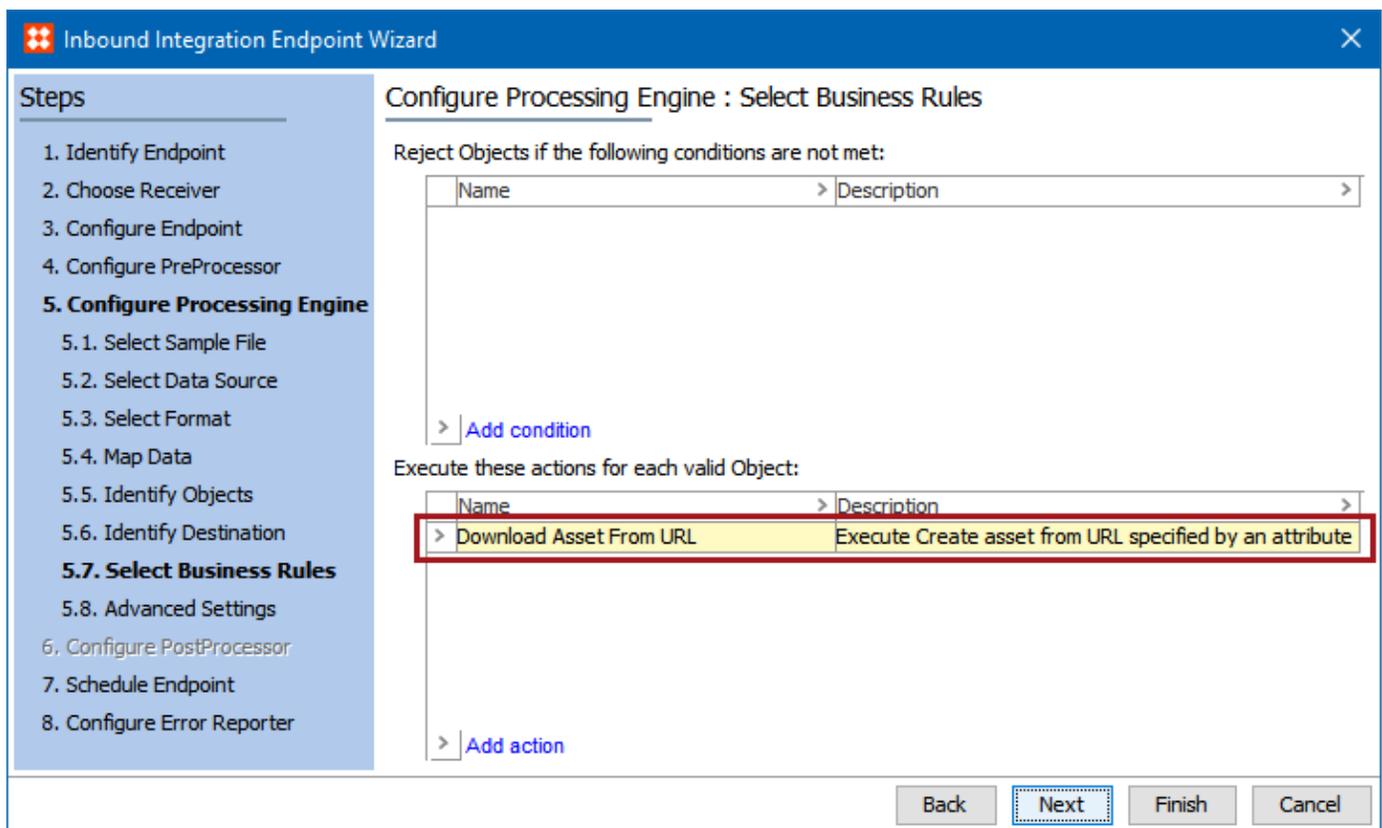
Calculated Asset File Name ^{fx} 254762-pink3pack

On Import of Products

Another example of where a **Create Assets from URL** business action can be executed is when products are imported into STEP. The below screenshot shows a sample screen from the Inbound Integration Endpoint Wizard, where a business rule named 'Download Asset From URL' has been specified to execute for each valid object on import.

This method could, for example, be used as an alternative to the Asset Importer tool (detailed in the **Asset Importer** documentation). By importing a spreadsheet containing supplier products and the attribute values for each asset URL, not only can the products be created, but the assets can also be created, linked to the products, and linked into the assets folder that exists alongside the product folder in the supplier classification hierarchy (both being located inside the same supplier root folder).

For more information on adding business rules to Inbound Integration Endpoints and using business rules on import, see the **IIEP - Configure STEP Importer Processing Engine** section of the **Inbound Integration Endpoints** documentation and the **Import Manager - Select Business Rules** section of the **Import Manager** documentation.



Asset Content Replacement – Public JavaScript API Method

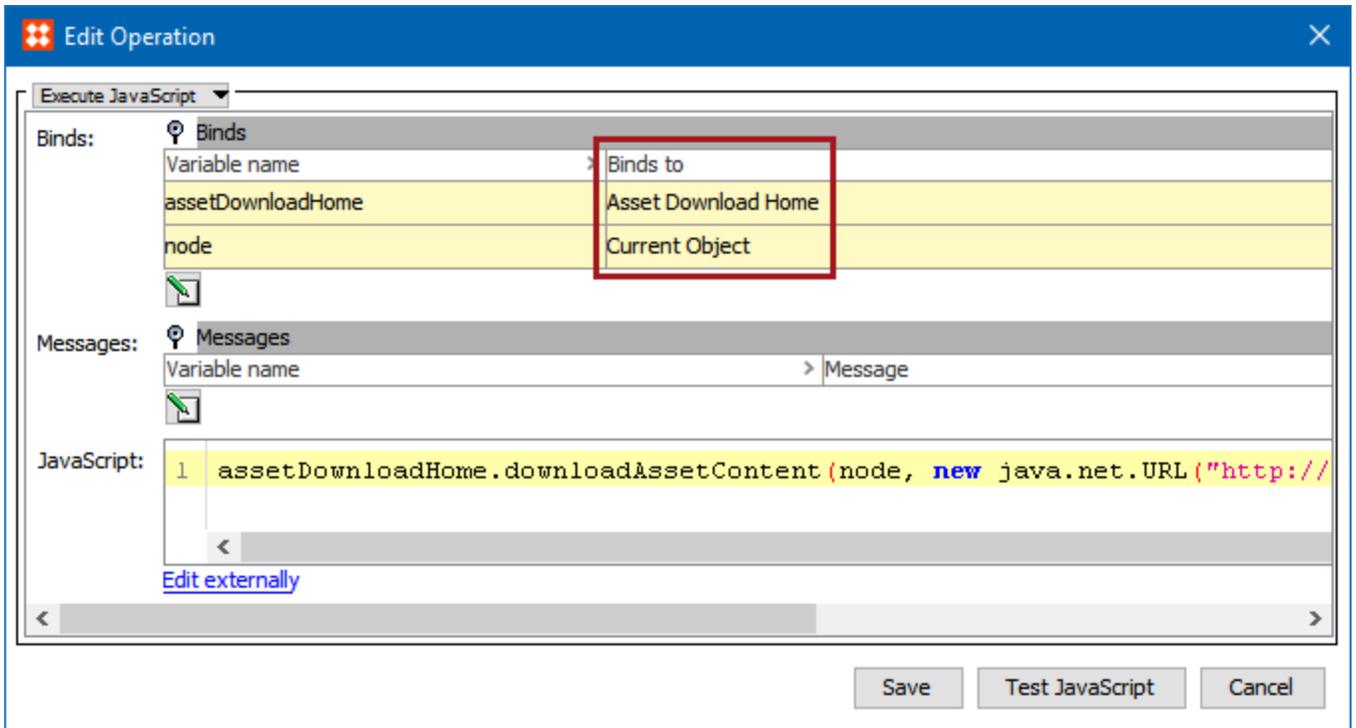
This example shows a basic **Execute JavaScript** business action that uses the **downloadAssetContent** public API JavaScript method along with the **Asset Download Home** bind, which is located under the **Assets** category for Execute JavaScript business actions.

1. In this example, the business rule is named 'JavaScript Download Asset From URL' and the valid object types are image assets—Product Image, Icon, and Illustration.

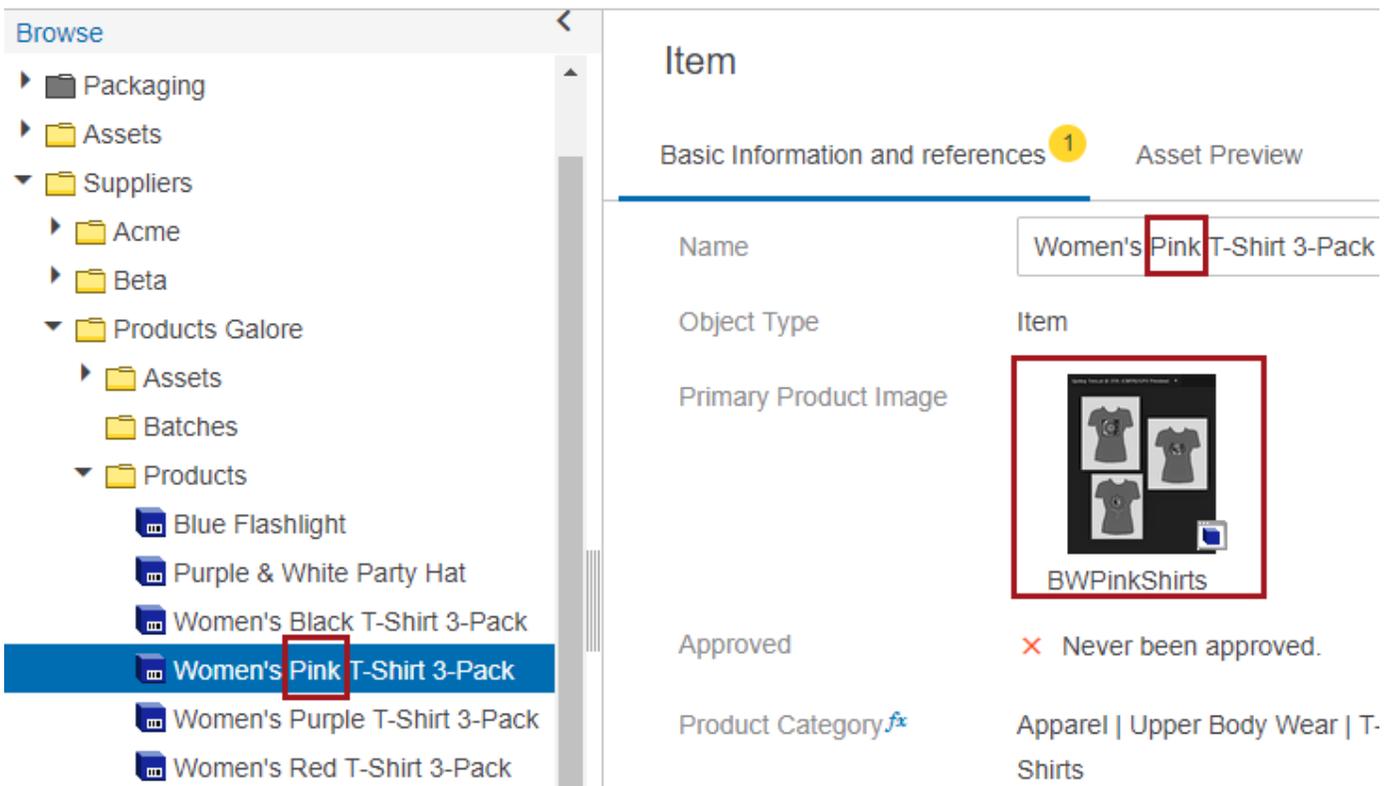
The screenshot shows the 'Business Rule Editor' window for a rule named 'JavaScript Download Asset From URL'. The rule ID is 'JavaScriptDownloadAssetFromURL'. The rule type is 'Action' and the scope is 'Global'. The 'On Approve' status is 'Not Executed'. The 'Valid Object Types' field is highlighted with a red box and contains the text 'Product Image, Icon, Illustration'. Below this, there is a section for 'Operations' with a single entry: 'JavaScriptBusinessActionWithBinds: Bindings, 0 messages, assetD...'. At the bottom, there are 'Save' and 'Cancel' buttons.

2. Two binds are used: **Asset Download Home** and **Current Object**. The sample JavaScript (not fully pictured in the screenshot below) contains the asset URL within the script:

```
assetDownloadHome.downloadAssetContent(node, new java.net.URL
("http://products-galore/images/womens_tshirts/pink3pack.png"));
```



- The asset to be replaced is the Primary Product Image linked to the Women's Pink T-Shirt 3-Pack. Instead of a color image of three pink shirts, a black and white image of shirts is currently linked to the product instead. Since this is the wrong image, it needs to be replaced.



- Navigate to the asset itself, where an **Initiate Business Action** button has been placed at the bottom of the page. This button has been configured to run the 'JavaScript Download Asset From URL' business rule. For information on how to add an action button to a Web UI screen, see the **Action Button Configuration on a Node List** topic in the **Web User Interfaces** documentation.

The screenshot shows the 'Asset Detail' page for an asset named 'BWPinkShirts'. On the left is a 'Browse' sidebar with a tree view of folders (A through T), where 'BWPinkShirts' is selected. The main area displays the asset's details:

- Image:** A thumbnail showing three t-shirts. Below it is the label 'BWPinkShirts'.
- ID:** 254875
- Asset Type:** Product Image (dropdown menu)
- Name:** BWPinkShirts (text input)
- Asset Object Type:** Product Image (with an edit icon)
- Asset URL Attribute:** (empty text input with a right-pointing arrow icon)
- Format:** PNG (Portable Network Graphics image) (dropdown menu)
- Color Space:** RGB (dropdown menu)

At the bottom of the page, there is a row of action buttons: 'Save', 'Reset', 'Delete', and 'Initiate Business Action'. The 'Initiate Business Action' button is highlighted with a red rectangular border.

- Click the 'Initiate Business Action' button to run the JavaScript Download Asset From URL business action. The image is downloaded from the URL specified in the JavaScript and has replaced the content of the asset. Now, the correct image of the pink t-shirts is displayed.

Business Action JavaScript Download Asset From URL executed with status: OK ✕

Asset Detail

Image



ID

254875

Asset Type

Product Image ▾

Name

BWPinkShirts

Asset Keywords

Asset Object Type ^{fx}

Product Image ✎

Deduplicating Images

The Image Deduplication functionality identifies and manages duplicate images to ensure that only one version of a particular image is maintained in the system. This provides a single source of truth which ensures consistent and accurate image data, regardless of the number of objects using the image.

Image Deduplication compares and evaluates all images within a classification, regardless of encoding differences (such as file type or color model) or being referenced to products. Essentially, if images look the same, they are considered duplicates. Images that use CMYK and RGB color models and have the extensions in the table below are considered by the process.

Image Deduplication File Types		
• .BMP	• .MVG	• .PPM
• .GIF	• .P7	• .PSD
• .JPEG	• .PBM	• .TIF
• .JPG	• .PNG	• .TIFF
• .MSL	• .PNM	• .XWD

For example, selecting a single parent classification node would recursively compare all images of the identified types within the node to determine potential duplicates, but would not consider images in other nodes.

Running the image deduplication process includes:

- Generating a pHash (perceptual hash) for each image in the classification. Similar images have a similar pHash, which provides a way to identify potential duplicate images.
- Identifying and grouping duplicates based on pHash comparison and pixel-to-pixel comparison if auto-handling is enabled.
- Handling duplicates by marking them for deletion and transferring their references to a master image that is retained in the system.

To access the Image Deduplication functionality, the 'asset-deduplication' component must be activated on your system. Contact your Stibo Systems representative for details.

Limitations

The following limitations should be considered when evaluating the Image Deduplication functionality:

- Image deduplication runs on the current context. In auto-handling, a master with content with in multiple contexts can be selected since no data is deleted from the master. However, potential duplicate images with content in multiple contexts are ignored by auto-handling, and will not be presented to the user in the clerical review workflow. Attempting to deduplicate images with multi-context content can cause unexpected results.
- Undo functionality is not possible once a file is processed by image deduplication and action is taken to move references / links on duplicates.
- Non-image assets, such as videos, PDF, and documents, are excluded by image deduplication.

- Multi-sequence images (images that contain a sequence within a single image, common with TIF images) are excluded by image deduplication.
- Images stored outside of STEP cannot be processed by image deduplication.
- Only the file types in the **Image Deduplication File Types** table above are considered by image deduplication.
- If the STEP application server is stopped while image deduplication is running, image deduplication must be run again manually once the server is started.

Additional Information

Image Deduplication can be configured and run as defined in the following topics:

- Initial Setup for Image Deduplication
- Creating an Image Deduplication Configuration
- Configuring Web UI for the Image Deduplication Clerical Review Workflow
- Image Deduplication Clerical Review Screen
- Running the Image Deduplication Process
- Using Image Deduplication Clerical Review

The following topics provide an explanation of how image deduplication works and an example of image deduplication:

- Handling Duplicate Images
- Image Deduplication Example

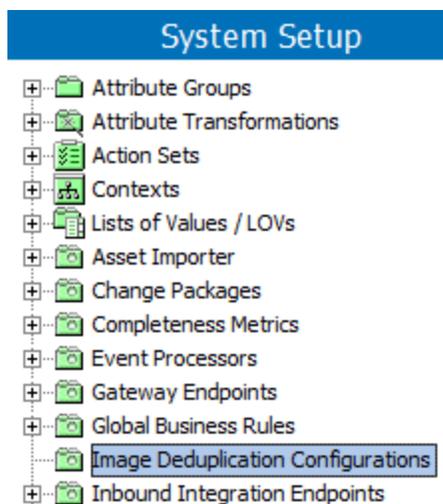
Initial Setup for Image Deduplication

Before creating image deduplication configurations, a setup group must be created to hold the configurations. You must also specify the setup group(s) in which the configurations can be created. This setup only needs to be performed once.

Prerequisites

This setup requires the 'Maintain type hierarchy (node types)' privilege as defined in the **Setup Actions** topic, and the 'Maintain Setup Groups' privilege as defined in the **Setup Groups** topic, both in the **System Setup / Super User Guide** documentation.

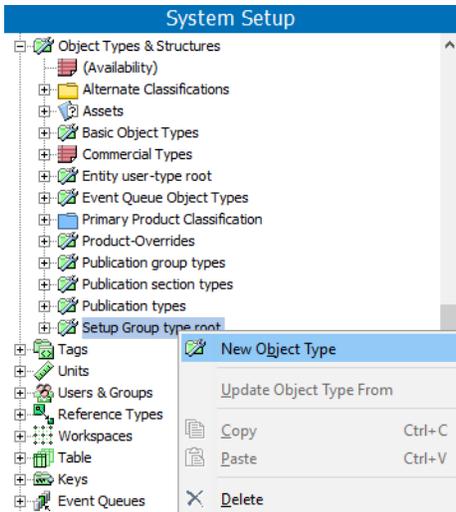
Review your System Setup tab to determine if one or more image deduplication configuration nodes already exist. The name of the node on your system is not required to match the one in the image below.



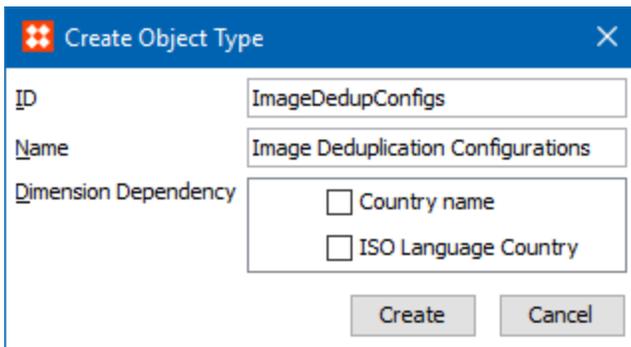
Once the setup has been completed, the steps in this topic are only needed if additional levels of organization are desired.

Create the Image Deduplication Configurations Setup Group

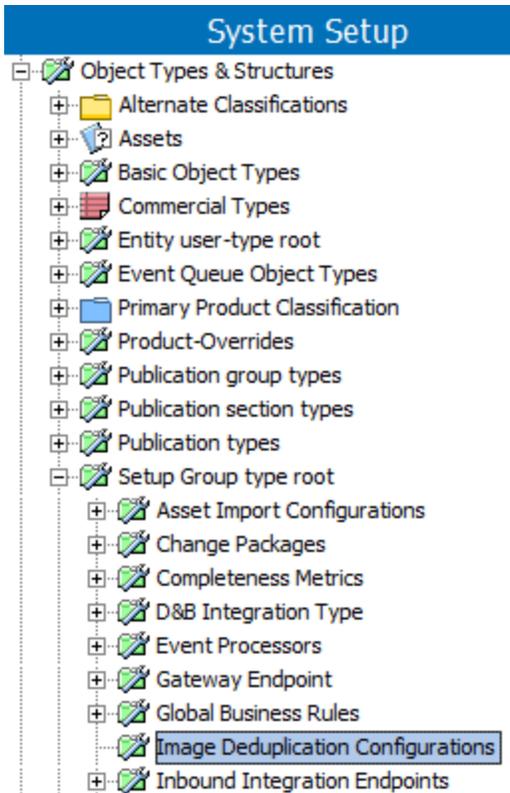
1. In System Setup, expand **Object Types & Structures**.
2. Right-click 'Setup Group type root', and choose **New Object Type**.



3. Enter an **ID** and a **Name**, select any required **Dimension Dependencies**, and click **Create**.

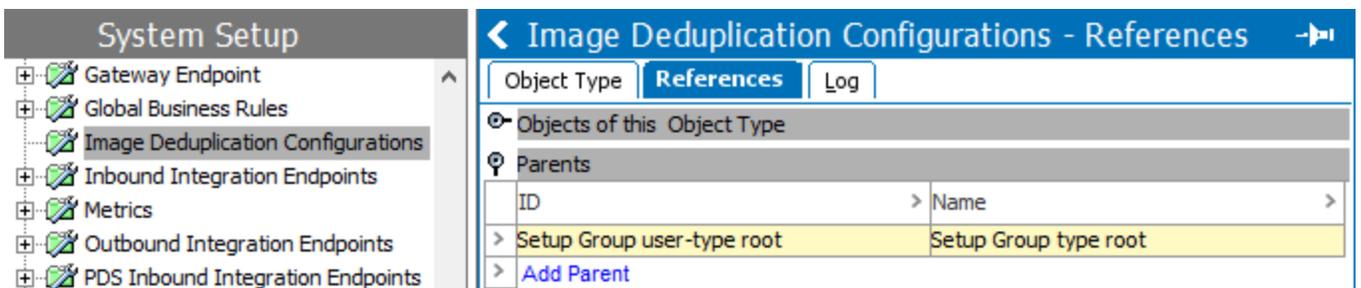


4. The new setup group appears in System Setup under 'Object Types & Structures' as a child in the **Setup Group type root**.

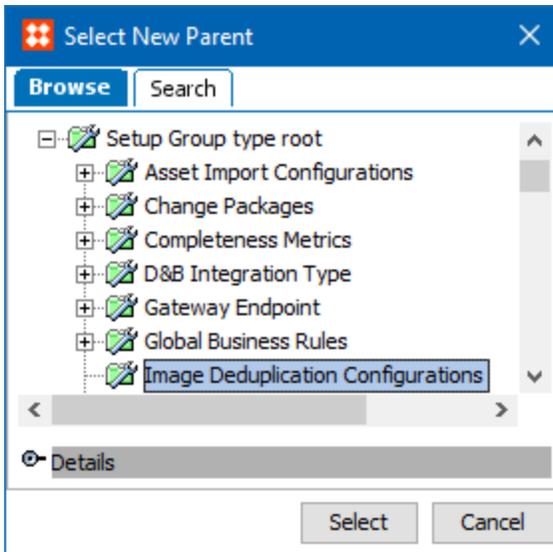


Link the Image Deduplication Configurations Object Type to Setup Group

1. In Object Types & Structures, expand Basic Object Types, and select **Image Deduplication Configurations**.
2. On the References tab, open the Parents flipper and click the **Add Parent** link.

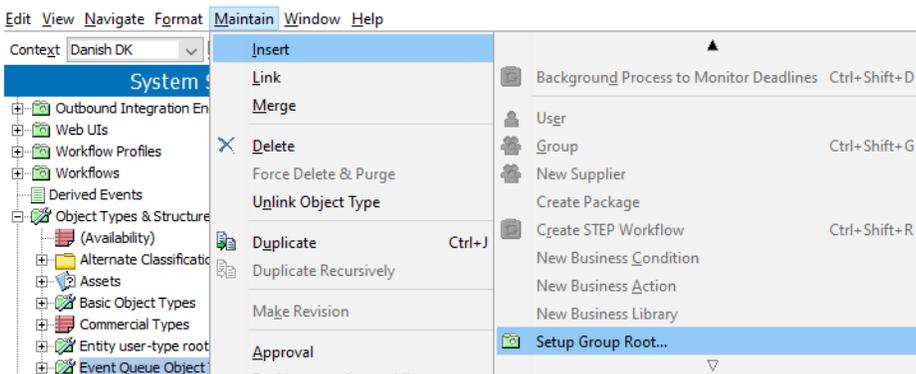


3. In the Select New Parent dialog, select the setup group you created, and click **Select** to make it a valid parent.

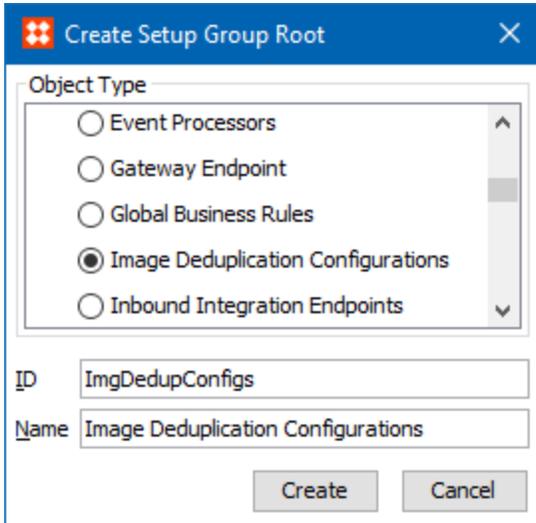


Create an Instance of the Image Deduplication Object

1. On the System Setup tab, select any object in the **System Setup** hierarchy to activate the following Maintain menu selection.
2. Click the Maintain menu, point to Insert, and select **Setup Group Root**.



3. In the Create Setup Group Root dialog, select the image deduplication object type, enter an **ID** and a **Name**, and click **Create**.



A setup group is created as a node in the System Setup hierarchy. Image deduplication configurations can now be created under this new node, as defined in the **Creating an Image Deduplication Configuration** topic.

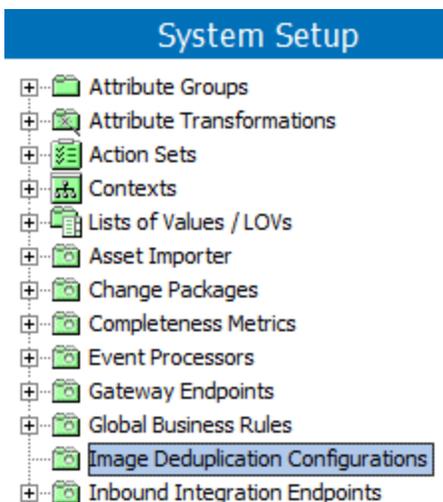
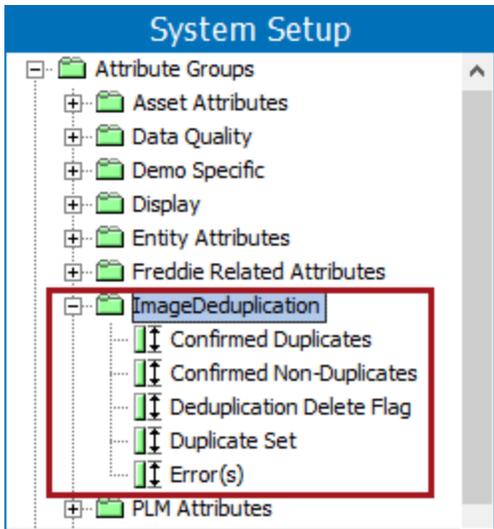


Image Deduplication Attributes

Image deduplication attributes are descriptive attributes that must be created under the top attribute group node, and are valid for all assets. For more information on how to create attributes, see the **Attributes** section in the **System Setup / Super User Guide** documentation.



Creating an Image Deduplication Configuration

Creating an Image Deduplication Configuration defines the group of images that will be evaluated, as well as the workflow that is used for error handling and managing duplicate sets identified for clerical review, whether or not auto-handling is enabled, and the matching threshold for images sent to clerical review.

Prerequisites

1. Perform the required initial setup as defined in the **Initial Setup for Image Deduplication** topic.
2. Users running the image deduplication configuration right-click options must have the STEP Workflow Administrator privilege. This is because if tasks are already in the workflow, they need to be removed when a new run is done and you need that privilege to remove tasks from a workflow. This is applicable to the user running the actual process in System Setup, NOT those handling clerical review tasks.

Configuration

Use the following steps to create a new Image Deduplication Configuration.

1. In System Setup, select and right-click the Image Deduplication Configurations node, and then click the **Create Image Deduplication Configuration** option. The New Image Deduplication Configuration wizard displays.

Note: Hover over a parameter label to display information for its use.

2. Enter an **ID** and **Name** for the configuration.
3. For the **Classification** parameter, click the ellipsis button (...) and choose the image classification that will be deduplicated. All images in the selected folder and its children will be considered. Click the **Select** button.

Note: If the classification on a saved configuration changes, you should clear the stored values, as defined in the **Clearing Stored Values** section of the **Running the Image Deduplication Process** topic.

4. For the **Clerical Review Workflow** parameter, click the ellipsis button (...) and choose the image deduplication workflow. Click the **Select** button.

Activating the image deduplication component creates an image deduplication workflow named 'Image Deduplication.' A custom workflow can also be used for image deduplication, provided it meets the requirements outlined in the **Workbench Configuration** section of the **Configuring Web UI for the Image Deduplication Clerical Review Workflow** topic.

5. For the **Auto-Handling Threshold** parameter, select an option from the dropdown:

- Select **Yes** to automatically handle images when possible.
- Select **No** to manually handle all images via the Clerical Review workflow.

This parameter works together with the Clerical Review Threshold parameter below. See the following **Threshold Settings** section for details.

6. For the **Clerical Review Threshold** parameter, select an option from the dropdown:

- Select **No Clerical Review** to prevent any images from being sent to clerical review when the Auto-Handling Threshold is set to 'Yes.' When all images in the group are a pixel-to-pixel match with the system-selected master, they are considered duplicates and are marked for deletion.

If any image in the group does not match the master pixel-to-pixel, the whole group is sent to clerical review, even with this 'No Clerical Review' selection.

- Select **Near Matches** to send duplicate sets with a Hamming Distance = 0 to clerical review. Pixel-to-pixel matches are auto-handled if Auto-Handling Threshold is set to 'Yes.'
- Select **Very Similar Matches** to send duplicate sets with a Hamming Distance = 1 or less to clerical review. Pixel-to-pixel matches are auto-handled if the Auto-Handling Threshold is set to 'Yes.'
- Select **Similar Images** to send duplicate sets with a Hamming Distance = 2 or less to clerical review. Pixel-to-pixel matches are auto-handled if the Auto-Handling Threshold is set to 'Yes.'

This parameter works together with the Clerical Review Threshold parameter. See the **Threshold Settings** section below for details.

7. Click the **Finish** button to complete and save the configuration.
8. Continue the process by following the steps in the **Configuring Web UI for the Image Deduplication Clerical Review Workflow** topic.

Threshold Settings

The Auto-Handling Threshold parameter and the Clerical Review Threshold parameter work together to determine how duplicates are identified and processed. The possible settings and results are defined in the table below.

For additional information, see the **Handling Duplicate Images** topic.

Auto-Handling Threshold	Clerical Review Threshold	Result
No	No Clerical Review	✘ No image deduplication processing happens. An error is displayed when the configuration attempts to run.
No	Near Matches	✔ Only duplicate sets of images with a Hamming Distance = 0 are sent to clerical review.
No	Very Similar Images	✔ Only duplicate sets of images with a Hamming Distance = 1 or less are sent to clerical review.
No	Similar Images	✔ Only duplicate sets of images with a Hamming Distance = 2 or less are sent to clerical review.
Yes	No Clerical Review	✔ When all images in the group have a Hamming Distance = 0 <u>and</u> are pixel-to-pixel match to the system-selected master, all images are auto-handled. Otherwise, if more than one image remains that does not match pixel-to-pixel to the master, all images are sent to clerical review (even though the Clerical Review Threshold is set to 'No Clerical Review').
Yes	Near Matches	✔ When all images in the group have a Hamming Distance = 0 <u>and</u> are pixel-to-pixel match to the system-selected master, all images are auto-handled. Otherwise, if more than one image remains that does not match pixel-to-pixel to the master, all images are sent to clerical review.
Yes	Very Similar Images	✔ When all images in the group have a Hamming Distance = 0 <u>and</u> are pixel-to-pixel match to the system-selected master, all images are auto-handled. Otherwise, if more than one image remains with a Hamming Distance = 1 or less <u>but are not</u> pixel-to-pixel matches to the master, all images are sent to clerical review.
Yes	Similar Images	✔ When all images in the group have a Hamming Distance = 0 <u>and</u> are pixel-to-pixel match to the system-selected master, all images are auto-handled. Otherwise, if more than one image remains with a Hamming Distance = 2 or less <u>but are not</u> pixel-to-pixel matches to the master, all images are sent to clerical review.

Configuring Web UI for the Image Deduplication Clerical Review Workflow

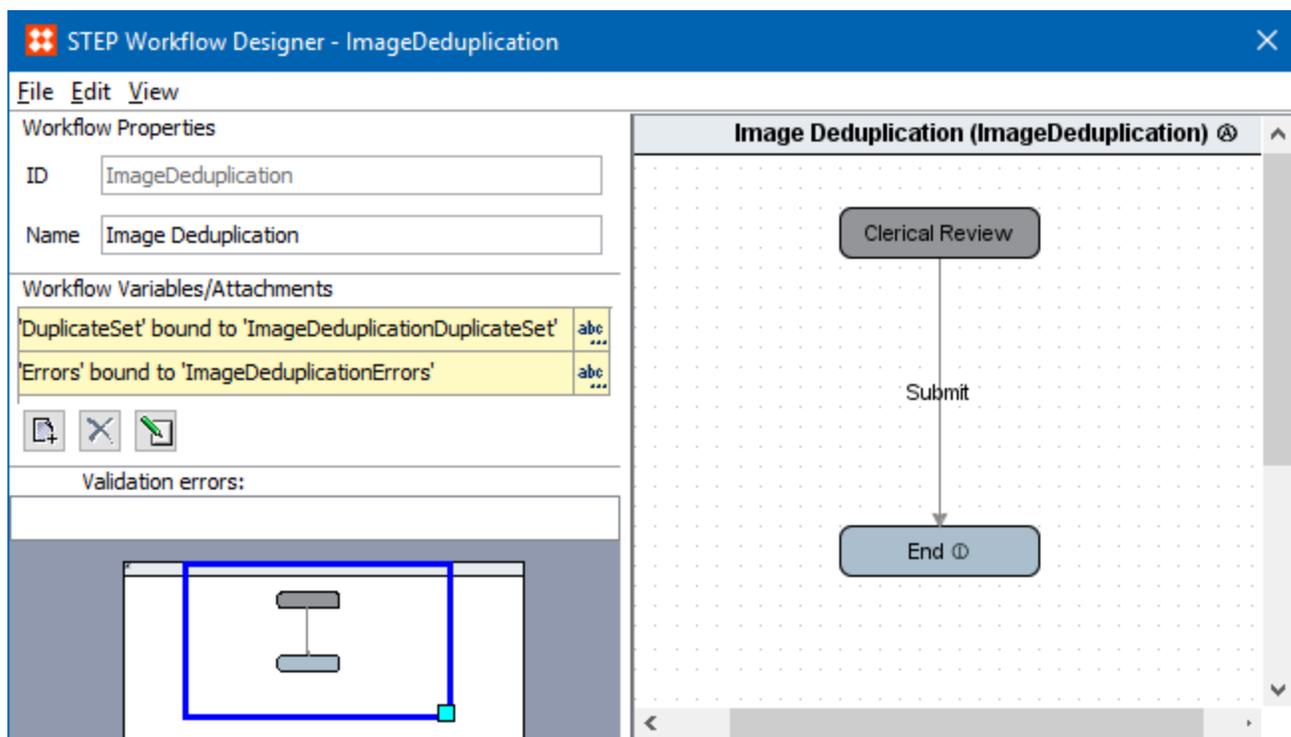
The image deduplication functionality includes a default clerical review workflow. A single task is created for a set of images that fall below the auto-match threshold, but that are above the clerical review threshold. The task holds images that cannot be definitively identified as duplicates by the deduplication algorithm. A user with appropriate access can then manually mark images as confirmed duplicates or confirmed non-duplicates, and select a master.

Using the Web UI for clerical review involves a workflow configured in workbench and screens and components configured in Web UI.

After this configuration is complete, continue with the Image Deduplication process as defined in the **Running the Image Deduplication Process** topic.

Workbench Configuration

The following default workflow is created when the component is activated and can be viewed in workbench.



While only a single item is in the workflow, the 'DuplicateSet' attribute used as the workflow variable holds the IDs of the duplicate images. For the workflow to show multi-valued in workbench, the parameters for this attribute must include the following settings: Type = Description, Externally Maintained = Yes, Validation Base Type = Text, and Multi Valued = Yes. Additional information about viewing workflows in workbench can be found in the **Configuring Mappings for Workflows** topic and the **Configuring Views for Workflows** topic in the **Workflows** documentation.

Prerequisites

The image deduplication workflow must have the following settings:

- Prior to activation of the image deduplication component, the 'Workflows' object type must already exist in STEP in System Setup under 'Setup Group Type Root.'
- Workflow variables are used by the workflow: one to store errors and another to store the IDs of the assets in a set of duplicates. For the workflow to function as expected, these workflow variables must not be modified.

Important: If you create your own workflow for Image Deduplication, you must include the workflow variables that exist in the default workflow. Otherwise, the duplicate image handling fails.

- Attributes for the workflow variables are auto-created and can be found in the 'ImageDeduplication' asset group. These attributes manage data for: confirmed non-duplicates, confirmed duplicates, and the deduplication delete flag. For the workflow to function as expected, these attributes must not be modified.
- A state must exist with the ID = ClericalReview for the workflow to function as expected.

Note: If the image deduplication workflow is not functioning as expected, delete the elements mentioned above and reinstall the component, as specified in the **Deduplicating Images** topic.

Workflow Configuration

Use the following steps in workbench to modify the default workflow for your data model:

1. Set the 'Assignee' to the clerical review user (by default, this is the executing user and should be changed). For more information, see the **Step 5: Set Assignees** section of the **Creating a Workflow** topic in the **Workflows** documentation.
2. Verify that the default workflow is valid for all asset types that should be deduplicated (by default, this is set to all asset types). For more information, see the **Step 6: Set Validity** section of the **Creating a Workflow** topic in the **Workflows** documentation.
3. Verify that the default workflow has the 'Use executing user's write privileges' parameter not checked. This ensures that the workflow can perform the required actions, without the restrictions set on the current user. For more information, see the **Step 7: Set Workflow Options** section of the **Creating a Workflow** topic in the **Workflows** documentation.
4. Verify that the clerical review user has access to workflows, otherwise the following background process error can be displayed in the execution report: Could not start asset [ID] in the workflow 'ImageDeduplication'. Most likely the object type of the asset isn't valid for the workflow. For more information on privileges related specifically to workflows, see the **Workflow Privileges** topic in the **Workflows** documentation.

Web UI Configuration

Images being considered for the deduplication process can be viewed in Web UI using the following methods:

- Task List - when all images in the system are managed by the same user(s), a Status Selector Homepage Widget can be configured to map to a task list, which maps to the clerical review screen.
- Advanced Search - when images are managed by different users, such as suppliers or business units, image deduplication tasks should also be isolated by supplier or business unit. In this case, a search can be

configured with a hierarchy criteria for classification and a workflow criteria to only display results for the selected images.

Configuration for each method is included below.

Image Deduplication Task List Configuration

Use this configuration if all images are under the same ownership and manual deduplication tasks do not need to be assigned based on hierarchy or supplier.

Note: While completing these steps, routinely click the designer's Save button to prevent the loss of your work.

1. In Web UI, create a 'Image Deduplication Clerical Review Screen' by following the steps described in the **Image Deduplication Clerical Review Screen** topic in the **Web User Interfaces** documentation.
2. Create a 'Image Deduplication Task List Screen' by following the steps described in the **Task List** topic in the **Web User Interfaces** documentation.

On the Node List child component, click the 'go to component link' and set the following specific parameters:

- For the **Lookup Screen Type For Navigation** parameter, disable the option by removing the check mark. This allows the Image Deduplication Clerical Review Screen to be used when an image ID is clicked.
- Under the Selection Screens section, for the **Asset Selection Screen** parameter, select 'Image Deduplication Clerical Review' from the dropdown.
- Under the Selection Screens section, for the **Multi Selection Screen** parameter, select 'Image Deduplication Clerical Review' from the dropdown.
- In the Child Components area for the **Display Modes** parameter, click the Add button, select the 'Gallery Display Mode, and click Add. Set Gallery Display Move as the default display by moving it to the top of the list by clicking the Up button. No further configuration is required.
- In the Child Components area for the **Display Modes** parameter, double-click the Table Display Mode to display the properties and add the necessary headers to the Headers parameter. Click the Add button, select a header from the Add Component list, and click Add. For example, Name Header, Path Header, and Thumbnail Header.

For more information, see the **Node List Component** topic in the **Web User Interfaces** documentation.

3. On the ---[HOMEPAGE]--- screen, edit the Widget Grid child component, in the Widgets parameter click the Add button, select the Status Selector Homepage Widget component, and click Add. Edit the following parameter data:
 - Set the **Result Screen** parameter to the 'Image Deduplication Task List' screen created previously.
 - Set the **States** parameter to the 'Image Deduplication | Clerical Review' state and click the Add button.
 - Set the **Workflow** parameter to the 'Image Deduplication' workflow.
 - Set other parameters as desired based on the **Status Selector Homepage Widget** topic in the **Web User Interfaces** documentation.
 - Click the Add button to display the new homepage widget.
4. Click the Save button to commit your changes and click the Close button to exit the designer.

Image Deduplication Advanced Search Configuration

Use this configuration if all images are not under the same ownership and manual deduplication tasks must be assigned based on hierarchy or supplier.

1. In Web UI, create a 'Image Deduplication Clerical Review Screen' by following the steps described the **Image Deduplication Clerical Review Screen** topic in the **Web User Interfaces** documentation.
2. On the homepage, click the Advanced Search link to open the Advanced Search page. For information on setting up an Advanced Search link, see the **Advanced Search Initial Configuration** topic in the **Web User Interfaces** documentation.
3. Configure a new search using the following search criteria:
 - **Hierarchy** - use the node picker to select the classification that holds the images to be deduplicated.
 - **Workflow** - use 'Select workflow' dropdown to select the 'Image Deduplication' workflow, use the '[any State]' dropdown to select the 'Clerical Review' state, and use the 'My group' dropdown to select the assignee for the tasks.
 - Click the Save button and add a name for the search.

The screenshot shows the 'Advanced Search' configuration interface. At the top, the title 'Advanced Search' is displayed. Below the title, there are two criteria boxes. The first box is labeled 'Hierarchy' and contains the text 'F-D Images (262571)'. The second box is labeled 'Workflow' and contains three dropdown menus: 'Image Deduplication', 'Clerical Review', and 'My group'. A red arrow points to the 'Image Deduplication' dropdown. Between the two criteria boxes is a circular button labeled 'And'. At the bottom of the interface, there are four buttons: 'Search', 'Save', 'Create collection', and 'Clear'. The 'Save' button is highlighted with a red box.

4. While displaying the Advanced Search screen, open the designer.
5. On the Advanced Search Screen Properties dialog, check the Enable Workflow Selection checkbox.
6. On the ---[MAIN]--- screen, add a mapping for the Image Deduplication Clerical Review screen as follows:
 - In the Mappings parameter, click the Add button.
 - On the Screen Mapping Properties dialog, in the Conditions parameter, click the Add button and select the Workflow Condition component and click Add.
 - On the Workflow Condition Properties dialog, in the Workflow Details parameters, select the Image Deduplication workflow and the Clerical Review State. Click the Add button.
 - On the Screen Mapping Properties dialog, in the Screen parameter, use the dropdown to select the Image Deduplication Clerical Review screen. Click the Add button.

- The Image Deduplication Clerical Review screen mapping displays as the last item in the Mappings parameter. Since the first mapping that matches the condition of the current selection will be used, adjust the order if necessary.

For more information, see the **Mappings** topic in the **Web User Interfaces** documentation.

7. Click the Save button to commit your changes and click the Close button to exit the designer.

Image Deduplication Clerical Review Screen

The Image Deduplication Clerical Review screen component enables users to review and manage sets of duplicate images after running the image deduplication process. Each potential duplicate set in clerical review is represented in the workflow as a single task, with all assets in the duplicate set being displayed in this screen.

Prerequisites

It is expected that anyone configuring the Image Deduplication Clerical Review Screen component is familiar with the Web UI designer as basic concepts for working with the designer are not covered in this section. In addition, the user must have appropriate privileges to access the designer. Additional information can be found in the **Designer Access** section of the **Web User Interfaces / Web UI Getting Started** documentation.

Additionally, to use the image deduplication functionality, the Image Deduplication component must be activated as described in the **Deduplicating Images** topic in the **Digital Assets** documentation.

Adding and Configuring the Screen

Use the following steps to create and configure an 'Image Deduplication Clerical Review' screen.

1. Create an 'Image Deduplication Clerical Review' screen. Steps for creating a new screen are outlined in the **Creating a New Screen** section of the **Design Mode Basics** topic. Select 'Image Deduplication Clerical Review' as the screen type.

Add Screen [X]

Screen ID

- Generic Search
- Golden Record Clerical Review Task List
- Golden Record Source Traceability
- Home Page
- Image Deduplication Clerical Review**
- Initiate Item
- Job List Screen
- Job Nodes List Screen

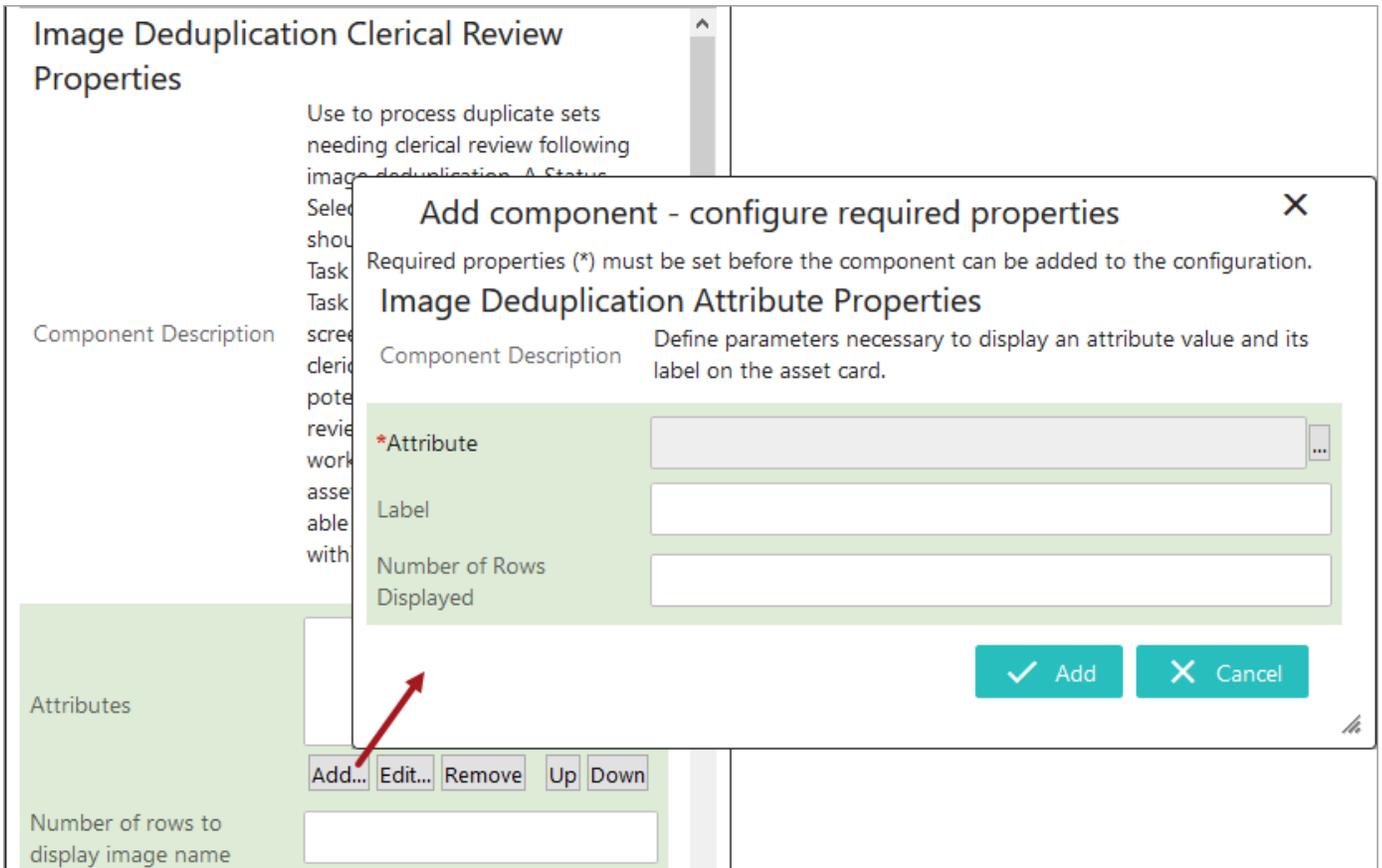
Filter

Show deprecated components

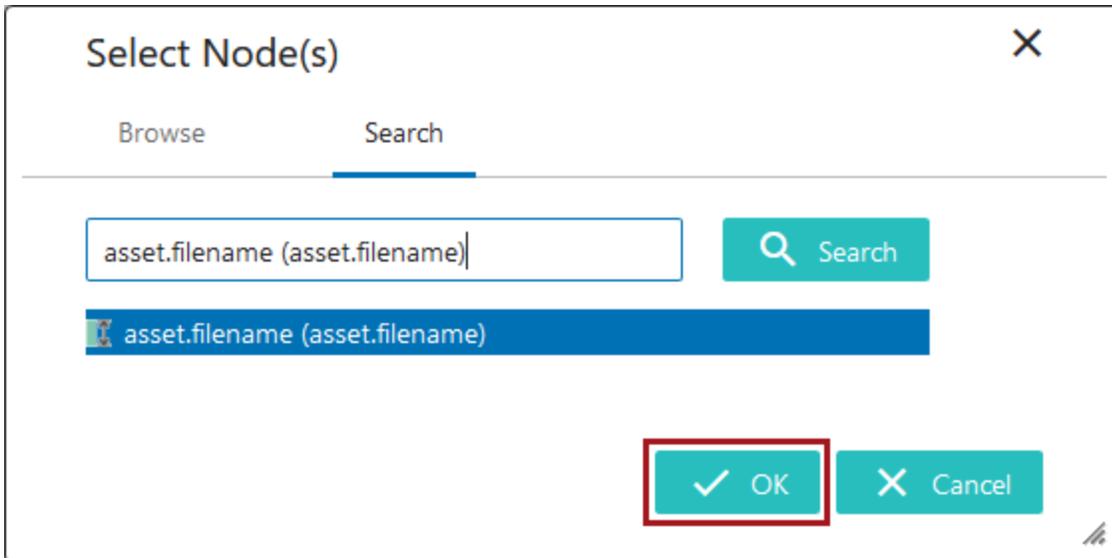
[✓] Add [X] Cancel

Use to process duplicate sets needing clerical review following image deduplication. A Status Selector Homepage Widget should be configured that uses a Task List as the result screen. The Task List should then map to THIS screen to display results from the clerical review task list. Each potential duplicate set in clerical review is represented in the workflow by a single task, with all assets in the duplicate set being able to be viewed and processed within this screen.

- After creating the new 'Image Deduplication Clerical Review' screen, determine the image attributes that should display on the screen. On the Attributes parameter, click 'Add' to display the Image Deduplication Attribute Properties dialog, then click the ellipsis button (...) on the Attribute parameter to make your selections.

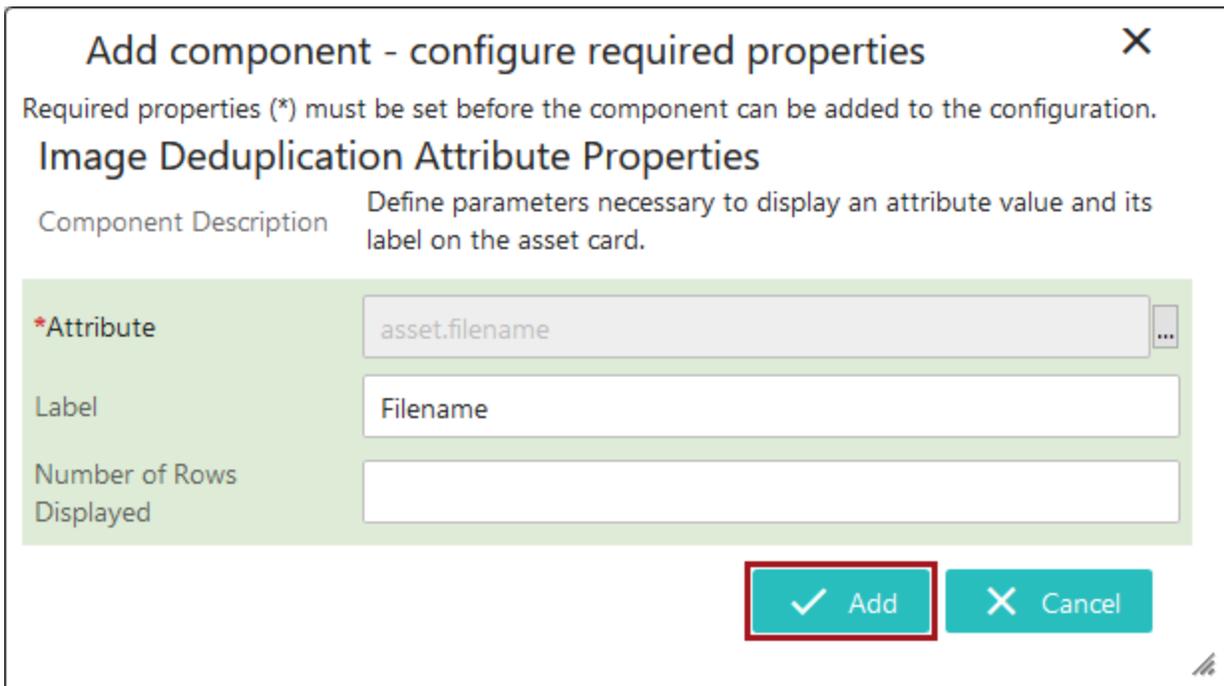


- Use the 'Search' or the 'Browse' option to select the asset metadata attributes that will appear in the screen and click 'OK.'



4. Optionally, add a Label and Number of Rows Displayed:

- Label - By default, the user will see the attribute name on the screen.
- Number of Rows Displayed - By default, only one row is used and additional text can be viewed by hovering over the value. If most values require more than one row, add an integer to define how many should be used.



5. Click 'Add' to close the Image Deduplication Attribute Properties dialog. Repeat as needed to add more metadata attributes.

Note: While any number of attributes can be displayed, the screen is optimized for a small number. Adding an excessive number of attributes will result in a poor user experience.

All added attributes and the settings are displayed in the Attributes parameter.

Properties

Configuration Web UI style

Image Deduplicatio ▾ Save Close New... Delete Rename Save as...

Image Deduplication Clerical Review Properties

Use to process duplicate sets needing clerical review following image deduplication. A Status Selector Homepage Widget should be configured that uses a Task List as the result screen. The Task List should then map to THIS screen to display results from the clerical review task list. Each potential duplicate set in clerical review is represented in the workflow by a single task, with all assets in the duplicate set being able to be viewed and processed within this screen.

Component Description

Attributes

Image Deduplication Attribute (asset.filename / 2 / File Name)

Image Deduplication Attribute (asset.size / Size)

Image Deduplication Attribute (asset.format / 2 / Format)

Image Deduplication Attribute (asset.colorsapce / Colorspace)

Add... Edit... Remove Up Down

Number of rows to display image name

Select Duplicates Instructional Text (Clerical Review)

Select Duplicates Instructional Text (Auto-Handling Error)

Select Master Instructional Text

Child Components

6. On the Image Deduplication Clerical Review dialog, for the **Number of rows to display image name** parameter, set a number. Text wraps as required, up to the number of rows set. Additional text can be viewed by hovering over the value.
7. The following parameters include default instructional text. To replace the default settings, remove the i18n.* text and enter your own text:
 - Select Duplicates Instructional Text (Clerical Review)
 - Select Duplicates Instructional Text (Auto-Handling Error)
 - Select Master Instructional Text

Once configured and set as an Asset Selection Screen and a Multi Selection Screen on a Node List component, or as an Advanced Search with Enable Workflow Selection enabled, the Image Deduplication Clerical Review screen will display image cards for all suggested duplicates from a group.

Running the Image Deduplication Process

The image deduplication process can include the following parts:

Preparing images for deduplication evaluates all images and assigns a pHash.

Clearing stored values allows you to remove unnecessary pHash values.

Running Image Deduplication allows you to verify the auto-handling and/or clerical review settings meet your expectations for identifying a duplicate.

Changes made by the deduplication process are recorded on the asset object's Status tab under the Revisions flipper. For updates made during auto-handling, the user who executed the deduplication process is written in the User parameter. For changes made during the clerical review workflow, the user doing the workflow task is written in the User parameter. To write the same user for all image deduplication processing, create a STEP user specifically for image deduplication processing and log in as that user when doing any deduplication work.

Prerequisites

Before you can evaluate the results of the image deduplication process, you must:

1. Set up the Web UI for managing images sent to the clerical review workflow, as defined in the **Configuring Web UI for the Image Deduplication Clerical Review Workflow** topic.
2. Create an Image Deduplication Configuration to define what constitutes a duplicate, as defined in the **Creating an Image Deduplication Configuration** topic.
3. Consider the window size for comparisons during the image deduplication runs. The default is 20, but it can be adjusted to allow greater accuracy in identifying potential duplicates. While a larger window size increases accuracy, a smaller number optimizes performance. Subsequent runs at a smaller window size will likely return additional potential duplicates.

For best results, test window size with a known set of duplicates to determine your acceptable level of accuracy compared to the performance level required.

To adjust the window size, in the sharedconfig.properties file on the STEP application server, add the case-sensitive **ImageDeduplication.ImageDeduplicationWindowSize** property and provide an integer. Changes to the properties file are implemented when the server is restarted. For example:

```
ImageDeduplication.ImageDeduplicationWindowSize=50
```

4. Assign the 'STEP Workflow Administrator' privilege to users who will run the image deduplication configuration right-click options in System Setup. This privilege allows removing tasks from a workflow. Each time the image deduplication process is run, tasks that are already in the workflow must first be removed. For more information, see the **Workflows** section of the **Setup Actions** topic in the **System Setup / Super User Guide** documentation.

Important: As with any deduplication task aimed to delete redundant data, it is vital to first thoroughly test the process on a non-production system, such as a test environment. Metadata can and intentionally will be lost as a result of the deduplication handling process. **There is no undo option, nor is there a recovery function.** While restoring from a backup can be acceptable in a test environment, it is likely to cause an unacceptable amount of lost data in a production system.

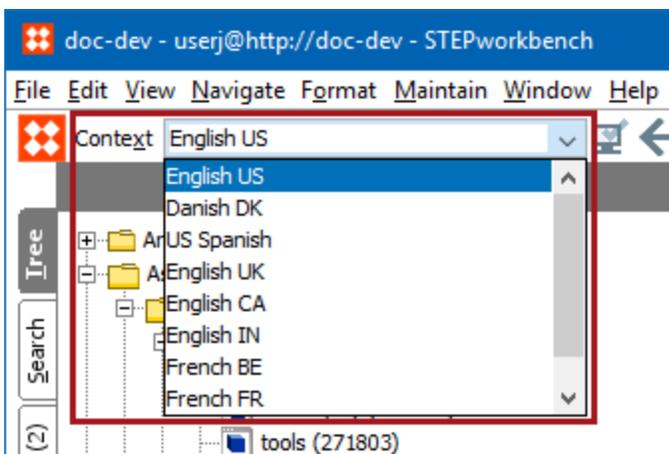
Preparing Images for Deduplication

The 'Prepare images for duplication' option is a manual way to run the deduplication algorithm and ensure that a pHash is assigned to each image in the selected classification. This option is expected to be used when you first activate image deduplication so that all existing images can be evaluated and have a pHash assigned. Assigning a pHash value is also included in the 'Run Image Deduplication' process, but increases the overall process time if a pHash value must be generated for many images. For details, see the **Preparing for Deduplication** section of the **Handling Duplicate Images** topic.

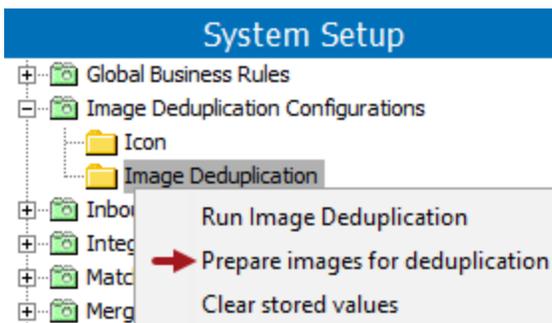
Note: To decrease the time required for the initial 'Run Image Deduplication' process, run 'Prepare images for deduplication' when system use is low, for example, over night.

Use the following steps to prepare images for deduplication.

1. Select the context that includes images to be deduplicated. For more information, see the **Contexts** topic.



2. In System Setup, select an image deduplication configuration, right-click to display the deduplication options and click the **Prepare images for deduplication** option.



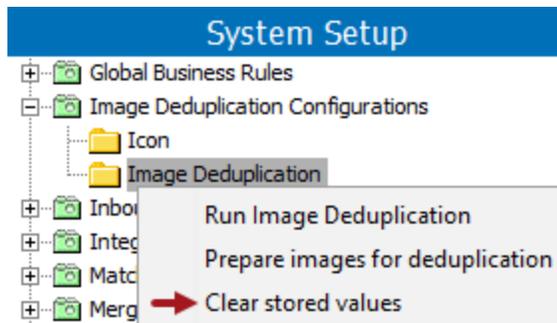
3. On the background process status dialog that displays:
 - Click **Go to process** to display the BG Processes tab with the 'Image Deduplication Preparation' process under the 'DeduplicationPreparation' node.
 - Click **Close** to dismiss the status dialog.

Clearing Stored Values

The 'Clear stored values' option removes all stored pHash values. This can be used when the classification selected in an image deduplication configuration changes, since the stored pHash values for the original classification are no longer required.

This option can also be used if the server crashes or there is some unexpected server error while storing pHash values, since the cache can be corrupted.

Once the values are cleared, use the 'Prepare images for deduplication' option to create new pHash values prior to running the image deduplication process.



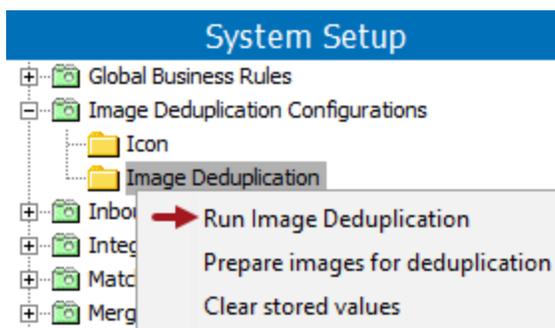
Running Image Deduplication

Initially, running image deduplication should include testing to verify that the auto-handling and clerical review settings on the configuration correctly identify the expected duplicate images. Once the configuration is verified to meet the requirements, you will review the background process execution report to determine if images were auto-handled and/or sent to clerical review.

Note: When testing, it is a good idea to set the configuration for a single classification folder that contains a known set of images, for example, a predetermined number of actual duplicates or near matches. Evaluating the accuracy of the results is easier when you know what is expected. For more information, see the **Deduplication Strategy** outlined in the **Handling Duplicate Images** topic.

Use the following steps to run an image deduplication configuration.

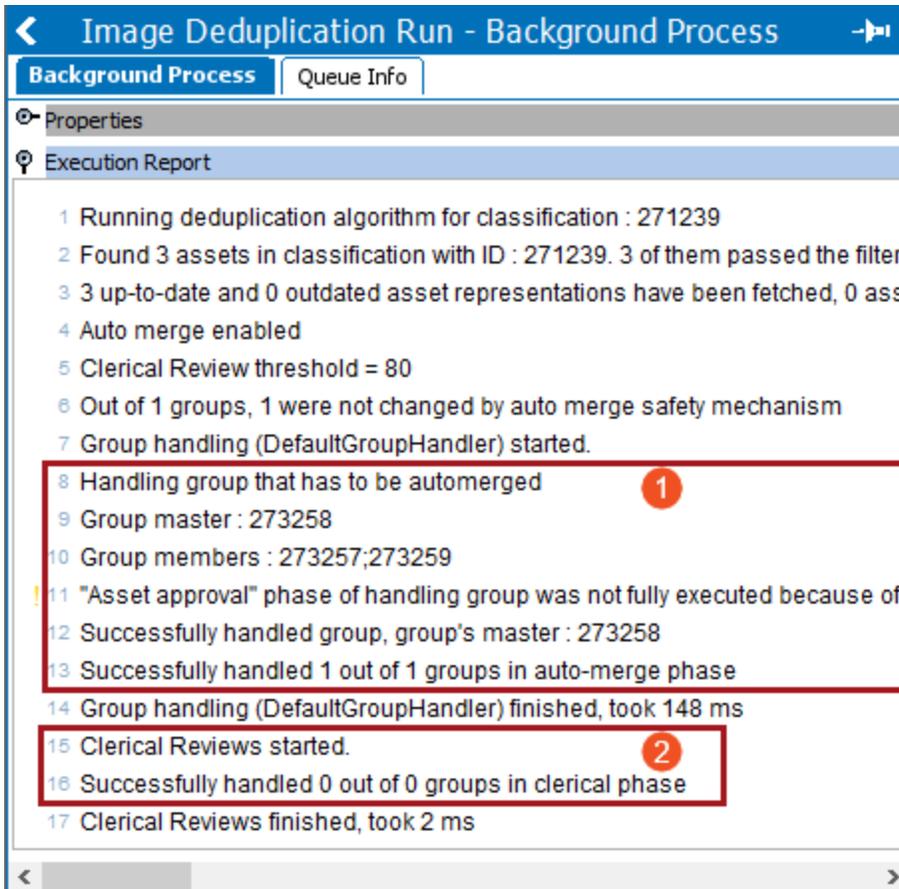
1. In System Setup, select the image deduplication configuration, right-click, and click the **Run Image Deduplication** option. For details, see the **Handling Duplicate Images** topic.



2. On the background process status dialog that displays, click **Go to process** to display the BG Processes tab with the 'Image Deduplication Run' process under the 'DeduplicationRun' node.
3. Review the Execution Report to determine if images were handled in the way you expected, either auto-handled and/or will be handled manually in clerical review.

For example, in the image below:

- Box 1 shows that a group is being auto-handled. An image has been selected as the master, and the others have been marked for deletion, as noted by the IDs shown.
- Box 2 shows that no images are being sent to clerical review.



4. Take action, based on the Execution Report results:
 - If there are images to be handled manually in clerical review, continue with the **Using Image Deduplication Clerical Review** topic.
 - If you want to modify the configuration and retest the same images again, continue with the **Clearing Image Deduplication Metadata Attribute Values** section below.

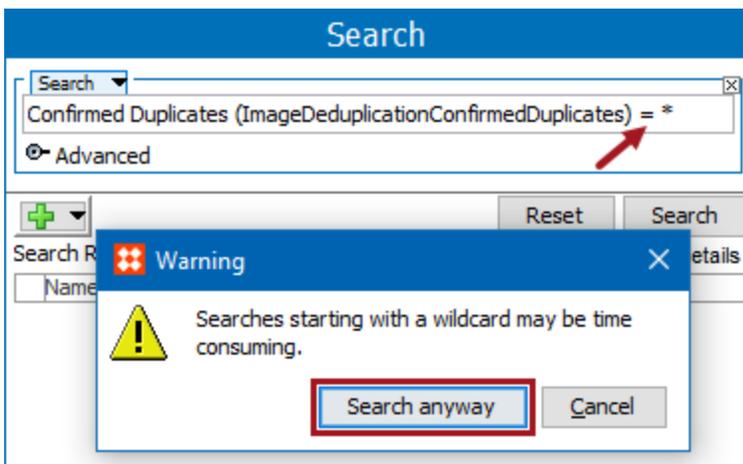
Clearing Image Deduplication Metadata Attribute Values

While testing your image deduplication configuration, you may need to run deduplication multiple times on the same images to determine the settings that meet your requirements. Completing a deduplication run includes writing values to metadata attributes on images, and these values can prevent the image from being considered in

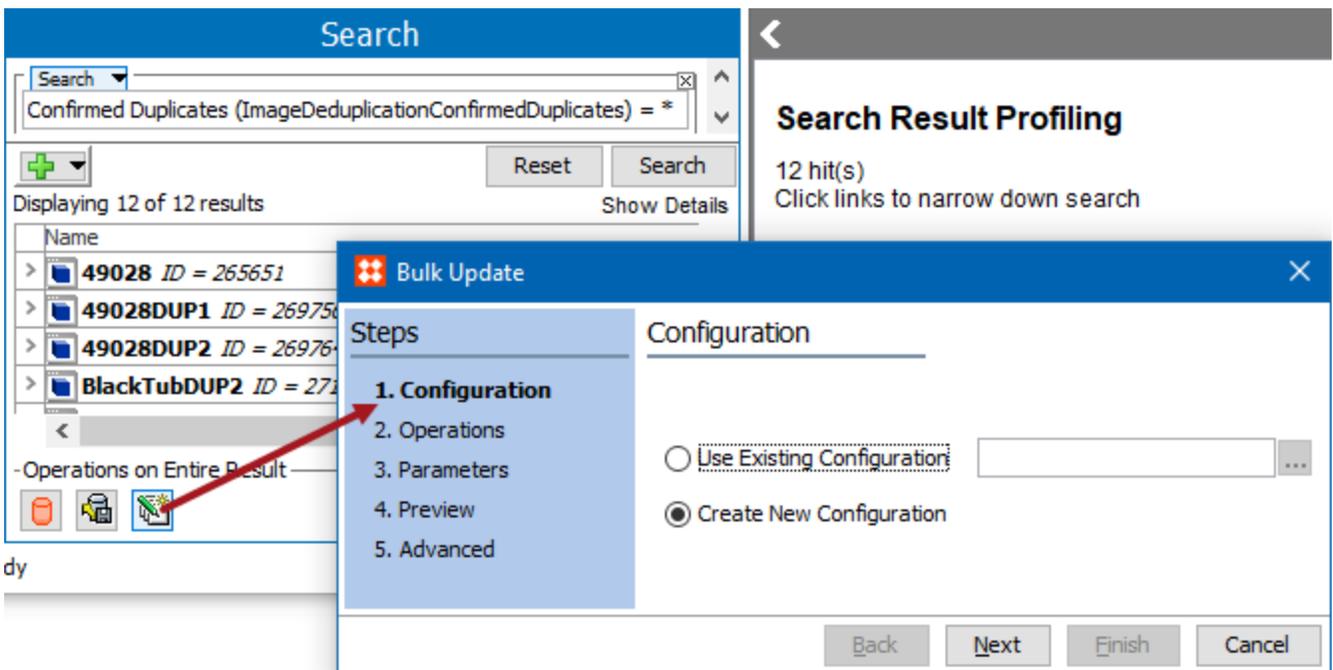
a future deduplication run. Clearing the metadata values allows the images to be evaluated again.

To clear the image deduplication attribute values, repeat the steps below for the following metadata attributes:

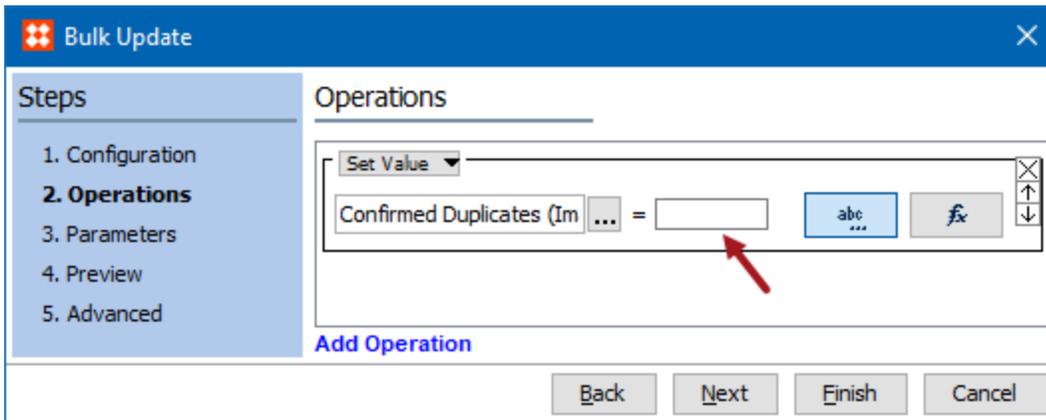
- Confirmed Duplicates
 - Confirmed Non-Duplicates
 - Deduplication Delete Flag
1. On the Search tab, in the Search parameter, select one of the deduplication attributes listed above. For more information, see the **Search Functionality** topic.
 2. Type ' = *' after the attribute to indicate a wildcard search and click the **Search** button.
 3. On the Warning dialog, click the **Search anyway** button.



4. Click the Bulk Update button to configure a bulk update for this attribute.



- On the Operations step, from the dropdown select the Attribute Values group, and choose the **Set Value** operation. Leave the value parameter blank to clear the attribute value. For more information, see the **Attribute Values Set Value Operation** topic in the **Bulk Updates** documentation.



- Complete the bulk update as defined in the **Creating a Bulk Update** topic in the **Bulk Updates** documentation.
- Repeat these steps for all image deduplication metadata attributes.

Using Image Deduplication Clerical Review

When the Auto-Handling Threshold parameter in the image deduplication configuration is set to 'Yes,' images that cannot be handled by auto-handling are sent to clerical review to be addressed manually. When the Auto-Handling Threshold parameter in the image deduplication configuration is set to 'No,' all images evaluated are sent to clerical review to be addressed manually.

Managing clerical review tasks in the workflow includes identifying duplicate images and then confirming or overriding the selected master image.

Prerequisites

Before you can use the clerical review workflow, you must:

1. Set up the Web UI for managing images sent to the clerical review workflow, as defined in the **Configuring Web UI for the Image Deduplication Clerical Review Workflow** topic.
2. Perform the Image Deduplication process as defined in the **Running the Image Deduplication Process** topic.
3. To understand what is presented for clerical review and how images are processed, see the **Handling Duplicate Images** topic.

Configuration

To ensure the best user experience in Web UI, the maximum number of images that can be included in a group for deduplication evaluation is limited to 250 by default. When the number of images exceeds the limit, a number of groups are created of approximately equal sizes. For example, with the default limit, if 500 images are being evaluated, two groups of 250 each are created, but with 251 images being evaluated, the two groups created will include 125 and 126 images.

The default can be changed via the sharedconfig.properties file on the STEP application server using the case-sensitive **ImageDeduplication.ImageDeduplicationClericalReviewGroupMaxSize** property up to a maximum size of 2,000. When this property is absent from the file, the default is used. Any number entered above 2,000 is ignored and the 2,000 max is used.

For example, you could use the following text to increase the limit to 300:

```
ImageDeduplication.ImageDeduplicationClericalReviewGroupMaxSize= 300
```

When a group of images is split due to the number of images being evaluated, an message is included in the execution report and in the logs beginning with the following text:

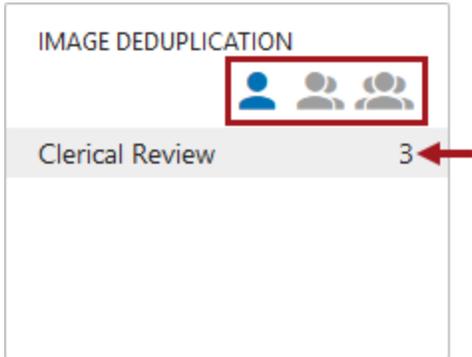
```
Group with master ID [Master ID] exceeds the group size specified in the
ImageDeduplication.ImageDeduplicationClericalReviewGroupMaxSize property and has therefore been split
into [Number of groups] groups. The IDs of the masters for the additional group(s) are: [Master ID], [Master
ID]...
```

Identifying Duplicate Images

Use the following steps to address images that are sent to the image deduplication clerical review.

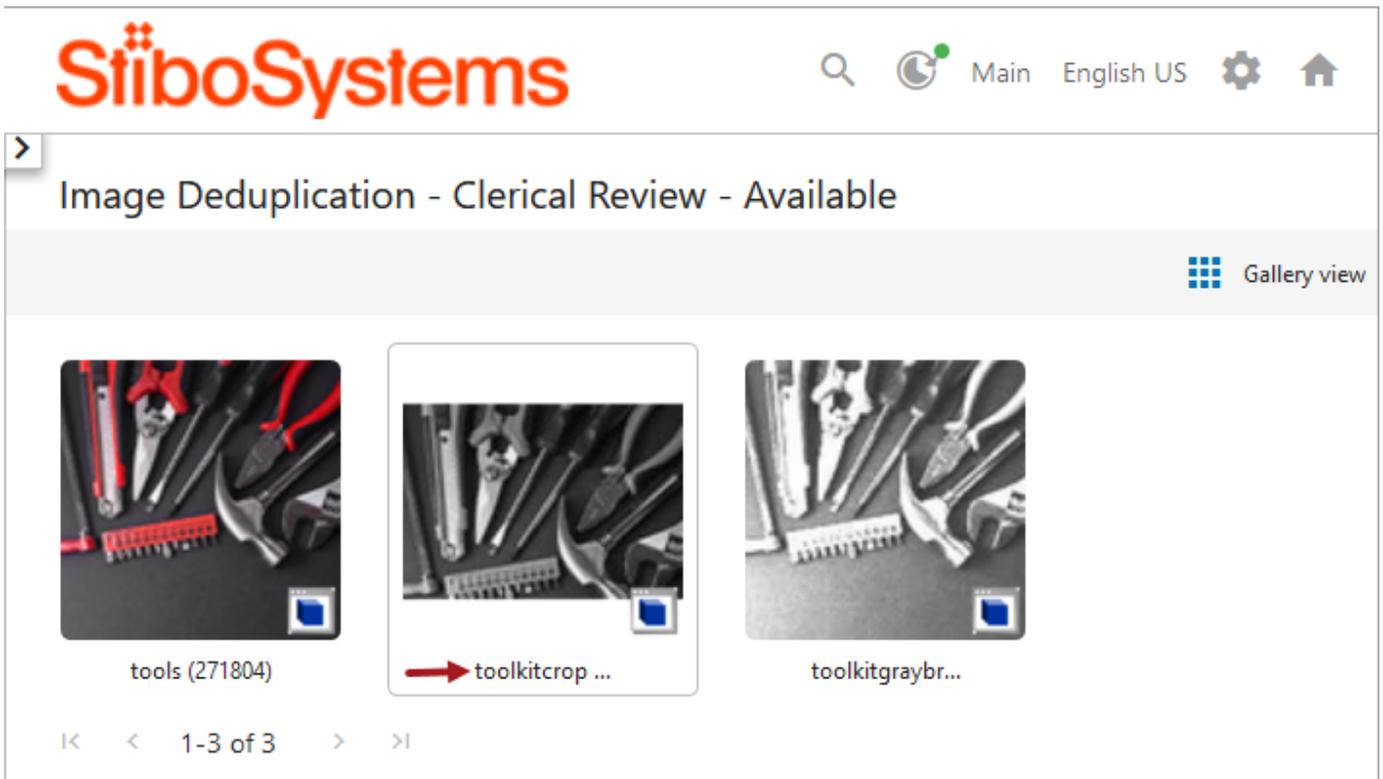
1. In Web UI, on the Image Deduplication homepage widget:

- Select the appropriate user group to display duplicate sets in the clerical review workflow.
- Click the Clerical Review row of the widget to display the task list page.



2. On the task list page, click the name of the image to display the duplicate suggestions page.

Important: To open the duplicate suggestions page you must click on the name, not the image itself.



3. On the Duplicate Suggestions page, an image card is displayed for each potential duplicate in the group.



🔍 🔄 Main English US ⚙️ 🏠

>

3 Duplicate Suggestions

The following assets have been identified as potential duplicates. Please review the assets below and select the ones that are duplicates. Following selection, you will be able to select one master asset to be retained. Any assets that are not selected as duplicates will be marked accordingly and will not be presented as part of this duplicate set in the future. If no duplicates exist, continue without making a selection. If errors are displayed, handling has been previously attempted and was unsuccessful. The errors should be resolved prior to resubmission, or the errored images should be excluded from the duplicate selection. Note that omitting the errored images from the duplicate set will result in them being marked as non-duplicates.

[Select all](#)

 <p>toolkitcrop (273257) File Name toolkitcrop.jpg</p>	 <p>toolkitcrop (273258) File Name toolkitcrop.jpg</p>	 <p>toolkitcrop (273259) File Name toolkitcrop.jpg</p>
---	---	---

- If an image you expected to be considered a duplicate is not displayed, modify the 'Clerical Review Threshold' parameter in the configuration and repeat the test. For more information, see the **Creating an Image Deduplication Configuration** topic.
- If the duplicate suggestions meet your expectations, proceed with the following section, **Managing Duplicates**.

Managing Duplicates

After performing the steps in the previous section **Identifying Duplicate Images**, use the following steps to complete the deduplication process.

1. On the 'Duplicate Suggestions' page, images that do not meet the criteria for being auto-handled are displayed alphabetically by name.

Note: Text that exceeds the setting on the title and metadata attribute parameters is not displayed. To display more text, see the available 'Number of rows displayed' parameters in the **Image Deduplication Clerical Review Screen** topic of the **Web User Interfaces / Web UI Setup and User Guide** documentation.



3 Duplicate Suggestions

The following assets have been identified as potential duplicates. Please review the assets below and select the ones that are duplicates. Following selection, you will be able to select one master asset to be retained. Any assets that are not selected as duplicates will be marked accordingly and will not be presented as part of this duplicate set in the future. If no duplicates exist, continue without making a selection. If errors are displayed, handling has been previously attempted and was unsuccessful. The errors should be resolved prior to resubmission, or the errored images should be excluded from the duplicate selection. Note that omitting the errored images from the duplicate set will result in them being marked as non-duplicates.

[Select all](#)

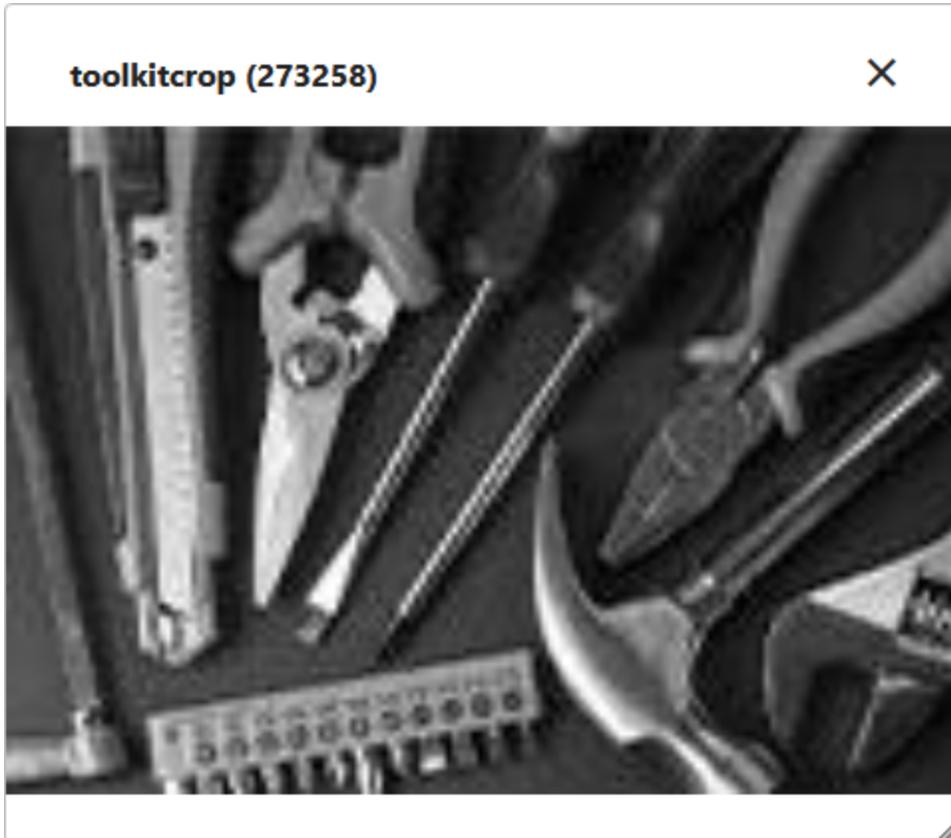
 <p>toolkitcrop (273257) File Name toolkitcrop.jpg Size 6455 Format JPEG (Joint Photographic Experts Group JFIF image) Colorspace RGB</p>	 <p>toolkitcrop (273258) File Name toolkitcrop.jpg Size 6455 Format JPEG (Joint Photographic Experts Group JFIF image) Colorspace RGB</p>	 <p>toolkitcrop (273259) File Name toolkitcrop.jpg Size 6455 Format JPEG (Joint Photographic Experts Group JFIF image) Colorspace RGB</p>
---	---	---

Cancel

→ Continue

Perform one or more actions:

- Hover over an image to display a magnifying glass pointer (🔍). Click with this pointer to view the image in a separate dialog that can be resized or moved. Multiple images can be displayed in this way at the same time for better visual comparison. Click the **X** to close the zoomed image.



- Visually inspect and compare the metadata of the images to determine if one is more suited as the master. Hover over metadata attributes to display the full text hidden due to character length. The number of rows can be configured for each attribute displayed, as defined in the **Image Deduplication Clerical Review Screen** topic.
- As necessary, click on any metadata attribute to confirm that an image is a duplicate, display a white check mark on a blue background (✓), and a blue border on the image card. Click an image card with a check mark to remove the check mark. The absence of a check mark indicates that the image is not a duplicate and will be marked as a 'confirmed non-duplicate' of the master.

Click the **Select all** or the **Deselect all** link to mark or remove the marks from all images displayed.



Note: It is expected that two or more images will be selected as duplicates, or none will be selected at all. Selecting only one results in only that image being available to select as the master in clerical review. Selecting no duplicates results in all being marked as non-duplicates of one another and removes them from future comparisons unless new assets are added that cause them to be reconsidered.

- Click the **Cancel** button to leave the duplicate suggestion page without making any changes. You must click **Confirm** to verify that you want to cancel, or click **Cancel** again to remain on the duplicate suggestions page.
- Click the **Continue** button to proceed to the master image selection page after all necessary duplicates are marked.

Note: If none of the images presented in the Duplicate Suggestions screen are duplicates, none will be selected. Clicking the Continue button and confirming that all images are non-duplicates skips the Select Master page and runs the image deduplication handler.

2. When the Select Master page is displayed, all of the selected duplicate images are included.

Select Master

You have selected the following images as duplicates. Please confirm the suggested selection of a master asset if one has been provided, or select any asset from the set to be retained following deduplication. Non-master assets will be marked for deletion and any references to them will be removed and replaced by references to the selected master asset.



toolkitcrop (273258)

File Name
toolkitcrop.jpg

Size
6455

Format
JPEG (Joint Photographic Experts Group JFIF image)

Colorspace
RGB



toolkitcrop (273259)

File Name
toolkitcrop.jpg

Size
6455

Format
JPEG (Joint Photographic Experts Group JFIF image)

Colorspace
RGB

← Back

Set Master

Perform one or more actions:

- Hover over an image to display a magnifying glass pointer (🔍). Click with this pointer to view the image in a separate dialog that can be resized or moved. Multiple images can be displayed in this way at the same time for better visual comparison. Click the X to close the dialog. (Example image shown in the previous step.)
- Visually inspect and compare the metadata of the images to determine if one is more suited as the master. Hover over metadata attributes to display the full text hidden due to character length. The number of rows can be configured for each attribute displayed, as defined in the **Image Deduplication Clerical Review Screen** topic.
- The system-selected master image is displayed with a white check mark on a blue background (☑) and a blue border on the image card. As necessary, to override the selection, click on any metadata attribute for a different image card to select that image as the master. If the system-selected master image was not selected as a duplicate in the Duplicate Suggestions screen, no images are selected for the master.

One (and only one) image card must be set as master to complete the workflow task. The absence of a check mark indicates that the image is a duplicate and will be marked for deletion.

- Click the **Back** button to return to the duplicate suggestion page.
- Click the **Set Master** button to start the handler and complete the deduplication process. You must click **Confirm** to verify your selection, or click **Cancel** to remain on the select master page.
- After confirming the selected master, the image handling process is checked for errors, for example, with moving references from duplicates to the master. An informational message is displayed, and once closed, the first error is displayed with an error indicator (❗) and a red border is added to on the image card.

Click the error indicator to display details for resolving the problem.

		
<p>tools (271803)</p>	<p>tools (271804)</p>	<p>tools (271805)</p>
<p>Error</p> <p>Product 271274 has an existing ProductImage reference to the selected master asset (271805). Asset 271804 has been identified as a duplicate of the master, but the product already has an existing PrimaryProductImage reference to the duplicate asset. As the references are of a different type, handling will not be applied as it should be investigated why the product has differing references to the same asset. Please resolve the issue to continue, which can be accomplished by removing the PrimaryProductImage to the duplicate asset, or by un-selecting 271804 from the duplicate set.</p>		<p>File Name tools.tif</p> <p>Size 90242</p> <p>Format TIFF (Tagged Image File Format image)</p> <p>Colorspace RGB</p>

Once the 'Image Deduplication Run' handler finishes without error, the workflow task is submitted successfully, and the 'Deduplication completed successfully' message is displayed. This message indicates that the images in the group have been set as confirmed duplicates, confirmed non-duplicates, or the master. Additionally, references for confirmed duplicates have been moved to the master. For details, see the **Updating Image Metadata** section of the **Handling Duplicate Images** topic.

A submitted workflow task is no longer displayed on the task list. Other groups found to be potential duplicate groups are displayed and can be evaluated by repeating the steps starting with step number 2 above.

3. If you want to modify the configuration and evaluate the same images again, see the **Clearing Image Deduplication Metadata Attribute Values** section in the **Running the Image Deduplication Process** topic.

Important: Once an image is marked as a duplicate (its 'Deduplication Delete Flag' metadata attribute is set to 'true') it is ignored by the deduplication functionality, and the final processing should be performed manually. That may include using a workflow to verify and then delete it from STEP, or move it to a hierarchy node outside of the one selected in the configuration, or searching to find all images marked for deletion and then deleting them from STEP as a group. The final processing should also include removing the IDs of the deleted images from the 'Confirmed Duplicates' metadata attribute.

Handling Duplicate Images

Handling duplicate images involves marking them for deletion and transferring their references to a master image that is retained in the system. The stages for handling duplicates are the same when using the auto-handling method and when using the clerical review workflow method. The difference is that for auto-handling, all action is taken without user interaction; for clerical review, a user can manually override the system actions.

A combination of the two methods provides the most effective means of identifying and removing duplicate images, as defined in the **Deduplication Strategy** section below.

For both methods, the complete process is defined below, and involves the following stages:

1. Preparing for deduplication
2. Identifying duplicates
3. Selecting the master
4. Processing images
5. Troubleshooting errors

Deduplication Strategy

The most effective means of identifying and removing duplicate images involves using both auto-handling and the clerical review methods. Using this strategy, pixel-to-pixel matches are identified and automatically handled first, leaving less obvious potential duplicates to be handled manually by a user.

Important: As with any deduplication task aimed to delete redundant data, it is vital to first thoroughly test the process on a non-production system, such as a test environment. Metadata can and intentionally will be lost as a result of the deduplication handling process. **There is no undo option, nor is there a recovery function.** While restoring from a backup can be acceptable in a test environment, it is likely to cause an unacceptable amount of lost data in a production system.

For the initial deduplication run, set the configuration 'Auto-Handling Threshold' parameter to 'Yes' and the 'Clerical Review Threshold' parameter to 'No Clerical Review.' With this configuration, since auto-handling only considers pixel-to-pixel matches, from the set of potential duplicates, the system selects a master image and every other image in the group is compared to that master. If all images match the master pixel-to-pixel, then all images are auto-handled. If more than one image does not match the master pixel-to-pixel, then all are sent to clerical review. This configuration is intended to handle the bulk of the pixel-to-pixel matches up front, reducing the number of images for an end user to process in clerical review. However, as pixel-to-pixel matches are only identified relative to the selected master of the group, it is possible that some subsets of identical images will not be found by this method (for example, two identical images in a larger group will not be auto-handled if neither is a match to the master).

Modify the configuration for subsequent runs with the 'Auto-Handling Threshold' parameter set to 'Yes' and the 'Clerical Review Threshold' parameter set to 'Near Matches.' The process described above will still take place, but with this configuration, the group of images that are determined to be very close to the master will be sent to clerical review. In subsequent runs, the master from the auto-handled group will likely be grouped with the master from the clerical review group for further comparison.

When the configuration no longer produces groups of potential duplicates, consider modifying the 'Clerical Review Threshold' parameter to consider less than near matches and further reduce potential duplicate images.

Important: Once an image is marked as a duplicate (its 'Deduplication Delete Flag' metadata attribute is set to 'true') it is ignored by the deduplication functionality, and the final processing should be performed manually. That may include using a workflow to verify and then delete it from STEP, or move it to a hierarchy node outside of the one selected in the configuration, or searching to find all images marked for deletion and then deleting them from STEP as a group. The final processing should also include removing the IDs of the deleted images from the 'Confirmed Duplicates' metadata attribute.

Example

To illustrate this strategy, consider that images 1-3 are identified as a potential duplicate group, and image 1 is selected as the master. Image 1 is a pixel-to-pixel match to images 2 and 3, so images 2 and 3 will be automatically confirmed as duplicates, marked for deletion, and have their references moved to the master. Next, images 4-6 are identified as a potential duplicate group, and image 4 is selected as the master. Images 4 and 6 are not pixel-to-pixel matches with image 4, so they will be sent as a group to clerical review and a master within the group will be selected, for example image 4. Images 5-6 will be marked as duplicate or non-duplicate based on the user selections, and confirmed duplicates will be handled the same as described for the auto-handling scenario. In a subsequent deduplication run, confirmed duplicates are not considered, but the two masters from a previously split group (images 1 and 4 in this example) may be presented for clerical review against one another.

Preparing for Deduplication

The foundation of the deduplication process uses perceptual hashing, which produces a numeric string representing each image, known as the pHash. The pHash values of images are compared to determine their Hamming distance, which is the number of positions in the string at which the numbers differ. A Hamming distance of zero does not necessarily mean that two images are identical, but it does indicate that they are likely quite similar. Before duplicates can be identified, a pHash value must be assigned to the images that will be evaluated. For more information on pHash, search the web.

- For initial setup, manually run this process to assign a pHash to all images in the classification selected in the image deduplication configuration.
- For subsequent deduplication processing, as additional images are added to the classification, or existing images are modified, a pHash value is calculated when the deduplication process is run. However, manually invoking the prepare images option when a large number of images have been added may reduce the overall time required for deduplication.

For more information, see the **Preparing Images for Deduplication** section of the **Running the Image Deduplication Process** topic.

Identifying Duplicates

The premise of the deduplication algorithm is 'when images look the same, they are the same.' This definition allows for you to determine a level of variation that is acceptable, while potentially sending variations outside that range to the clerical review workflow.

Only elements that can be visually observed affect the outcome of the algorithm. Non-observable ways to compare images do not affect the outcome of the algorithm, such as STEP metadata on the asset object (description attributes), keywords, EXIF, or other embedded data (like photographer or location). Images that appear identical but use different color models (CMYK and RGB) will likely be sent to clerical review (if enabled).

When setting up an image deduplication configuration, the Hamming Distance is taken into account by both the 'Auto-Handling Threshold' and the 'Clerical Review Threshold' parameters. These parameters work together to determine how duplicates are identified and processed. The possible settings are defined in the **Threshold Settings** section of the **Creating an Image Deduplication Configuration** topic. For more information on Hamming Distance, search the web.

For the clerical review process, the user manually selects duplicate images as defined in the **Managing Duplicates** section of the **Using Image Deduplication Clerical Review** topic.

For the auto-handling process, duplicates are images with a pHash and that match the master pixel-to-pixel.

Results

When the image deduplication process completes successfully the following updates are made to a duplicate image:

- The duplicate image displays ID of the master image in the 'Confirmed Duplicates (ImageDeduplicationConfirmedDuplicates)' metadata attribute. Confirming additional duplicates does not overwrite existing non-duplicate IDs.
- The duplicate image displays 'true' for the metadata attribute 'Deduplication Delete Flag (ImageDeduplicationDeleteFlag)'. This indicates that references have been moved to the master image, and the duplicate is ready to be deleted. As long as this value is 'true,' the image is ignored by the image deduplication functionality, regardless of changes to the image or its metadata.
- Classification links on the duplicate images are moved from the duplicate to the master image.
- Product references on the duplicate images are moved from the duplicate to the master image.

Important: Once an image is marked as a duplicate (its 'Deduplication Delete Flag' metadata attribute is set to 'true') it is ignored by the deduplication functionality, and the final processing should be performed manually. That may include using a workflow to verify and then delete it from STEP, or move it to a hierarchy node outside of the one selected in the configuration, or searching to find all images marked for deletion and then deleting them from STEP as a group. The final processing should also include removing the IDs of the deleted images from the 'Confirmed Duplicates' metadata attribute.

Selecting the Master

The system selects a 'master' image based on the evaluation criteria defined below. The master is the image that should be kept and be updated with classification and product references from the duplicates. If a single image cannot be determined as the master (because multiple images meet the criteria), one is selected at random from the images that remain after the last criteria is evaluated. For details, see the **Managing Duplicates** section of the **Using Image Deduplication Clerical Review** topic.

When possible, the auto-handling process selects a single master image based on the following evaluation criteria. When no single image can be selected, the image set is sent to clerical review so the user can manually confirm or override the selected master.

Evaluation Criteria for Auto-Handling Master Selection

The evaluation criteria uses the following checkpoints, in the order defined, in an attempt to find the image where the most information is retained.

For reference, 'lossy' = JPEG and 'non-lossy' = TIFF, PNG, EPS (assuming the TIFF images are not stored using JPEG compression).

For example, generally the most information is indicated by the largest image in terms of pixels. But if there is a non-lossy image format that is greater than 80% as large as a lossy image format, the non-lossy is prioritized over an absolute pixel size. If that fails to lead to a unique master image, the color depth is considered, with a preference for keeping the larger depth. Finally, if that fails to lead to a master image, the color space is considered, knowing that RGB is a larger space than CMYK, so the RGB image has priority.

1. Find the subset of assets in the set that have the highest pixel count (height x width)
 - If the subset includes ONLY non-lossy images:
 - If the subset size = 1, keep this asset and do no further evaluation
 - If the subset size > 1, keep evaluating subsequent criteria (beginning with number 2 below) until a single asset is found, or evaluation criteria runs out
 - If the subset includes ONLY lossy images, AND one or more non-lossy images exist outside of the subset but within the duplicate set at greater than 80% of the pixel count of the highest pixel count, discard the lossy images as candidates and re-start the evaluation from the first bullet after number 1 above with the non-lossy images.
 - If the subset includes ONLY lossy images and there are no non-lossy images outside of the subset at greater than 80% of the pixel count of the highest pixel count, keep evaluating criteria (beginning with number 2 below).
 - If the subset includes lossy and non-lossy images, discard the lossy images and re-start the evaluation from the first bullet after number 1 above.
2. From the set of candidate assets remaining after criteria number 1 is evaluated, find the subset of assets with the highest color depth.
 - If the subset size = 1, keep this asset and do no further evaluation
 - If the subset size > 1, keep evaluating subsequent criteria (beginning with number 3 below) until a single asset is found, or evaluation criteria runs out
3. Sort the remaining set of assets after criteria number 2 is evaluated by color space, with RGB > CMYK.
 - If the subset size = 1, keep this asset and do no further evaluation
 - If subset size > 1, select a random asset from the resulting set as the master. (They are not sent to clerical review.)

Results

When the image deduplication process completes successfully, the master image is updated as follows:

- The ID of all duplicates are written in the 'Confirmed Duplicates (ImageDeduplicationConfirmedDuplicates)' metadata attribute.
- The ID of all non-duplicates manually marked in clerical review are written in the 'Confirmed Non-Duplicates (ImageDeduplicationConfirmedNonDuplicates)' metadata attribute.

- Classification links are moved from the duplicate(s) to the master image.
- Product references are moved from the duplicate(s) to the master image.

Processing Images

Once a master image and the duplicates are identified, and the image deduplication process completes successfully, the system updates the metadata attributes on the images and moves product-to-asset and product-to-classification references from the duplicates to the master. Moving references / links allows the duplicates to be deleted without losing reference / link data.

Important: Metadata attributes on images hold IDs of confirmed duplicates and confirmed non-duplicates. Modifying these attribute values will cause errors with future image deduplication comparisons.

If images being processed by image deduplication are in more than one classification, or if an image is moved while included in a image deduplication workflow task, there can be impacts outside of the selected classification. When deduplication is run, any tasks in the workflow where the system-selected master is child to the selected classification of the image deduplication configuration will have those tasks removed from the workflow.

Configuration

To ensure the best performance when writing values to the confirmed duplicate metadata attribute, the maximum number of values that will be written is limited to 3,000 by default. When the number of values exceeds the limit, the image is filtered out of future processing. For example, with the default limit, an image that already displays 3,000 confirmed duplicate IDs is no longer evaluated during image deduplication.

Important: Once an image is marked as a duplicate (its 'Deduplication Delete Flag' metadata attribute is set to 'true') it is ignored by the deduplication functionality, and the final processing should be performed manually. That may include using a workflow to verify and then delete it from STEP, or move it to a hierarchy node outside of the one selected in the configuration, or searching to find all images marked for deletion and then deleting them from STEP as a group. The final processing should also include removing the IDs of the deleted images from the 'Confirmed Duplicates' metadata attribute.

Increasing the maximum number of values decreases performance. However, the default can be changed via the `sharedconfig.properties` file on the STEP application server using the case-sensitive **ImageDeduplication.ImageDeduplicationDuplicateAttributesValuesMax** property, up to a maximum size of 30,000. When this property is absent from the file, the default is used. Any number entered above 30,000 is ignored and the 3,000 max is used.

For example, you could use the following text to increase the limit to 4,000:

```
ImageDeduplication.ImageDeduplicationDuplicateAttributesValuesMax = 4000
```

When an image is filtered out due to the number of values being exceeded, an message is included in the execution report and in the logs with the following text:

The image with ID [Asset ID] has been excluded from the deduplication process as it has exceeded the max number of values set by the `ImageDeduplication.ImageDeduplicationDuplicateAttributesValuesMax` property for the number of confirmed duplicates. Please clean up confirmed duplicate data by removing the IDs of

previously handled confirmed duplicates, or increase the maximum values allowed for the confirmed duplicates attribute.

Results

When the process completes successfully, the user will notice that the metadata and references have been updated.

Important: This handling may result in loss of data from duplicate asset objects, for example, metadata on the asset, or metadata on references to or from a duplicate asset.

Images identified as duplicates are handled as follows:

- Attribute values on the images are only retained on the master image. This means that if the master image has empty values, they are not updated with data from duplicate images.
- The STEP Name value is retained on the master image.
- If they do not already exist on the master image, classification references / links on the images, and metadata on the references / links, are moved from the duplicate images to the master image. If the reference / link does already exist on the master, the master values and metadata are not modified.
- For any references where the source of the reference (the product) is different between the master and the duplicate(s), the target of the reference (and any metadata on the reference) is moved to be the master.
- For any references where the source of the reference (the product) is the same between the master and a duplicate, but the references are of a different type, the target of the reference is not changed, but is displayed as an error.
- For any references where the source of the reference (the product) is the same between the master and a duplicate, but the references are of the same type, the reference to the duplicate is broken since this reference type already exists.
- For any reference type (product is the source, and the image is the target): when the product is the same on the master image and a duplicate image, but the reference types are not the same, the target is not changed. An error is logged and processing continues for the set of images.
- For any reference type (product is the source, and the image is the target): when the product is the same on the master image and a duplicate image, and the reference types are the same, the reference to the duplicate image is removed. This allows the image to be manually deleted.

Important: All changes made by the handling process are auto-approved, resulting in partial approval for products and images. Depending on the settings in relevant OIEPs, these partial approvals can generate a large number of events.

All images handled are recorded in the step.0 log, which can be accessed via the STEP System Administration link on the STEP Start Page. The log includes errors due to conflicts that cause the deduplication process to fail and allows a user to identify issues so that a manual resolution can be provided. For more information, see the **Administration Portal** documentation.

Troubleshooting Errors

The first error encountered by the deduplication process causes the processing to stop for the group, while the overall process continues. Within the group that includes an error, all handling is rolled back and the group is sent to clerical review (or remains in clerical review if that is where the error occurred).

Errors are stored in the workflow variable 'ImageDeduplicationErrors' and are reported differently, based on their location:

- During auto-handling, errors are reported in the background process execution report, and the group is sent to the clerical review workflow (even if the 'Clerical Review Threshold' parameter was set to 'No clerical review'). Errors are then displayed on the screen within the clerical review task.
- During clerical review, errors are displayed on the screen and must be addressed before the image deduplication process can be completed. For example, an error is displayed when a product has a reference to a master image and a duplicate image, but they are of different reference types. In this case, manual action is required to remove one of the references, or remove the image as a duplicate since the existing references would cause a conflict and cannot both exist at the same time.

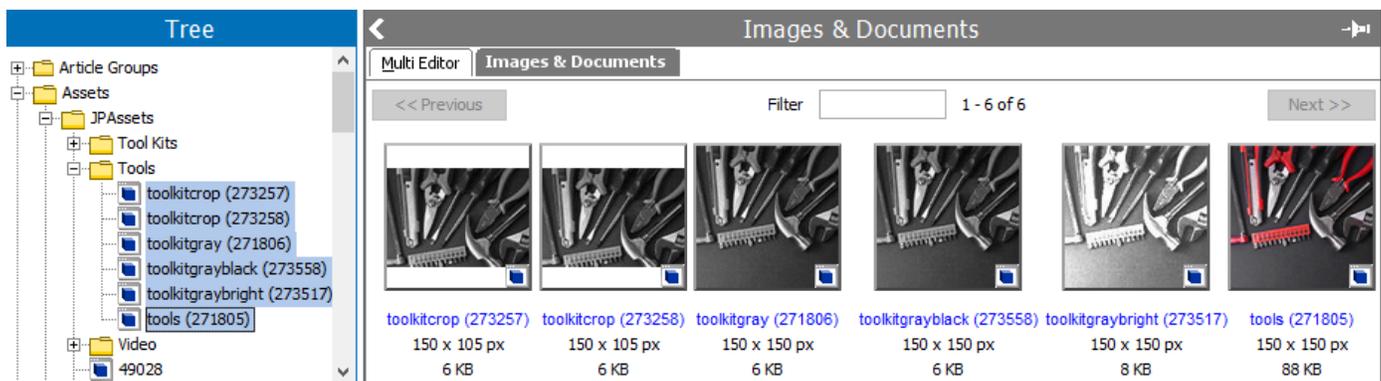
Image Deduplication Example

Image deduplication can be performed using auto-handling and/or the clerical review workflow methods. Essentially, when comparing the pHash of the master image to the other images in the group results in all images matching pixel-to-pixel, the system automatically identifies that the matches are duplicates. When more than one image does not result in a pixel-to-pixel match with the master, then all images are displayed as potential duplicates and must be addressed manually via the workflow. Regardless of the process used to identify the duplicates, the handling of duplicates is the same. For details, see the **Handling Duplicate Images** topic.

Images and Data

The examples below illustrate how the following group of JPG images are evaluated first by the system via auto-handling, and then manually via the workflow. The following image names include the file name followed by the ID in parentheses for easy identification:

- Two identical JPGs with 'toolkitcrop' in the name.
- One JPG with 'toolkitgray' in the name.
- One JPG with 'toolkitgrayblack' in the name.
- One JPG with 'toolkitgraybright' in the name.
- One TIF with 'tools' in the name.



The images are referenced by the following products. Notice that one product has multiple image references.

Tree

- Products
 - Footwear
 - Safety
 - Apparel
 - Hardware
 - Tools
 - Task Lighting
 - Anvils
 - Drills
 - Amazing Kit
 - Best Kit
 - Excellent Kit
 - Doors and Doorknobs
 - Hardware Kit
 - Displays
 - Furniture
 - Automotive
 - Building Products
 - Electrical and Electronics
 - Food and Beverage
 - Kitchen
 - Party Supplies

References

Image References

Reference Type: Product Images

Source	Reference Type	Target	Thumbnail
Amazing Kit	Product Images	toolkitcrop (273257)	
Excellent Kit	Product Images	toolkitcrop (273258)	
Best Kit	Product Images	toolkitgray (271806)	
	Product Images	toolkitgrayblack (273558)	
	Product Images	toolkitgraybright (273517)	
	Product Images	tools (271805)	
	Product Images	tools (271805)	

Before handling, the Image Deduplication attributes contain no value.

Images & Documents | References | Referenced By | Status | State Log | Tasks

Description

Name	Value
ID	271806
Name	toolkitgray (271806)
Object Type	Product Image
Revision	1.3 Last edited by USERJ on Fri Dec 07 13:55:05 EST 2018
Approved	Never Been Approved
Translation	Not Translated
Path	Classification 1 root/Assets/JPAssets/Tools/toolkitgray (271806)
Confirmed Duplicates	abc
Confirmed Non-Duplicates	abc
Deduplication Delete Flag	abc

System Properties:

Name	Value
Class	True color
Colorspace	RGB

The configuration named 'Image Deduplication' (shown below) has auto-handling and clerical review enabled. Similar Images will be sent to the clerical review workflow.

Image Deduplication Configuration	
Log Status	
Description	
Base Configuration	
> Classification	Tools
> Clerical Review Workflow	Image Deduplication
> Auto-Handling Threshold	Yes
> Clerical Review Threshold	Similar Images
> Edit Configuration	

First, the images in the 'Tools (ID 271239)' classification are prepared using the 'Prepare images for deduplication' right-click option on the configuration. The 'Image Deduplication Preparation' background process displays the following report which shows the classification ID and the number of images that were assigned a pHash.

Image Deduplication Preparation - Background Process

Background Process | Queue Info

Properties

Execution Report

- 1 Calculating phashes for classification: 271239
- 2 Found 6 assets in classification with ID : 271239. 6 of them passed the filtering phase, of which 6 have valid representation that will be stored.
- 3 6 valid assets representations have been stored, 0 invalid asset representations have been omitted

Navigation: << < 1-3 of 3 > >> Save... Truncate

Next, the 'Run image deduplication' right-click option preforms the image evaluations and selects the master image. The 'Image Deduplication Run' background process displays the following report, which shows that two groups were handled: one by auto-handling and one is sent to clerical review. The master images and the group members are identified.

Image Deduplication Run - Background Process

Background Process Queue Info

Properties

Execution Report

- 1 Running deduplication algorithm for classification : 271239
- 2 Found 6 assets in classification with ID : 271239. 6 of them passed the filtering phase, of which 6 have valid representation and will be provided to the algorithm.
- 3 6 up-to-date and 0 outdated asset representations have been fetched, 0 assets have had no asset representation stored yet.
- 4 Auto merge enabled
- 5 Clerical Review threshold = 80
- 6 Out of 1 groups, 1 were not changed by auto merge safety mechanism
- 7 Group handling (DefaultGroupHandler) started.
- 8 Handling group that has to be automerged
- 9 Group master : 273258
- 10 Group members : 273257
- 11 Reference of type Product Images from product Amazing Kit changed target from 273257(toolkitcrop (273257)) to 273258(toolkitcrop (273258))
- 12 "Product references approval" phase of handling group was not fully executed because of exception - Missing mandatory values on attributes : step://attribute?id
- 13 "Asset approval" phase of handling group was not fully executed because of exception - Cannot synchronize reference to destination object [step://asset?id=273
- 14 Successfully handled group, group's master : 273258
- 15 Successfully handled 1 out of 1 groups in auto-merge phase
- 16 Group handling (DefaultGroupHandler) finished, took 537 ms
- 17 Clerical Reviews started.
- 18 Creating clerical review task
- 19 Group master : 271805
- 20 Group members : 271806;273558
- 21 Successfully handled group, group's master : 271805
- 22 Successfully handled 1 out of 1 groups in clerical phase
- 23 Clerical Reviews finished, took 155 ms

In Web UI, the Status Selector Homepage Widget shows that one group is in the clerical review workflow.

IMAGE DEDUPLICATION



Clerical Review → 1

Clicking the 'Clerical Review' count displays the 'Image Deduplication - Clerical Review - Available' page with the image group that requires manual identification of duplicates.

The screenshot displays the StiboSystems web interface. At the top left is the StiboSystems logo. To the right of the logo are navigation icons: a magnifying glass, a refresh icon, the text 'Main', 'English US', a gear icon, and a home icon. Below the navigation bar is a breadcrumb trail starting with a right-pointing chevron followed by the text 'Image Deduplication - Clerical Review - Available'. On the right side of this breadcrumb bar is a 'Gallery view' button with a grid icon. The main content area features a single image card. The image shows a collection of tools, including wrenches, pliers, and a hammer. Below the image is the text 'tools (271805)' with a red arrow pointing to the right. At the bottom of the image card are navigation controls: a left-pointing chevron, a left arrow, the text '1-1 of 1', a right arrow, and a right-pointing chevron.

Clicking the name of the selected master image displays the task list page with image cards for objects in the group. Visually comparing the image cards, the first two with gray tools, are decided to be close enough that they will be marked duplicates by clicking the metadata attributes on each. The last card, with the red tools, will not be selected as a duplicate.

3 Duplicate Suggestions

The following assets have been identified as potential duplicates. Please review the assets below and select the ones that are duplicates. Following selection, you will be able to select one master asset to be retained. Any assets that are not selected as duplicates will be marked accordingly and will not be presented as part of this duplicate set in the future. If no duplicates exist, continue without making a selection. If errors are displayed, handling has been previously attempted and was unsuccessful. The errors should be resolved prior to resubmission, or the errored images should be excluded from the duplicate selection. Note that omitting the errored images from the duplicate set will result in them being marked as non-duplicates.

[Select all](#)



toolkitgray (271806)

File Name
toolkitgray.jpg

Size
7055

Format
JPEG (Joint Photographic Experts Group JFIF image)

Colorspace
RGB



toolkitgrayblack (273558)

File Name
toolkitgrayblack.jpg

Size
7106

Format
JPEG (Joint Photographic Experts Group JFIF image)

Colorspace
RGB



tools (271805)

File Name
tools.tif

Size
90242

Format
TIFF (Tagged Image File Format image)

Colorspace
RGB

Cancel

→ Continue

Clicking the **Continue** button advances to the 'Select Master' page where the selected duplicates are displayed. When the system-selected master (in this example, the TIF image with the name 'tools (271805)') is also marked as a duplicate, that image is automatically marked as the default master on the 'Select Master' page. However, since the system-selected master was not manually selected as a duplicate, no master is automatically indicated on the 'Select Master' page. In this scenario, the user will select a master from the available cards (or use the Back button to return to the previous page and select no images as duplicates).

Select Master

You have selected the following images as duplicates. Please confirm the suggested selection of a master asset if one has been provided, or select any asset from the set to be retained following deduplication. Non-master assets will be marked for deletion and any references to them will be removed and replaced by references to the selected master asset.



toolkitgray (271806)

File Name
toolkitgray.jpg

Size
7055

Format
JPEG (Joint Photographic Experts Group JFIF image)

Colorspace
RGB



toolkitgrayblack (273558)

File Name
toolkitgrayblack.jpg

Size
7106

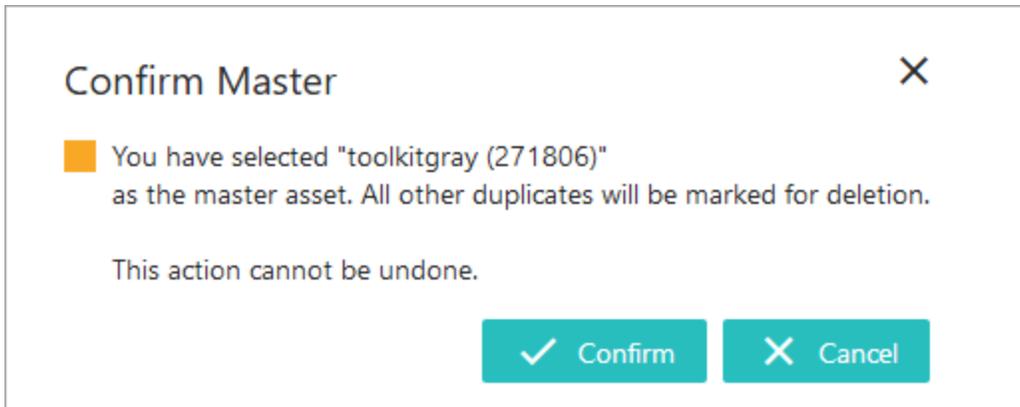
Format
JPEG (Joint Photographic Experts Group JFIF image)

Colorspace
RGB

← Back

Set Master

Clicking the **Set Master** button displays a confirmation message that identifies the image that will be kept and will receive references on the duplicates. All other images displayed will be marked as duplicates and also marked for deletion.



Click the **Confirm** button to update the metadata attributes and references on the evaluated images. The 'Deduplication completed successfully' message is displayed.



The numbers in the lists below correspond to the numbers in the image to explain how the evaluated images were updated:

From the auto-handling process:

1. Image 'toolkitcrop (273258)' was selected as the master, so it shows 'toolkitcrop (273257)' as a confirmed duplicate.
2. Image 'toolkitcrop (273257)' was marked as a duplicate, so it shows the master ID as a confirmed duplicate and the Deduplication Delete Flag is set to 'true.'

From the clerical review workflow task:

3. Image 'toolkitgray (271806)' was manually selected as the master, so it shows 'toolkitgrayblack (273558)' as a confirmed duplicate, and 'tools (271805)' as a confirmed non-duplicate.
4. Image 'tools (271805)' was marked as a non-duplicate to the master, so it shows the master ID as a confirmed non-duplicate.
5. Image 'toolkitgrayblack (273558)' was marked as a duplicate, so it shows the master ID as a confirmed duplicate and the Deduplication Delete Flag is set to 'true.'

The final image:

6. Image 'toolkitgraybright (273517)' was not included in either group, so it is not updated.

Selected Items

Select all

	<input type="checkbox"/>	<input type="checkbox"/>				
	tools	toolkitgray	toolkitcrop	toolkitcrop	toolkitgraybright	toolkitgrayblack
ID	271805	271806	273257	273258	273517	273558
Name	tools (271805)	toolkitgray (271806)	toolkitcrop (273257)	toolkitcrop (273258)	toolkitgraybright (273517)	toolkitgrayblack (273558)
Image Deduplication	4	3	2	1	6	5
Confirmed Duplicates		273558	273258	273257		271806
Confirmed Non-Duplicates	271806	271805				
Deduplication Delete Flag			true			true

Number of items : 6

Finally, products that previously targeted duplicate images ('toolkitcrop (273257)' and 'toolkitgrayblack (273558)') via a 'product-to-asset' image reference have been updated to target the master images ('toolkitcrop (273258)' and 'toolkitgray (271806)'). The duplicate images have no remaining references, which allows them to be deleted.

StiboSystems

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>

Selected Items

☑️ Select all

	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Excellent Kit	Amazing Kit	Best Kit
ID	• 271270	271272	271274
Name	• Excellent Kit	Amazing Kit	Best Kit
Product Images	• toolgroup (271339) tools (271343)	toolkitgray (271340) tools (271343)	tools (271343)

Number of items : 3

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Exporting Assets

STEP assets can be either images or non-images (based on MIME type), but both include metadata, references, and digital content. For more information, see the **MIME Types** section of the **System Setup / Super User Guide**.

- **Images** are assets, usually with a MIME type of **image/***, and can be converted during export from STEP. Modifications can include changes to size, color, and/or converting the file to a format available in the wizard. Image Conversion Configurations allow these modifications to be saved and applied consistently for additional exports. For more information about converting images, see **Image Conversion Configuration** in the **Digital Assets** documentation.
- **Non-images** are assets with any other MIME type and cannot be modified during an export. Non-images are exported from STEP in the same format and manner that they were loaded into STEP.

Assets can be exported using:

- **Export Images and Documents** wizard allows you to manually export asset digital content.
- **Export Manager** or an **OIEP** allows you to manually export asset metadata, references, and digital content, in addition to data, using STEPXML.
- **Asset Push** allows you to automatically export modified / approved assets.
- **REST API** allows you to upload files to REST. For more information, click the **STEP API Documentation** button on the STEP Start Page.

Asset Push

Asset push allows users to export assets from STEP to a local file system, where they can be accessed by external users and systems. These assets are automatically exported whenever an object is modified or approved (depending on the asset push configuration), ensuring that the assets stored in the local file system are always updated with the latest versions of the assets from the central STEP database. Considering the potentially large size of the assets being exported, this method is favorable over manually exporting assets in bulk.

With asset push, users can maintain a single high resolution image in STEP, and convert it to all the various formats required for use in external systems. The external files will always reflect the most up-to-date images that are in the STEP system. Conversion templates can be applied to transform these images from high resolution to low resolution, resize images, apply color scales to images, and more. Images can also be pushed as-is from STEP to make them available to other applications.

Low resolution images, such as those used in web applications, are not held inside the STEP system. Typically, the STEP system holds only the high resolution version of an image. Thus, dragging images or documents out of the STEP system in an ad-hoc manner would require considerable resources, and in addition, they would have to be extracted every time they were requested. That is not only true for web-type images (where conceivably there would have to be multiple on-the-fly conversions to all the required low resolution versions of the image) but also for high resolution images (where, although there is usually no conversion, images of 10-20MB or more are commonly held in STEP).

Important: Asset push does not send asset files directly to downstream systems. Instead, it makes files available for retrieval by these systems, so that on-demand extractions from the intermediate file system can occur without putting any strain on the STEP system.

Asset Push Terminology

Term	Definition
Asset	Any collateral or document in electronic format, such as an image, Word document, Excel file, PDF, PowerPoint file, text file, etc.
Asset Push	A process that exports assets from STEP to a file system for different purposes. Conversion templates can be applied to transform images, for example from high resolution to low resolution, resizing, applying color scales, etc, though assets can also be sent as-is.
assetpush.properties file	Properties file that specifies parameters specific to an individual asset push, including login credentials for the local file system. One file of this type exists for each asset push event queue. Note that the ImagesFolder property is included in this file, which indicates the root directory to which the Relative Path Template is applied (e.g., [ImagesFolder][RelativePathTemplate]).

Term	Definition
Asset Push Event Queue	Queue to listen for events on assets. Multiple asset push configurations can exist on a single event queue. A single event queue is required per Asset Push Sidecar. In other words, assets being pushed to the same destination system may share a single event queue with one or more configurations assigned to it.
Asset Push Sidecar	External files installed on various machines, oftentimes on the application server or a remotely located machine. STEP can communicate with sidecars so that when a relevant activity is triggered in STEP, the sidecar is informed of the associated task and carries it out. One sidecar is required for each location to which assets must be pushed. Multiple configurations may share a sidecar if they are also sharing a root destination (as specified in the assetpush.properties file). For more information, see the Asset Push Sidecar topic in this documentation.
Configurations (as related to asset push)	Definition of how an individual asset push will function, including the conversion, relative path template, and acceptable MIME types. Any number of configurations can exist under a single Asset Push Queue in STEP.
Conversions (as related to asset push)	A series of parameters defining the way in which an image is transformed from the standard high resolution asset that exists in STEP to the required downstream format. Several conversion options are available by default. Note that conversions change assets as they are pushed, leaving the originating file in STEP unchanged. One asset push configuration is required for each required conversion, as a conversion is a parameter within the overall asset push configuration. Note that a Conversion is an optional parameter for each Configuration.
MIME Type	<p>Standard identifier used to indicate the type of data that a file contains. In STEP, each asset push configuration includes an option to specify MIME Types to be used in the configuration. Leaving this entry blank means that all asset types meeting the other configuration parameters will be attempted to be converted and/or pushed as specified. Populating this entry means that conversion and/or push will only be attempted for assets meeting the specified types.</p> <p>Note that the configuration property (AssetPush.SkipMimeTypeCheck=false) should be added to the sharedconfig.properties file to keep undefined MIME types from being imported. Otherwise, no check is made when importing assets.</p> <p>For more information about MIME types, see the MIME Types section of the System Setup / Super User Guide documentation.</p>
Relative Path Template	Used in conjunction with the asset path specified in the assetpush.properties file to tell the system where to place the pushed assets. Can be used to create a flat structure or a hierarchy structure, and will typically utilize several pre-defined STEP

Term	Definition
	<p>macros to dynamically create directories. The value entered is used following the root directory specified in the assetpush.properties file (e.g., [ImagesFolder]/[RelativePathTemplate]).</p> <p>For more information about Relative Path Templates, see the Relative Path Template Overview section of the Asset Push documentation.</p>
Sharedconfig.properties file	Properties file that specifies many system parameters, including some that define general asset push functionality across all asset push event queues on the system.

Enabling Asset Push

To enable asset push, the user must perform the following actions:

1. Create an image conversion configuration if one is required and none of the standard conversion configurations can be applied. See the **Image Conversion Configuration** section of the **Export Manager** documentation for more information.
2. Ensure that the java sidecar application is installed on the client / server where the external file structure is located. For more information on installing an Asset Push Sidecar, see the **Installing an Asset Push Sidecar** topic in this topic. If any problems arise, contact your Stibo Systems account manager and/or submit a help desk ticket to complete this step.
3. Create an asset push event queue if one linked to the correct sidecar does not already exist. See the **Creating Asset Push Event Queues** section of the **Asset Push** documentation for more information.
4. Create one or more asset push configurations. See the **Creating Asset Push Configurations** section of the **Asset Push** documentation for more information.
5. Initiate the first asset push manually. See the **Starting the Asset Push Process** section of the **Asset Push** documentation for more information.

Additional Information

- Assets that have not been pushed or have failed to push can be found by using the 'Unpushed or Failed Assets' search criterion. See the **Search: Unpushed or Failed Assets** topic within the **Navigation and Searches** section of the **Getting Started / User Guide** documentation for more information.
- It may be necessary to monitor the activity of asset pushes, which can be especially important in the event that an asset conversion or extraction fails. See the **Monitoring Asset Push** section of the **Asset Push** documentation for more information.
- Asset Push is utilized to make **assets continuously available to downstream systems** with the latest content and in any required formats, while also **minimizing any performance** impacts this could have on the system.
- rsync allows images to be synchronized between a base STEP system and two remote systems. For more information, see the **rsync Use Case** topic in this documentation.

Asset Push Sidecar

The need for Asset Push is driven by the requirement that Assets, which are Images and Documents, need to be available to external initiatives, such as for Web Publishing and Print Publishing, i.e., DTP. In the majority of instances, Asset Push is used to generate a version of images only.

The Asset Push is a process that exports assets from STEP to a file system for different purposes. Conversion templates can be applied to transform images, for example from high resolution to low resolution, resizing, applying color scales, etc., though assets can also be sent as-is.

For more information, see the **Asset Push** topic in this documentation

An Asset Push Event Queue is a queue STEP uses to listen for events on assets. Multiple asset push configurations can exist on a single event queue, though one event queue is required per sidecar. Assets being pushed to the same destination system may share a single event queue with one or more configurations assigned to it.

For more information, see the **Creating and Maintaining Asset Push Event Queue** topic in this documentation.

A Sidecar is an optional STEP component consisting of external files installed on various machines, which is often on the application server or a remotely located machine. STEP can communicate with sidecars, so that when a relevant activity is triggered in STEP, the sidecar is informed of the associated task and carries it out.

One Sidecar is required for each location to which assets must be pushed. Multiple configurations may share a sidecar if they are also sharing a root destination (as specified in the assetpush.properties file).

For more information, see the **Overview of the Asset Push Sidecar Installation** topic in this documentation.

Prerequisites

An AdoptOpenJDK variant of Java 1.8 must be installed on the system where the sidecar is installed. Also, an Asset Push Queue must be created before the sidecar may be installed. For more information, see the **Creating and Maintaining Asset Push Event Queues** topic in this documentation.

Additionally, if image conversion is required as part of the asset push, the image conversion configuration must be completed prior to the asset push configuration, so that the conversion can be selected as part of the configuration. See the **Image Conversion Configuration** topic for more information.

Overview of the Asset Push Sidecar Installation

The following documents will create an Asset Push Sidecar. Each item is required for a successful installation. This topic will focus on the preliminary setup outside of the key installation.

1. Create the Asset Push Directory
2. Download the Asset Push jar file
3. Asset Push Sidecar Installation
4. Verifying and Testing the Asset Push Sidecar
5. Uninstalling the Asset Push Sidecar

For information on logging, starting / stopping / checking the status of the sidecar, as well as any limitations of this guide, please see the **Additional Asset Push Sidecar Information** topic in this documentation.

Create a Directory for Asset Push Sidecar Files

First, a directory is needed to house the files and installation of each Asset Push Sidecar. Create a directory on the host machine where the Asset Push Sidecar files will be stored. This can be on one application server, InDesign server, or Asset Push File Server to where the assets should be pushed.

For Linux or Mac Environments

```
/workarea
```

For Windows Environment

```
L:\
```

For example

```
/workarea/sidecar/assetpushqueue-DTPConfiguration/
```

or

```
L:\sidecar\assetpushqueue-DTPConfiguration\
```

Downloading Asset Push .jar File

Next, the jar file for the desired asset push queue needs to be downloaded to install the sidecar. To locate the jar file, go to your web browser and access the STEP application server URL/sidecar,

```
http://server.domain/sidecar/
```

If it is possible, download this .jar file from the machine that should run the Asset Push Sidecar. The sidecar page will list the asset push queues that have been created.

Known Sidecars

This page lists all the known sidecar instances.

assetpush

No instances configured.

assetpushqueue

Deployment jar	Service Name	Current Status
assetpushqueue-DTPConfiguration.jar	Stibo AssetPushQueue (DTPConfiguration)	stopped on 10.232.6.35 since 16:29:11 05 Mar 2019 (moments ago)

stepndesign

No instances configured.

Download the jar file to the created directory, and start a terminal window or command prompt in this directory.

Next, the sidecar will be installed, created the needed files. See the Installing the Sidecar topic in this documentation for the next step.

Installing an Asset Push Sidecar

To successfully use an Asset Push Sidecar, an asset storage folder will need to be created.

Creating a directory for pushed assets based on the operating system

For Linux Environments

- To create a directory for pushed assets, open the console / terminal window and navigate to the Asset Push Sidecar created in the **Overview of the Asset Push Sidecar Installation** topic. For example, type:

```
cd /workarea/sidecar/assetpushqueue-DTPConfiguration
```
- This will change the current directory to the 'assetpush-DTPConfiguration' directory of the asset push queue. Next, create a directory to store the pushed assets. For this guide, the directory will be called 'images.' For example, type:

```
mkdir images
```

Subsequently, this directory can be a separate partition for assets. For example:

```
/images
```

For Windows Environments

- To create a directory for pushed assets, open the command prompt window as an Administrator and navigate to the Asset Push Sidecar directory. In this guide, the L: drive is used.
- Go to Asset Push Sidecar directory or L: drive

```
L: <Enter>
```

```
cd L:\sidecar\assetpushqueue-DTPConfiguration
```

Now, create a directory for the assets using Windows Explorer (Right-click + New > Folder) or from the command line. In this example, the 'images' directory is created with:

```
mkdir images
```

Subsequently, this directory can be a separate partition for assets. For example:

```
N:\images
```

For Mac Environments

- To create a directory for pushed assets, open the console / terminal window and navigate to the Asset Push Sidecar created in the **Overview of the Asset Push Sidecar Installation** topic. For example, type:

```
cd /workarea/sidecar/assetpushqueue-DTPConfiguration
```
- This will change the current directory to the 'assetpush-DTPConfiguration' directory of the asset push queue. Next, create a directory to store the pushed assets. For this guide, the directory will be called 'images.' For example, type:

```
mkdir images
```

Subsequently, this directory can be a separate partition for assets. For example:

```
/images
```

Creating the Asset Push Sidecar Files

The next step requires executing some commands in the terminal or command line to build the Asset Push Sidecar. This process is uniform across operating systems.

- From the Asset Push Sidecar directory run the following command:
- After the files are built, the Asset Push directory will look like the following, if the previously created folder storing assets is called 'images.'

```
java -jar assetpushqueue-DTPConfiguration.jar --test

assetpush.properties

assetpushqueue-DTPConfiguration.jar

images/

log.properties

logs/
```

All Available Java Commands

To get all available syntax for sidecar installation run the following command:

```
java -jar assetpushqueue-DTPConfiguration.jar --help
```

The following is a list of all available options with Java.

```
-h or --help Show this help message
-i or --install Install as a service
-u or --uninstall Uninstall the service
-t or --test Run the payload, exit if it fails
-r or --run Run the payload, restart if it fails
-s or --stop Stop a running payload
-c ... or --config=... Pass configuration variables to the payload
--java=... Explicitly point out the java binary to use for the payload
comma separated no spaces
```

Creating a New User ID / Name in STEP for Asset Push Sidecar

A new user will need to be created in STEP to use in identifying the Asset Push process in logs. In this example, the user 'assetpush' will be used. For more information, see the **Users and Groups** topic in the **System Setup / Super User Guide** documentation.

ID assetpush

Name assetpush

The 'step.x.log' will show the user as follows:

```
2017/07/08-11:59:56 User:ASSETPUSH
com.stibo.core.domain.impl.documentcontent.cmd.Graphics
```

```
MagickCmd execute INFO: GraphicsMagickCmd.execute: size 2017/07/08-11:59:56 User:ASSETPUSH
```

```
com.stibo.core.domain.impl.documentcontent.cmd.Graphics
```

```
MagickCmd execute INFO: GraphicsMagickCmd.execute: mode 2017/07/08-11:59:56 User:ASSETPUSH
```

```
com.stibo.core.domain.impl.documentcontent.cmd.Graphics
```

```
MagickCmd execute INFO: GraphicsMagickCmd.execute: save
```

Modifying the assetpush.properties File

To modify the assetpush.properties file, navigate to the Asset Push Sidecar directory, and edit the assetpush.properties. In the assetpush.properties, edit the 'UserName,' 'Password,' 'ImagesFolder,' and 'Delay' properties. The following is an example.

```
#Please edit UserName and Password to fit your system, but leave the rest as-is if possible.
```

```
#Sat June 08 14:35:31 EST 2017
```

```
Password=assetpush
```

```
ImagesFolder=/images
```

```
UserName=assetpush
```

```
Delay=30
```

Once finished, save the assetpush.properties file. From a command line or terminal, re-run the following command to verify that the property changes are accepted.

```
java -jar assetpushqueue-DTPConfiguration.jar --test
```

or

```
java -jar assetpushqueue-DTPConfiguration.jar -t
```

Definition of Properties

The following details the function of the elements of the properties file.

- **UserName** - User Name for file system login. This is set in STEP.
- **Password** - Password for file system login. This is set in STEP.
- **ImageFolder** - This option specifies the first part of the path and/or parent directory into which all pushed assets will be placed. Relative Path Template takes effect after this, meaning that all asset push configurations under a single event queue will share a parent folder on the local file system, but each configuration is expected to have a separate directory structure under the common parent.
- **Delay** - This option is the rate in seconds for the sidecar to ping the file system to ensure connection. The default is set to 30 seconds and should not be changed without consulting with Stibo Systems Technical Services.

Note: The UserID that is used by the asset push side car must have the 'View metadata for asset (property value)' user action. For more information, see the **User Actions** topic in the **System Setup / Super User** documentation.

Completing the Installation of the Asset Push Sidecar

The next step of the installation will actually install the individual files for the Asset Push Sidecar. The process varies per operating system.

For Linux Environments

To complete installation of the actual Asset Push Sidecar, run the following command:

```
java -jar assetpushqueue-DTPConfiguration.jar --install
```

or

```
java -jar assetpushqueue-DTPConfiguration.jar -i
```

The following response will be returned:

```
Jun 23, 2017 11:42:25 AM com.stibo.sidecar.StatusReporter
getAddressFacing
INFO: Detected public IP facing hostname-internal.stibo.com:80 =
10.232.4.131
To make this sidecar start automatically on boot, please run crontab -e
to add this line:
@reboot /workarea/sidecar/assetpushqueue-DTPConfiguration/assetpushqueue-
DTPConfiguration
Jun 23, 2017 11:42:25 AM com.stibo.sidecar.StatusReporter
getAddressFacing
INFO: Detected public IP facing hostname-internal.stibo.com:80 =
10.232.4.131
```

For Windows Environments

To complete installation of the actual Asset Push Sidecar, run the following command:

```
java -jar assetpushqueue-DTPConfiguration.jar --install
```

or

```
java -jar assetpushqueue-DTPConfiguration.jar -i
```

The following response will be returned:

```
L:\sidecar\assetpushqueue-DTPConfiguration>java -jar assetpushqueue-
DTPConfiguration.jar -i
Jul 05, 2017 3:32:42 PM com.stibo.sidecar.StatusReporter getAddressFacing
INFO: Detected public IP facing hostname-dev.com:80 = 10.64.8.170
```

The service was installed, use `sc start assetpushqueue-DTPConfiguration` to start the service

Note: There are now references in windows to `L:\sidecar\assetpushqueue-DTPConfiguration\sidecar`

you must not move these sored files or the service will break.

```
Jul 05, 2017 3:32:47 PM com.stibo.sidecar.StatusReporter getAddressFacing
INFO: Detected public IP facing hostname-dev.com:80 = 10.64.8.170
```

For Mac Environments

To complete installation of the actual Asset Push Sidecar, run the following command:

```
java -jar assetpushqueue-DTPConfiguration.jar --install
```

or

```
java -jar assetpushqueue-DTPConfiguration.jar -i
```

The following response will be returned:

```
macpro:sidecar stibosw$ java -jar assetpushqueue-DTPConfiguration.jar -i
Jul 05, 2017 12:22:53 PM com.stibo.sidecar.StatusReporter
getAddressFacing
INFO: Detected public IP facing hostname-dev.com:80 = 10.64.10.35
Please run these commands:
sudo cp /Users/stibosw/sidecar/com.stibo.sidecar.assetpushqueue-
DTPConfiguration.plist
/Library/LaunchDaemons/com.stibo.sidecar.assetpushqueue-
DTPConfiguration.plist
sudo launchctl load
/Library/LaunchDaemons/com.stibo.sidecar.assetpushqueue-
DTPConfiguration.plist
sudo launchctl start com.stibo.sidecar.assetpushqueue-DTPConfiguration
Jul 05, 2017 12:22:53 PM com.stibo.sidecar.StatusReporter
getAddressFacing
INFO: Detected public IP facing hostname-dev.com:80 = 10.64.10.35
```

Finalizing the Installation of the Asset Push Sidecar

For Linux Environments

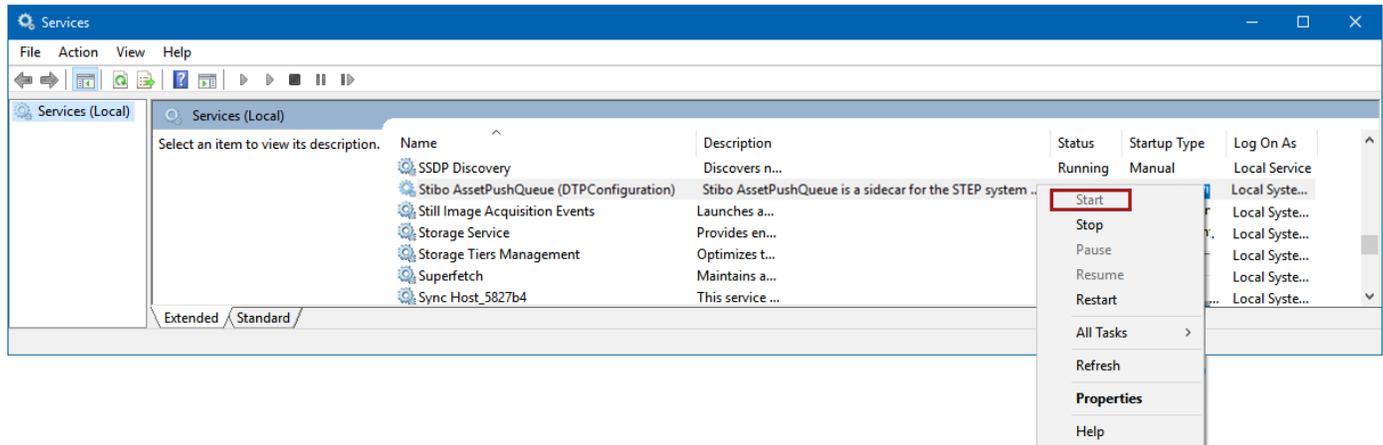
After the Asset Push Sidecar has been installed, the next step is to set it to run. From the sidecar directory, run the following command:

```
assetpushqueue-DTPConfiguration start
```

Stibo AssetPushQueue (DTPConfiguration) has been started see log files in
/workarea/sidecar/assetpushqueue-DTPConfiguration/logs

For Windows Environments

To start the Asset Push Sidecar, go to the Windows Services component. In the Services window, locate the Stibo AssetPushQueue (assetpushqueue-DTPConfiguration). On the entry, right-click and select 'Start.'



For Mac Environments

After the Asset Push Sidecar has been installed, the next step is to set it to run. From the sidecar directory, run the following command:

```
sudo launchctl load
/Library/LaunchDaemons/com.stibo.sidecar.assetpushqueue-
DTPConfiguration.plist
```

Testing Asset Push Sidecar

After the Asset Push Sidecar has been configured to run and the configurations have been set up, in the STEP Workbench, 'Push' or 'Force Push' a few assets to test that the configuration and ensure that the sidecar are working properly.

For more information on maintaining the Asset Push Sidecar, see the **Additional Asset Push Sidecar Information** topic, and for instructions to remove this Asset Push Sidecar, see the **Uninstalling an Asset Push Sidecar** topic.

Additional Asset Push Sidecar Information

The following information is useful for utilizing the Asset Push Sidecar.

How to Verify Sidecar Installation

After finalizing the Asset Push Sidecar installation as seen in the Installing Asset Push Sidecar topic, open your web browser and navigate to <http://server.domain/sidecar/> URL page and check the Current Status of the assetpushqueue sidecar.

Known Sidecars

This page lists all the known sidecar instances.

assetpush

No instances configured.

assetpushqueue

Deployment jar	Service Name	Current Status
assetpushqueue-DTPConfiguration.jar	Stibo AssetPushQueue (DTPConfiguration)	running on 10.232.6.35 since 16:35:22 05 Mar 2019 (moments ago)

stepndesign

No instances configured.

At this point, the Sidecar web page will show that the sidecar is running, instead of 'stopped' or 'offline.' Now, from the STEP Workbench, go to System Setup tab > Event Queues > Event Queue. In this example, the Asset Push Event Queue is 'DTPConfiguration.'

<
DTPConfiguration – Asset Push Queue Editor
>

Asset Push Queue Editor
Log

Name	Value
> ID	DTPConfiguration
> Name	DTPConfiguration
> Queue Status	Read Events
> Days to retain events	0
> Unread events (appro...	Click to estimate ...
> Asset Push Sidecar	Connected from 10.232.4.131:/workarea/sidecar/assetpushqueue-DTPConfiguration
> Consumer Read	Enabled

The 'assetpushqueue-DTPConfiguration' will show that it is 'Connected' and 'Enabled.'

Setting up Asset Push Sidecar to Start Automatically

The following section will detail how to automatically start the Asset Push Sidecar when the application server is rebooted. It is not required for the Asset Push Sidecar to function, but it is advised to configure so that users do not need to remember to run the Asset Push Sidecar.

For Linux Environments

Enter the following command in the Asset Push Sidecar directory to set the sidecar to automatically run:

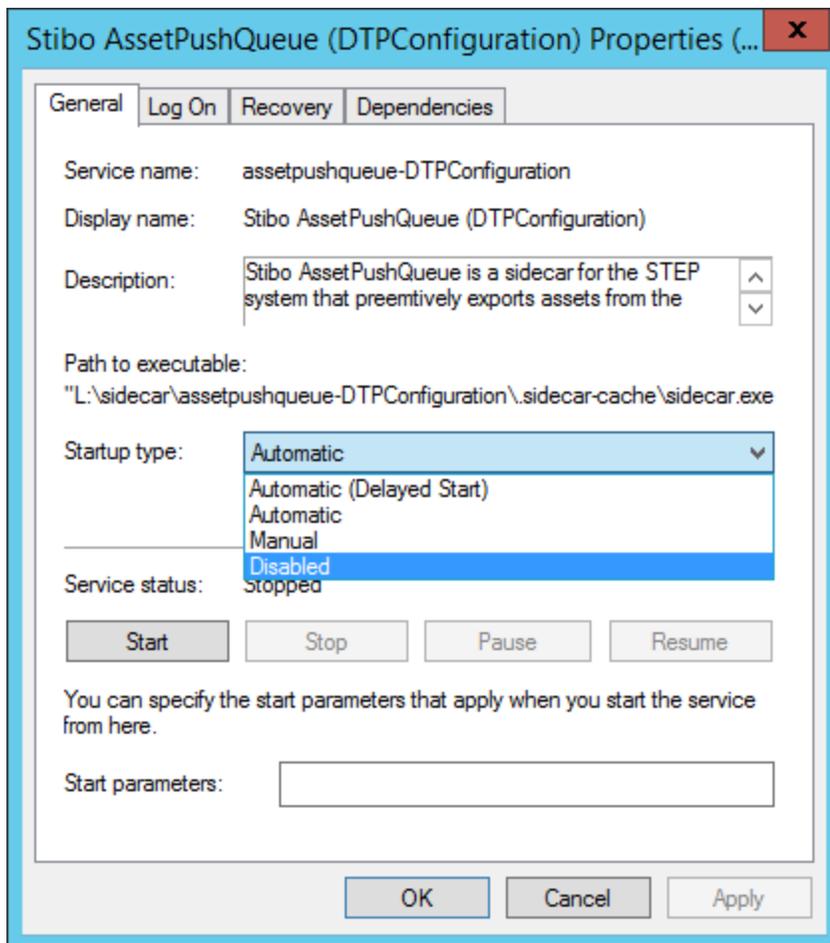
```
crontab -e
```

Once ran, add the following to opened file:

```
@reboot /workarea/sidecar/assetpushqueue-DTPConfiguration/assetpushqueue-DTPConfiguration
```

For Windows Environments

To make sure the sidecar starts automatically on server reboot, go to the Windows Services component. In the Services window, locate the Stibo AssetPushQueue (assetpushqueue-DTPConfiguration). On the entry, right-click and select 'Properties.' In the properties, under the Startup type dropdown, select 'Automatic,' select 'Apply,' and then select 'OK.'



For Mac Environments

Enter the following command in the Asset Push Sidecar directory to set the sidecar to automatically run:

```
sudo cp /Users/stibosw  
/sidecar/com.stibo.sidecar.assetpushqueue-DTPConfiguration.plist  
/Library/LaunchDaemons/com.stibo.sidecar.assetpushqueue-  
DTPConfiguration.plist  
sudo launchctl load  
/Library/LaunchDaemons/com.stibo.sidecar.assetpushqueue-  
DTPConfiguration.plist  
sudo launchctl start com.stibo.sidecar.assetpushqueue-DTPConfiguration
```

Logging

Logging is controlled via the 'log.properties' file, which is a default file created when the Sidecar is started for the first time. This file is a standard java.util.logging config file that logs into the logs directory, which is also created with the Asset Push Sidecar installation. Log files are rotated automatically so that they do not grow larger than 10 MB. Only the latest ten of these files are saved.

Every time the Payload is started, all log files from logs are moved into the 'logs/old' directory where 30 days worth of log files are saved. This method of saving is to assist in debugging problems after the fact.

The following is an example of the default 'log.properties'

```
# This is the java logging configuration used for the payload, files that  
are placed in  
  
# the logs subdirectory will be rotated automatically by sidecar so new  
log files are started  
  
# every time the payload is started.  
  
# old log files are stored in logs/old and renamed with the timestamp  
when they were moved.  
  
# This configures how much is logged to the log file, default is INFO,  
use FINEST to get more output:  
.level=INFO  
  
handlers=java.util.logging.FileHandler  
  
# Note: The ConsoleHandler doesn't make any sense for a service  
  
# This tells the logger to keep 10 files of max 1MB, so all the logs  
shouldn't be larger than 10MB with this setup:  
java.util.logging.FileHandler.formatter=java.util.logging.SimpleFormatter  
java.util.logging.FileHandler.limit=1000000  
java.util.logging.FileHandler.count=10  
  
# you probably don't need to fiddle with this:
```

```
java.util.logging.FileHandler.level=FINEST
java.util.logging.FileHandler.pattern=/Users/alaqstibomac/Desktop/sidecar
/logs/payload%g.log
```

Start, Stop, and Status

After installing the Asset Push Sidecar, to start, stop, and check the status of the Asset Push Sidecar, each action is controlled differently across operating systems.

For Linux Environments

Go to Sidecar directory and run the following command in the Terminal:

```
assetpushqueue-DTPConfiguration (start|stop|status)
```

For example:

```
assetpushqueue-DTPConfiguration status
Stibo AssetPushQueue (DTPConfiguration) is running with process id: 8872
assetpushqueue-DTPConfiguration stop
Shutting down Stibo AssetPushQueue (DTPConfiguration).... Done
assetpushqueue-DTPConfiguration start
Stibo AssetPushQueue (DTPConfiguration) has been started see log files in
/workarea/sidecar/assetpushqueue-DTPConfiguration/logs
```

For Windows Environments

To control the Asset Push Sidecar from Windows, go to the Windows Services component. In the Services window, locate the Stibo AssetPushQueue (assetpushqueue-DTPConfiguration). Right-click on the Asset Push Sidecar, and select either Start | Stop | Restart as needed.

For Mac Environments

Go to Sidecar directory and run the following command in the Terminal:

```
sudo launchctl load
/Library/LaunchDaemons/com.stibo.sidecar.assetpushqueue-
DTPConfiguration.plist
```

To get the status of the service, you can re-run the previous command:

```
sudo launchctl load
/Library/LaunchDaemons/com.stibo.sidecar.assetpushqueue-
DTPConfiguration.plist
```

The terminal will populate with a status of the Asset Push Sidecar, if it is running or not:

```
/Library/LaunchDaemons/com.stibo.sidecar.assetpushqueue-
DTPConfiguration.plist: service already loaded
```

Finally, the following command will stop the Asset Push Sidecar:

```
sudo launchctl unload  
/Library/LaunchDaemons/com.stibo.sidecar.assetpushqueue-  
DTPConfiguration.plist
```

Uninstalling an Asset Push Sidecar

To uninstall the Asset Push Sidecar, run the following command from the sidecar directory:

```
java -jar assetpushqueue-DTPConfiguration.jar --uninstall
```

or

```
java -jar assetpushqueue-DTPConfiguration.jar -u
```

The following prompts will display. Follow these instructions to uninstall the Sidecar.

```
java -jar assetpushqueue-DTPConfiguration.jar -u
```

```
Trying to uninstall the service
```

```
The service has now been uninstalled, you can now remove (directory)
```

```
Mar 04, 2019 10:19:40 AM com.stibo.sidecar.StatusReporter  
getAddressFacing
```

```
INFO: Detected public IP facing hostname-dev.stibo.com:443 = 10.232.6.35
```

Asset Push Properties

System Properties

STEP employs a variety of properties to determine some basic system settings for asset push. Many properties are best utilized in their default setting, but may need to be changed in certain situations. Except where noted, these settings can be found in the sharedconfig.properties file and affect all asset pushes in the system.

The tables below describe all system properties related to asset push, and recommendations for when to change them. Note that changing any property in the sharedconfig.properties file may require a restart of the system for the property to take effect.

AssetPush.AutoDetectedExtension.MimeTypes

Definition	This defines a list of mimetypes (separated by comma) of generated content where auto-detected extensions will be applied (if part of template). Otherwise the original extension will be used.
Default	image/*,application/postscript Using the default, autodetected extensions will only be applied to image and postscript files.
Additional Info / When to Change the Default Value	Change only if the autodetect macro is used as part of the relative path template to ensure that all necessary types of files can be detected. Note that the autodetect macro is used sparingly so this property generally does not need to be changed. Can also be used as a means of filtering which assets have their extensions detected as those not listed will be pushed with their original extensions. You can use an asterisk (*) as wildcard at the end of mimetype.

AssetPush.BatchSize

Definition	This defines Upper limit to how many events to read ahead
Default	Using the default, value would be 100. Value specified for batch size must be an integer.
Additional Info / When to Change the Default Value	Consult with Stibo Systems Technical Services before changing this.

AssetPush.Concurrency

Definition	<p>Option to run in concurrency mode. Running in concurrency mode means that more than one sidecar can get access to events in the same queue. Running in concurrency mode has the consequence that events will be marked read immediately, i.e., before processing. If processing fails, the event will no longer be available on the queue. In that case the asset must be touched to have a new event generated.</p> <p>Must be a Boolean (true or false).</p>
Default	false
Additional Info / When to Change the Default Value	<p>Typically changed only when a full download / push is being performed as it can speed up this process by allowing multiple sidecars to perform the work.</p> <p>Consult with Stibo Systems Technical Services before changing this or the Concurrency Level property (below).</p>

AssetPush.Concurrency.Level

Definition	Defines the number of concurrent sidecars that will be used when the system is running in concurrency mode (see above).
Default	N/A
Additional Info / When to Change the Default Value	Only set if Concurrency is set to 'true'. See above.

AssetPush.DTPConfiguration

Definition	The default configuration to use from DTP Clients (IDS and QXP) when workspace is Main, in order to obtain pushed assets. The property should be an ID of the configuration.
Default	raw-main
Additional Info / When to Change the Default Value	<p>Used for Print / InDesign asset pushes.</p> <p>Only relevant for new (queue-based) asset-pusher.</p>

AssetPush.DTPConfiguration.Approved

Definition	The default configuration to use from DTP Clients (IDS and QXP) when workspace is Approved, in order to obtain pushed assets. The property should be an ID of the configuration.
Default	raw-approved
Additional Info / When to Change the Default Value	Used for Print / InDesign asset pushes. Only relevant for new (queue-based) asset-pusher.

AssetPush.DefaultDTPClientAssetLocation

Definition	Allows a default asset location to be set in the server for use by all DTP clients on site (if they have Use Default Asset Location checked in their preferences). Must be a string in the appropriate form for the DTP client and applicable platform.
Default	N/A (null)
Additional Info / When to Change the Default Value	Used for Print / InDesign asset pushes.

AssetPush.IgnoreClassifications

Definition	Defines a list of classifications (separated by semicolon ';') that will be ignored when an event is fired. (** will ignore all classification events).
Default	N/A (null)
Additional Info / When to Change the Default Value	Can be set to ignore classifications for asset hierarchy folders that should not be included in asset push and/or for any non-asset classification hierarchies. It is recommended to use the 'Include Classification' setting in the configuration rather than to exclude via this setting. However, either is acceptable and at least one (if not both) should be populated.

AssetPush.LegalChars

Definition	Legal characters for file name and file structure on the local file system. Any illegal characters encountered (those not in this list) will be converted to underscores. Format=\$char\$ to indicate a range, or type individual values without using \$
Default	N/A (null)
Additional Info / When to Change the Default Value	Should not be used in conjunction with Illegal Characters (use one or the other, or neither). Use when the downstream system has character limitations and allowable characters are limited (e.g., A-Z, a-z, 0-9, hyphen and underscore, indicated as \$A-Z\$\$a-z\$\$0-9\$_ _OR abcdefghijklmnopqrstuvwxyz01234567890-_ ABCDEFGHIJKLMNOPQRSTUVWXYZ).

AssetPush.IllegalChars

Definition	Illegal characters for file name and file structure on the local file system. Any illegal characters encountered (those in this list) will be converted to underscores. Format=\$char\$ to indicate a range, or type individual values without using \$
Default	N/A (null)
Additional Info / When to Change the Default Value	Should not be used in conjunction with Legal Characters (use one or the other, or neither). Use when the file system has character limitations and the allowable characters are significant in number (e.g., standard alphanumeric plus all accented versions allowed but forward slash and asterisk must be omitted, indicated as *).

AssetPush.Instances

Definition	Space separated list of asset push instance names, minus the assetpush- prefix. If the value is 'a b c' then there are 3 asset push instances, named assetpush-a, assetpush-b and assetpush-c. Note: A remote event handler is automatically set up for each instance.
Default	N/A (null)
Additional Info / When to Change the Default Value	Must be matched by: /[a-z0-9\.-]* ([a-z0-9\.-]+)*/

AssetPush.MaxHeapSize

Definition	The amount of memory to allow the Asset Push payload to use.
Default	256m
Additional Info / When to Change the Default Value	Typically left as defaulted. Consult with Stibo Systems Technical Services prior to changing.

AssetPush.PathAddOn

Definition	An intermediate part of the path to inject if attempting to find the asset via the old asset-push system.
Default	N/A (null)
Additional Info / When to Change the Default Value	Inserted between the prePath, and before the (off-cut) relativePath. e.g., if the old pusher stored an asset in /AssetPush/Images/Main/Global/asset.gif, where /AssetPush/Images is the prePath, and the new stored the asset in /AssetPushQueue/Images/ss/et/asset.gif, then setting the AddOn to "../../AssetPush/Images would result in the path (when searching for old-pushed assets) /AssetPushQueue/Images/../../AssetPush/Images/Main/Global/asset.gif, which is hopefully equivalent to the wanted location.

AssetPush.PathCutoff

Definition	The amount of levels (of directories) to cut off the full path, if mounting the client-drives partly into the assetpush-file-system. Defaults to zero.
Default	Zero
Additional Info / When to Change the Default Value	Only relevant for new (queue-based) asset-pusher.

AssetPush.RedownloadAllMethod

Definition	Defines how to find all assetURLs when no classification root has been specified.
Default	Query
Additional Info / When to Change the Default Value	Possible options: 'Query' and 'Traverse.' Notice, when Query is chosen, AssetPush.RedownloadAssetURLsBatchSize will be ignored.

AssetPush.RedownloadAssetURLsBatchSize=10000

Definition	Defines the number of assetURLs to fetch in each batch when doing redownload.
Default	10000
Additional Info / When to Change the Default Value	Value must be an integer. Typically left as default. Consult with Stibo Systems Technical Services prior to changing.

AssetPush.RelativePathTemplate.Sample1

Definition	A pre-defined relative path template. Will be used in the AssetPushConfiguration editor in the Relative Path Template combobox.
Default	\$configID\$/contentdimensionpointsID\$/IDpath\$/assetID\$.autodetected-extension\$
Additional Info / When to Change the Default Value	Use to provide valid and useful macro templates for asset push administrators.

AssetPush.RelativePathTemplate.Sample2

Definition	A pre-defined relative path template. Will be used in the AssetPushConfiguration editor in the Relative Path Template combobox.
Default	\$configID\$/IDpath\$/assetID\$_

	\$contentdimensionpointsID\$. \$autodetected-extension\$
Additional Info / When to Change the Default Value	Use to provide valid and useful macro templates for asset push administrators.

AssetPush.RelativePathTemplate.Sample3

Definition	A pre-defined relative path template. Will be used in the AssetPushConfiguration editor in the Relative Path Template combobox.
Default	\$conversion\$/\$workspaceID\$/\$IDpath\$/\$assetID\$_ \$contentdimensionpointsID\$. \$autodetected-extension\$
Additional Info / When to Change the Default Value	Use to provide valid and useful macro templates for asset push administrators.

AssetPush.RelativePathTemplate.Sample4

Definition	A pre-defined relative path template. Will be used in the AssetPushConfiguration editor in the Relative Path Template combobox.
Default	N/A (null)
Additional Info / When to Change the Default Value	Use to provide valid and useful macro templates for asset push administrators.

AssetPush.RelativePathTemplate.Sample5

Definition	A pre-defined relative path template. Will be used in the AssetPushConfiguration editor in the Relative Path Template combobox.
Default	N/A (null)
Additional Info / When to Change the Default Value	Use to provide valid and useful macro templates for asset push administrators.

AssetPush.UseSystem

Definition	Entry defining which AssetPush system to use. Legal values are: <ul style="list-style-type: none"> • new - The new, event-queue-based one. • old - The old one (pre STEP 5.1 and/or December 2009). • both - Attempt the new one, and revert to the former if nothing found.
Default	new
Additional Info / When to Change the Default Value	Should always be populated with 'new' unless on a system with a STEP installation prior to 5.1 or being upgraded from a pre-5.1 system (in which case 'both' may be appropriate).

Assetpush.Email.Notification.Minutes

Definition	Time between email notifications for asset push. Must be an integer. Set in minutes.
Default	60
Additional Info / When to Change the Default Value	Update as needed

Event Queue Properties

When a sidecar is installed for an asset push, an assetpush.properties file is created and populated with the location for the asset push and the credentials of the user performing the asset push. This file defines some key information for the specific event queue with which the asset push is associated. For more information, see the **Asset Push Sidecar** topic in this documentation.

Note that this file only affects individual event queues, whereas system properties apply to all asset pushes in the system. Additionally, asset properties always need to be defined, whereas system properties can often be left with the default values.

The assetpush.properties file contains the following properties:

Name	Definition
UserName	Username for file system login.
Password	Password for file system login.
ImageFolder	Specifies the first part of the path and/or parent directory into which all pushed assets will be placed. Relative Path Template takes effect after this, meaning that all asset push configurations under a single event queue will share a parent folder on the local file system, but each configuration is expected to have a separate directory structure under the common parent.
Delay	Rate in seconds for sidecar to ping the file system to ensure connection. Always set to 30 seconds and should not be changed without consultation with Stibo Systems Technical Services.

Creating and Maintaining Asset Push Event Queues

Each asset push runs off of an event queue, which defines the local file system the asset is sent to. An event queue can have any number of asset push configurations running from it, each providing their own specific parameters for the asset push, including any required conversions. While the event queue may determine the destination system, assets can be placed in different hierarchies on that system (as defined by the individual configuration of each asset push).

Because multiple asset push configurations can be created for each event queue, multiple queues are only needed if there is a requirement to support different target file systems. If all assets are sent to the same file system, only a single event queue should be created.

Note: The chosen file systems must be directly accessible to STEP. Typically this means pushing to some intermediate location, such as the application server, where downstream systems can access the files without putting any strain on the STEP system.

For more information on setting up asset push configurations, see the **Creating Asset Push Configurations** section of the **Digital Assets** documentation.

The below section describes how to set up and maintain an asset push event queue in STEP Workbench. Additional global configuration options are available via the system properties. For more information on configuring event queue properties, see the **Asset Push Properties** section of the **Digital Assets** documentation.

1. In System Setup, right-click **Event Queues** and then select **New AssetPush Event Queue**. The **Create Asset Push Queue** dialog appears.
2. Enter an **ID** and a **Name** for the Asset Push Event Queue, and then click **Create**. A new Asset Push Event Queue node is created in **System Setup**, and the **Asset Push Queue Editor** tab opens.

Name	Value
ID	AssetPush1
Name	Asset Push 1 Queue
Queue Status	Read Events
Days to retain events	0
Unread events (approxim...)	Click to estimate ...
Asset Push Sidecar	Connected from 10.64.205.79:/opt/stibo/sidecarAssetPush1
Consumer Read	Enabled

3. Click the **Queue Status** field, and select either **Discard Events** or **Read Events**. The default status is Discard Events.
 - **Discard Events:** Any events that occur while the specified classification folders are being monitored are not processed. **Days to retain events** setting will be ignored.

- **Read Events:** Any events that occur while the specified classification folders are being monitored are processed.
4. Double-click the **Days to retain events** field, and specify for how many days events should be saved. The default setting is 0, however if the user wants to reprocess an event that has already been processed, they have to specify the number of days to retain events. Events are typically reprocessed if delivered files are lost and need to be redelivered. This may be set as any integer, though it is recommended to set it between one and ten.

For more information about rewinding events, see the **Event-Based OIEP Forward, Rewind, Purge, and Republish** section of the **Additional Information for Event-Based OIEPs** documentation.

5. In **Unread Events**, press **Click to estimate** to view approximately how many unread events are currently in the asset push event queue.
6. The **Asset Push Sidecar** displays the IP address of the sidecar. The address comes from the client that the Java sidecar application is installed on. If no sidecar is detected, the field displays **No activity yet**. A sidecar is an integral part of the asset push and is responsible for carrying out the tasks sent by the event queue. The sidecar communicates with both STEP and the local file system and provides the link between the two. Each asset push event queue requires its own sidecar.

Note: For more information on installing an Asset Push Sidecar, see the **Asset Push Sidecar** topic in this topic. If any problems arise, contact your Stibo Systems account manager and/or submit a help desk ticket to complete this step.

7. In the **Consumer Read** field, select either **Enabled** or **Disabled**.
- **Disabled:** Processed events are held and are not delivered to their final destination. This setting can be used if a user wants to temporarily stop the items from queuing, for example, when the location that receives the deliveries is experiencing problems such as a full disk.
 - **Enabled:** Delivers processed events to their final destination.

The overall functionality of the endpoint is determined by a combination of the settings, with resulting functionality as follows:

- **Enabled + Read Events:** 'Active'; Use for active queue that should deliver assets to downstream systems.
- **Disabled + Read Events:** 'Paused'; Use to temporarily disable the feed, while not losing access to events being generated while disabled. Events will continue to be read and queued, but will be retained within STEP and no attempt will be made to pass them to the downstream system until the Consumer Read setting is changed to 'Enabled'.
- **Disabled + Discard Events:** 'Inactive'; Use when no new events should be processed (now or later) and no assets should be delivered downstream.
- **Enabled + Discard Events:** 'Transition'; Not commonly used but can be employed when one queue will take over from another, or prior to running a bulk update process that should not be sent downstream. Allows the old queue to process queued events, but not generate any new ones as new events should be set to queue on the new endpoint (or discarded if bulk update is used and events should not be sent out).

Once the asset push event queue has been set up, asset push configurations can be created. For more information on setting up asset push configurations, see the **Creating and Maintaining Asset Push Configurations** section of the **Digital Assets** documentation.

Creating and Maintaining Asset Push Configurations

Asset push configurations provide a set of parameters that determine which format to convert assets to, which workspace to extract assets from, which asset folder structure in STEP to monitor for changes, which file formats to convert (e.g., convert TIF, EPS, and JPG images in STEP but not BMP, PNG, or GIFs), and where to place the images on the local file system. Though they are primarily used for converting assets to different formats, some configurations will not have any conversion specified as the asset merely needs to be pushed as-is to the file system.

Any number of asset push configurations can exist within an asset push event queue, but only one is required. A separate configuration must be created for each conversion format desired. Typically, multiple configurations running off of the same event queue will not share a common conversion format unless a push is needed from both the Main and Approved workspaces, the same assets need to be placed in multiple locations on the local file system for accessibility reasons, or assets from different STEP classifications need to be separated on the file system for organizational purposes.

Prerequisites

Prior to creating any asset push configuration, an event queue must first have been configured. For more information on asset push event queues, see the **Creating and Maintaining Asset Push Event Queues** section of the **Asset Push** documentation.

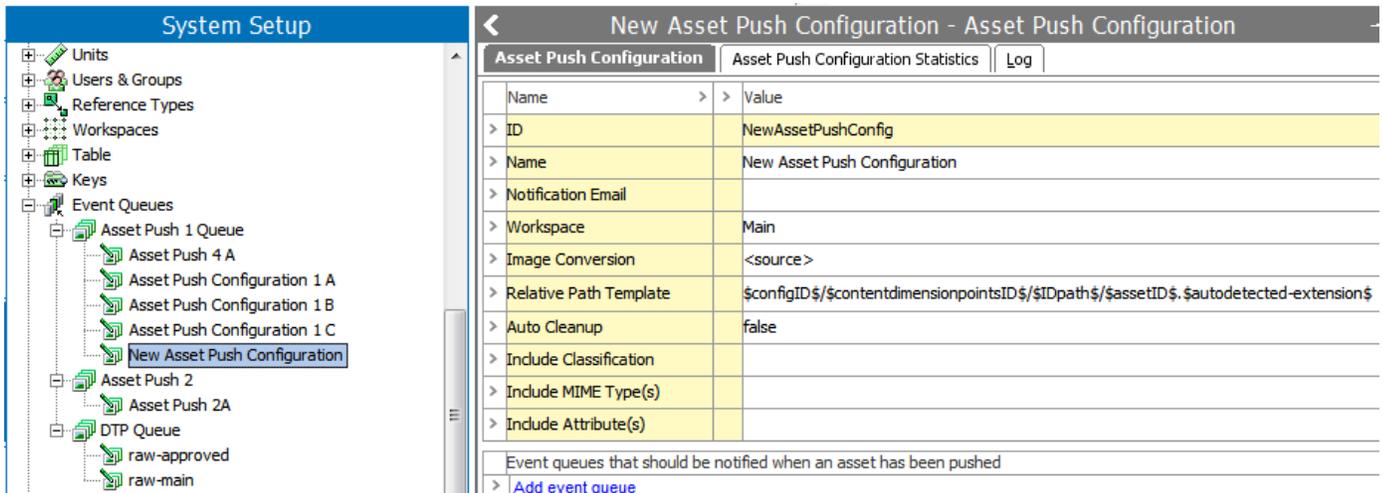
Additionally, if image conversion is required as part of the asset push, the image conversion configuration must be completed prior to the asset push configuration, so that the conversion can be selected as part of the configuration. See the **Image Conversion Configuration** topic for more information.

Configuration

1. In **System Setup**, right-click an **Asset Push Event Queue** and then choose **New Asset Push Configuration**. Each Configuration consists of ten parameters.
2. Enter an **ID** and a **Name** for the asset push configuration, and then click **Create**.

Important: Do not use spaces in this ID. Also, it is strongly suggested that the ID and the Name of a Configuration be kept the same, or at very least closely the same, e.g., ID of 'HighResLondon,' Name of 'High Res London').

A new asset push configuration node is created in System Setup and the **Asset Push Configuration** tab opens.



- (Optional) Click the **Notification Email** field, and enter a valid email address. If populated, this will result in an email being sent to the specified address in the event that a queued, valid asset fails to be converted and/or extracted. Multiple addresses may be entered, with a semicolon separator between valid addresses.

For information on configuring email from STEP, see the **Email from STEP** topic in the **Resource Materials** of online help.

- Click the **Workspace** field, and select the workspace from where the assets are to be pushed. If **Approved** is selected, asset push is triggered by asset approval. For example, Web or Electronic initiatives. If **Main** is selected, assets are pushed when they are loaded, edited, and / or replaced. No approval is required to trigger the push. For example, print initiatives.

Note: Assets will not be re-pushed when approved.

- If the assets need their format, size, or image color settings converted when pushed to the target system, click **Image Conversion Configuration**, and select the relevant conversion configuration from the list. Upon creation of Asset Push Configuration, <source> is set as default value on Image Conversion. The <source> option will produce no conversions.

The list contains all of the conversions that are available in the system. Configurations that have (conversion) appended to their names are custom conversions and can be changed and/or edited. Those without (conversion) appended are standard conversions and cannot be changed and/or edited.

Asset Push Configuration		
		Asset Push Configuration Statistics Log
Name	>	Value
> ID		NewAssetPushConfig
> Name		New Asset Push Configuration
> Notification Email		
> Workspace		Main
> Image Conversion		<source>
> Relative Path Template		<source>
> Auto Cleanup		ApparelJPG-RGBConversion (conversion) GreyJPEG (conversion)
> Include Classification		JPEG Low (conversion)
> Include MIME Type(s)		JPG TWST (conversion)
> Include Attribute(s)		PNG Low (conversion)
Event queues that should be notified		DCS (AssetPush_highres)

If <Source> is selected, no conversion takes place.

See the **Image Conversion Configuration** topic for more information.

- In the **Relative Path Template** field, specify how to organize the generated file structure. Typically the folder structure is based on the asset's ID, which cannot be changed and ensures the external structure is stable and free from accidental duplication.

To specify the structure, a string of macros and/or static text must be entered into this field.

Note: That this field accepts predefined STEP “macro” tags.

See the **Relative Path Template** section of the **Asset Push** documentation for more information on the available macros.

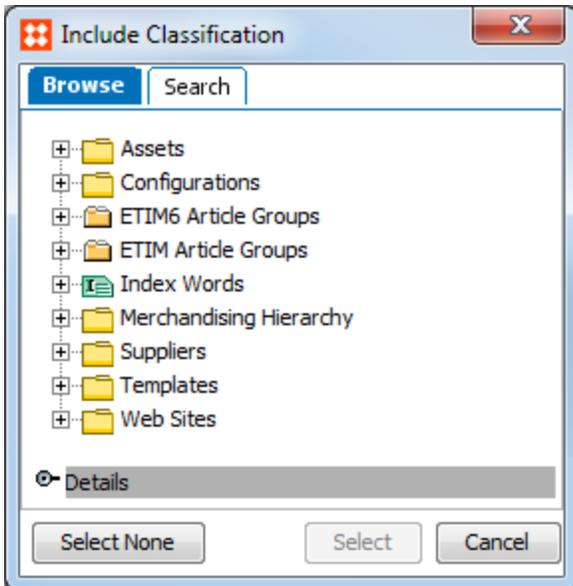
- In the **Auto Cleanup** field, the user must specify whether they want to keep or remove pushed assets from the target system. Selecting **True** removes previously pushed assets from the target system in the following situations:
 - The asset has been renamed and pushed again
 - The asset push configuration has been changed, and the asset has been pushed again
 - The asset has been deleted from STEP and the deletion has been approved

If **False** is selected, which is the default option set, STEP will not automatically cleanup the file system.

Note: It is recommended to set Auto Cleanup to 'true' so that manual intervention is not required in maintenance of the file system.

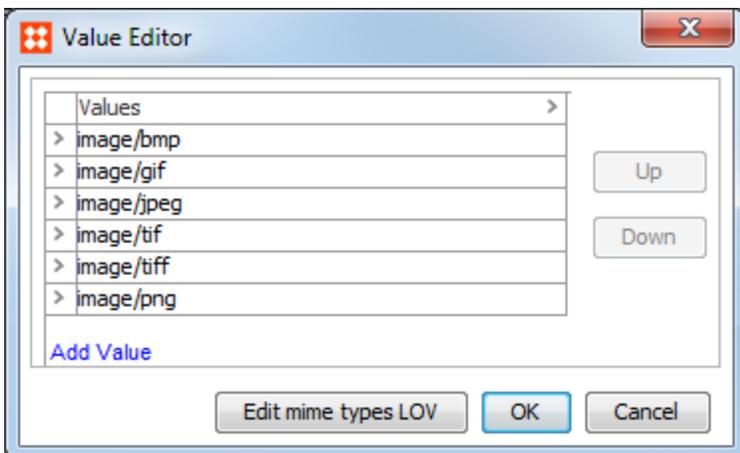
- Click **Include Classification**, and then click the ellipsis button (...). The **Include Classification** dialog appears. Select which classification node(s) asset push will monitor for changes, and then click **OK**.

Note: This field should not be left blank as that forces the system to monitor all classification folders, of which only a subset are actually valid for assets. At a minimum, the root classification folder for assets should be specified, which causes the system to monitor all child folders in the asset hierarchy.



- Double-click the **Include MIME type(s)** field to filter which assets are included in the push via their MIME type. In the **Add Value Editor**, click **Add Value** to add the relevant MIME types, and then click **OK**.

It is recommended that this field be filled, otherwise the asset push configuration will convert all MIME types (e.g., .wav, .xls, .exe), which is typically not required. Since the '/' entry functions as a wildcard, using 'image/*' selects **all** images but not other MIME types. For example, encapsulated postscript (eps) is an application type, not an image type, and would need to be added separately by adding either 'application/*' or 'application/postscript' as well.



For more information about MIME types, see the **MIME Types** section of the **System Setup \ Super User Guide** documentation.

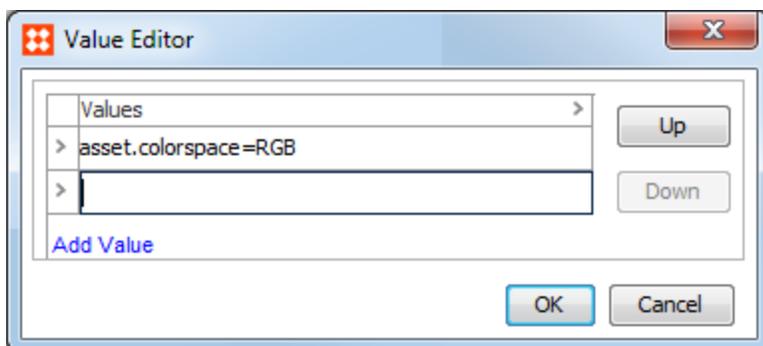
Note: The UserID that is used by the asset push side car must have the 'View metadata for asset (property value)' user action. For more information, see the **User Actions** topic in the **System Setup / Super User** documentation.

- (Optional) Double-click the **Include Attribute(s)** field to specify if the asset push configuration is restricted to assets with specific attribute values. This setting allows users to add some basic intelligence to the conversion without requiring any system extensions. Populating this field means that only assets that have the specified value in the indicated attribute will be pushed.

In the **Add Value Editor**, click **Add Value** to add the relevant attribute values, then click **OK**.

Valid inputs require the following format: [Attribute ID]=[Attribute value]. Populating the field with multiple attributes acts in an 'AND' fashion (asset must meet both conditions to be pushed).

Note: Comparative symbols such as greater than (>), less than (<), or their equal to equivalents (<=, >=) symbols will not work when entering a value, such as capturing all images that have a greater than or equal to resolution value 300dpi.

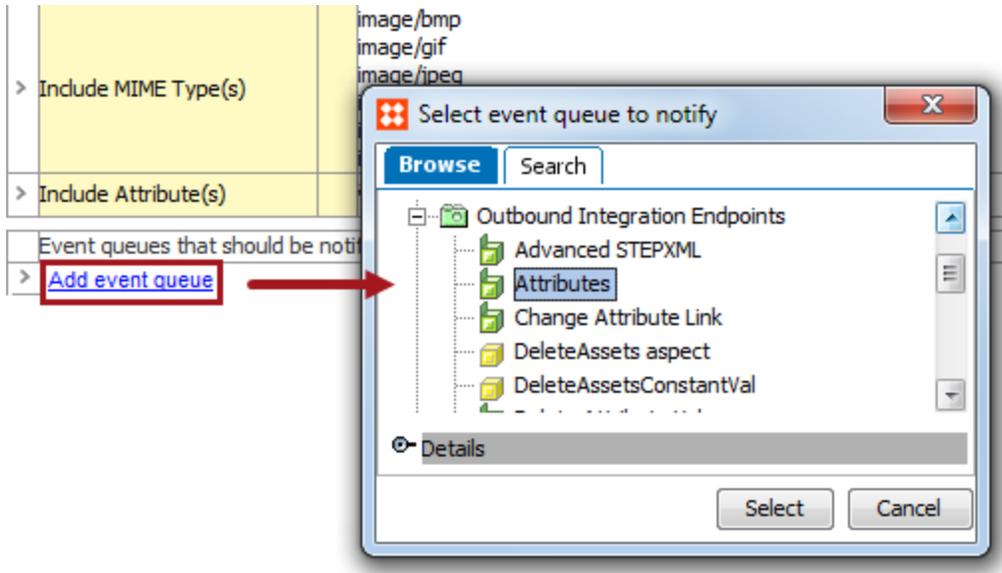


Each STEP asset has a series of metadata attributes that are automatically set upon import of the asset. Users may also create additional metadata attributes and define how they are to be set as part of the import configuration. Note that any assets with user-created metadata attributes must be pushed from the Approved workspace for the **Include Attribute(s)** setting to operate according to the value. If the asset only uses pre-existing system metadata attributes it can be pushed from either the Main or Approved workspaces.

See **System Metadata Attributes** below for a list of all metadata attributes that are automatically set upon import of the asset.

Note: When using this functionality, it is important to ensure that the selected attribute(s) are both valid on the asset types being handled by the push, and that the assets will have value(s) for the attribute(s).

- (Optional) Click **Add event queue** and select an integration endpoint from the pop-up window. Populating this setting means that the listed queues will be notified when an asset has been pushed, and an event will be created on the queue if applicable.



Note that asset push sends only the actual asset files to a downstream system. Oftentimes it is useful to also provide an XML or other file type that contains the asset metadata, including the Relative Path of the asset so that users can easily find it on the downstream system.

Outbound endpoints that send asset metadata are often triggered at approval, which is typically the same trigger used for the asset push. This means that the Relative Path for any asset is not yet populated at the time of the outbound metadata file trigger. When the asset Relative Path needs to be included in the outbound metadata file, it is then necessary to notify the outbound queue following the push (using this setting). This triggers an event on the outbound file queue so that the metadata is sent (again) and includes the Relative Path.

- When a new configuration is created, or an existing configuration is updated, it may be necessary to restart the Asset Push Sidecar.

System Metadata Attributes

The following asset metadata attributes exist as defaults on the system and are populated automatically for any asset that contains the relevant information:

- asset.class
- asset.colors
- asset.colorspace
- asset.compression
- asset.creator
- asset.depth
- asset.dsc-conformance
- asset.extension
- asset.filename
- asset.format

- asset.format-version
- asset.height
- asset.mime-type
- asset.pages
- asset.pixel-height
- asset.pixel-width
- asset.preview
- asset.preview-format
- asset.profile
- asset.samples
- asset.size
- asset.uploaded
- asset.width
- asset.xdpi
- asset.ydpi

Use Cases

- Users can set the assets to be pushed to a file system(s) with or without format conversion.
- Users should use <source> when you want to export the asset as-is. This applies to PDFs, movie clips, Word doc files, etc.
- Users can configure the MIME types, workspace, and asset folder structure in STEP to be monitored for changes on assets.
- Users can push an asset from both the main and approved workspaces with the same conversion format, and can place both configurations beneath the same asset push event queue.
- Users can restrict the asset push configuration to push assets with specific attributes.
- Users can create one configuration for each conversion needed, and have them placed beneath a single Asset push event queue.
- Users can set the asset push configuration to notify any specific event queue.
- Users can configure the notification email to be sent in the event that a queued asset fails to be converted and/or extracted.
- Users can select between standard and custom Image conversion configurations.
- Users can define how to organize the generated file structure using a string of macros in the Relative path template.
- Users can specify whether to keep or remove pushed assets from the target system.

Monitoring Asset Push

It may be necessary to monitor the activity of asset pushes, which can be especially important in the event that an asset conversion or extraction fails. Listed below are methods of monitoring the status of asset pushes within STEP Workbench. If additional monitoring is required, it is recommended to use standard system monitoring tools (e.g., designated external monitoring system). Additionally, the STEP System Administration page can be used.

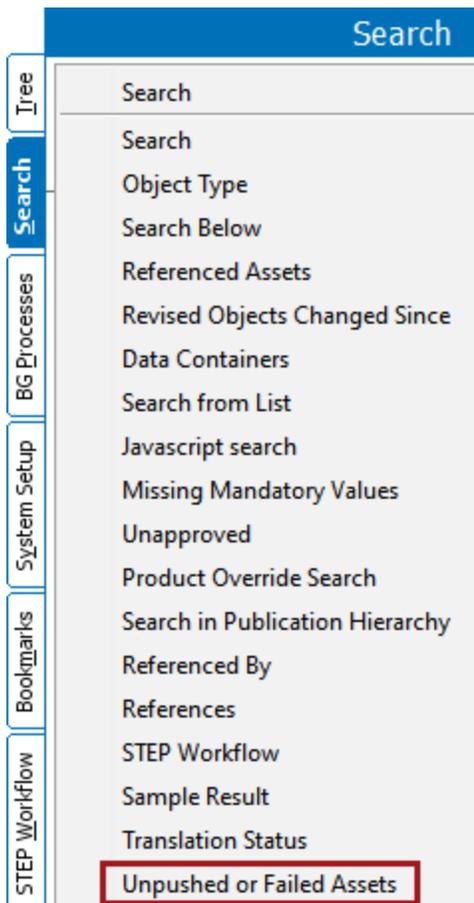
Within STEP, the monitoring functionality includes viewing push status for asset push queues, viewing push statistics, refreshing and resetting counters, finding unpushed and failed pushes, and receiving email for failed pushes.

'Unpushed or Failed Assets' search criterion

Assets that have not been pushed, or have failed to push, can be found by using the 'Unpushed or Failed Assets' search criterion.

An asset push configuration can be set up to send an email when any assets fail attempted extraction and/or conversion. See the **Creating and Maintaining Asset Push Configurations** section of the **Asset Push** documentation for more information.

For information on configuring email from STEP, see the **Email from STEP** topic in the **Resource Materials** of online help.



See the **Search: Unpushed or Failed Assets** topic within the **Navigation and Searches** section of the **Getting Started / User Guide** documentation for more information.

Asset Push Configuration Statistics

Statistics regarding each asset push can be viewed on the **Asset Push Configuration Statistics** tab.

- 'Refresh Statistics' button can be used to refresh and get the updated information.
- 'Reset Statistics' button can be used to reset the counters and last timestamp of last reset can be found in value field of 'Time for last reset of statistics'.

Asset Push Configuration Statistics	
> Total no. of successful download requests (downl...	6
> Total no. of successful download requests (uptod...	9
> Total no. of failed download requests	0
> Avg. asset size of successful downloads (bytes)	0
> Avg. duration of successful downloads (millisec)	227
> Time for last reset of statistics	Tue Nov 17 14:54:19 EST 2015

The status of each individual asset relative to all asset push configurations can be viewed on the Status tab of the asset, under the Asset Push Status flipper.

Configuration	Asset Push Status	Relative Path	Workspace
> Asset Push Configura	✓ Up to date	AssetPushConfig1B/05/97/110597.jpg	Main
> Asset Push Configura	Never been handled		Main
> Asset Push Configura	Never been handled		Main
> raw-main	✓ Up to date	raw-main/05/97/110597.png	Main
> Asset Push Configura	Not included		Approved
> raw-approved	✓ Up to date	raw-approved/05/97/110597.png	Approved

The available statuses are:

- Asset not in workspace: The configuration pushes only from the approved workspace, and the selected asset has never been approved.
- Downloaded: An initial push of the asset has been carried out

- Never been handled: The asset has never been pushed with the indicated configuration. This may be because the configuration is not applicable for the selected asset or because the configuration has not had an initial push carried out.
- Up to date: The asset has been modified since initial push, and the updated image has been pushed.

Monitoring and Handling Asset Push Errors

STEP will monitor failed asset pushes. Two reasons for these failures are:

- Improper asset file in the Asset hierarchy
- File system on Application server is out of space

Higher level of monitoring data can be attained by polling a STEP 'Sensor' for the Asset Push Queue. To poll this sensor, you must use the following URL:

URL: `http://<step-app-server> /admin/monitoring/Sidecar-assetpushqueue-AssetPushQueue/`

The sensor can present information in a number of formats:

- User readable overview
- Simple status response
- Nagios format
- XML

The problem can be resolved by either correcting the error in STEP, or increasing system storage space on the application server.

Once the problem has been resolved, the Asset Push may be attempted again. This may be done by forcing a new push, or by waiting for the asset push queue to automatically push assets that are changed and approved in the future.

Note: A full push may be very demanding and require a large amount of system resources.

If the Asset Push Sidecar stops working due to patching or an issue in the system, the application server must be restarted. Rebooting the server will re-enable the Asset Push Sidecar.

STEP will not monitor the following processes once STEP has delivered assets to the application server filesystem:

- Transport of files from STEP application server file system to eCommerce Server.
- Import of assets in the eCommerce application for display on the web.

Relative Path Template

Rather than using the file structure in STEP, an asset push configuration specifies how to organize the generated external file structure via a Relative Path Template (RPT). Typically the folder structure is based on the asset's ID, which cannot be changed and ensures the external structure is stable and free from accidental duplication. This means that it is not possible for the same image to occur in multiple folders in the external structure (unless multiple configurations are used).

The RPT is used in conjunction with the ImagesFolder property in the assetpush.properties file to tell the system where to place the extracted assets. Specifically, the RPT dictates a path, file name, and appropriate file name extension, with the intent that all the images pushed into the structure have a unique path and/or file name. The RPT is typically populated with a series of predefined STEP macros and also allows users to control whether the assets will be pushed to a flat file structure or a folder hierarchy structure. In this field, some predefined STEP 'macros' may be used.

Note: RPT takes effect after the path specified in the ImagesFolder property of the assetpush.properties file: [ImagesFolder value]/[Relative Path Template]

The RPT can be constructed using a series of macros for dynamic creation, as well as any static text that is required. Static text can be applied in many ways, including file extensions, folder names, or anything that designates a static folder into which assets and / or child folders should be placed. The system will automatically create all folder structures dictated by the RPT on the local file system, with each slash (/) creating a new directory level.

Important: Care should be taken to ensure that the RPT is constructed in such a way that: file paths do not exceed the length limits of the target system; only legal characters for the target system are incorporated (illegal characters will be automatically replaced by an underscore); and each asset is assigned a unique file name within the target folder.

Many of the macros are optional. The one macro that really is mandatory is the '\$assetID\$' (or '\$assetName\$') macro. Without this, all images would be converted to the exact same file name, which is hardly practical.

If assets have been declared as dimension dependent, then it is mandatory to include either the '\$contentdimensionpointsID\$' or the '\$contentdimensionpointsName\$' macro in the RPT. The system will not save your RPT entry if you exclude this.

The following is a list of relevant macros:

Macro	Notes
\$configID\$	STEP ID of the asset push configuration. Often used as a parental folder level for the RPT.
\$contentdimensionpointsID\$ /	STEP ID / Name of the dimension point of the asset. ID macro should be

Macro	Notes
\$contentdimensionpointsNAME\$	used whenever possible in place of Name. Required to use a dimension macro if any assets are dimension dependent. System will not save the RPT entry if a dimension macro is not specified and the system includes dimension dependent assets.
\$IDpath\$	<p>Tells the system to autogenerate external file folders using the ID of the asset. Use when a folder structure for assets is needed. Excluding this will result in a flat file structure being created on the local file system (all assets placed within the same folder).</p> <p>It is also possible to use \$IDpath3\$, \$IDpath4\$, or \$IDpath5\$ to specify how many characters to use to create the external file folders. For example, if an asset has an ID of 0123456789, then:</p> <ul style="list-style-type: none"> • \$IDpath\$ will generate a file folder structure of 67/89/ • \$IDpath3\$ will generate a file folder structure of 456/789/ • \$IDpath4\$ will generate a file folder structure of 2345/6789/ • \$IDpath5\$ will generate a file folder structure of 01234/56789/ <p>The use of more characters reduces the number of possible asset entries in each folder. Higher numbers recommended if large numbers of assets are being pushed as the user should aim to have fewer than 1,000 assets per folder to allow for navigability on the file structure.</p>
\$assetID\$ / \$assetNAME\$	<p>STEP ID / Name of the asset being pushed. It is required that one of these or the attribute:key macro be used to define the file name, otherwise all assets will be pushed with the same file name.</p> <p>ID must be used if any of the assets being pushed are dimension dependent (NAME cannot be used in this case). Recommended practice is to use ID (rather than NAME) whenever possible.</p> <p>Note that STEPXML only includes asset ID in the product references section so communication of product to asset relationships to downstream systems will require an additional section and/or feed to map asset Names and IDs if the NAME macro is utilized. Also note that if any asset types are declared dimension dependent (i.e., the asset's Name is dimension dependent) then the user cannot use the \$assetNAME\$ macro for file names, \$assetID\$ must be used instead.</p>
\$attribute:key\$	Extracts values from any Description attribute on an asset so that they can be used as the asset file name. When the asset is pushed, the value of the attribute specified by the key replaces the macro configuration in the file

Macro	Notes
	<p>name. Note that this macro can also be used as part of the relative path rather than as the file name, but the intended use is for file name.</p> <p>See below Configure \$attribute:key\$ Macro section for setup instructions.</p> <p>Dimension dependent Attributes are not available for use as path keys. This is checked when the attribute dimension is changed for an attribute and when a new asset push template is created.</p> <p>A change in value on the attribute bound to the path key will cause the asset to be re-pushed. If the asset push configuration is set to publish from the Main workspace, any changes made to the relevant attribute value will prompt an asset push. Likewise, if the configuration is set to publish from the Approved workspace, the asset push will trigger when the value change is reflected in the Approved workspace. Changes made to externally maintained attributes will prompt an asset push from either workspace.</p> <p>Note that if 'Auto Cleanup' is set to 'true' in the asset push configuration, the previous version of the updated asset will be deleted.</p>
\$autodetected-extension\$	<p>Detects the type of file generated by the conversion and applies the appropriate extension.</p> <p>Used only when intelligent conversion is used, whether via asset metadata or a custom conversion, as intelligent conversions may produce different types of output files. Standard conversions produce only one file type per conversion, so static text or the \$extension\$ macro should be used, and are the preferred methods for applying the file extension.</p> <p>When using this, be sure to insert a text entry of “.” before the \$autodetected-extension\$ macro so that the file name will have the usual period between the name and its extension (e.g., xxx.\$autodetected-extension\$).</p>
\$extension\$	<p>Applies the file type extension specified by the conversion. If the configuration does not include conversion, assets are passed through and assigned the same extension they had within STEP.</p> <p>When using this, be sure to insert a text entry of “.” before the \$extension\$ macro so that the file name will have the usual period between the name and its extension (e.g., xxx.\$extension\$).</p> <p>Either this macro or static text should be used to generate the extension for</p>

Macro	Notes
	all standard (non-intelligent) conversions.
\$workspaceID\$ / \$workspaceNAME\$	<p>STEP ID / NAME of the workspace which the assets are being pushed from (e.g., Main or Approved).</p> <p>ID macro should be used whenever possible in place of Name.</p> <p>Typically used only if the system has multiple configurations with at least one pushing assets from each workspace.</p>
\$conversion\$	<p>Specifies the type of image conversion in the file path.</p> <p>This macro is not frequently used, but can be useful if it is required to keep different versions of the same asset separated by conversion type.</p> <p>Example (\$conversion\$ is bolded): AssetPushConfig1/plain-thumbnail/23/45/12345.jpg</p>

Important Macros

Most frequently used macros

- \$configID\$
- \$contentdimensionpointsID\$
- \$contentdimensionpointsNAME\$
- \$IDpath\$
- \$assetID\$
- \$extension\$

Additional useful macros

- \$IDpath3\$
- \$IDpath4\$
- \$IDpath5\$
- \$assetNAME\$

Relative Path Template Example

- ID of asset push configuration=AssetPushConfig1
- ImagesFolder property in assetpush.properties file set to 'images'
- RPT in configuration set to '\$configID\$/\$IDpath\$/\$assetID\$.jpg'
 - Assumes conversion is used with resulting file type of JPG
- Two assets are pushed, with STEP IDs of '12345.gif' and '67890.png'

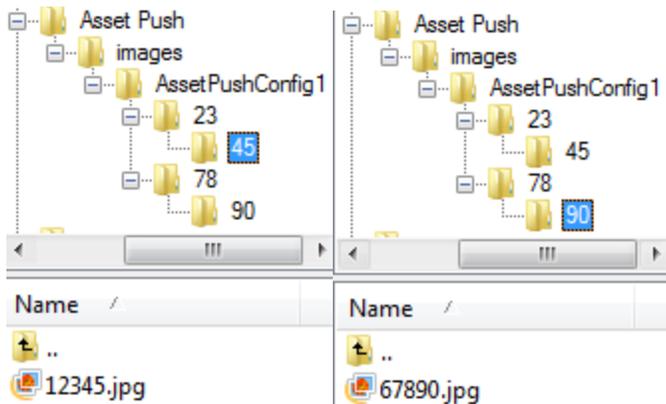
- The resulting Relative Paths in the asset status tab should read:
 - AssetPushConfig1/23/45/12345.jpg

Configuration	Asset Push Status	Relative Path	Workspace
> AssetPushConfig1	✓ Downloaded	AssetPushConfig1/23/45/12345.jpg	Main

- AssetPushConfig1/78/90/67890.jpg

Configuration	Asset Push Status	Relative Path	Workspace
> AssetPushConfig1	✓ Up to date	AssetPushConfig1/78/90/67890.jpg	Main

- Once on an external server, they resemble the below images:

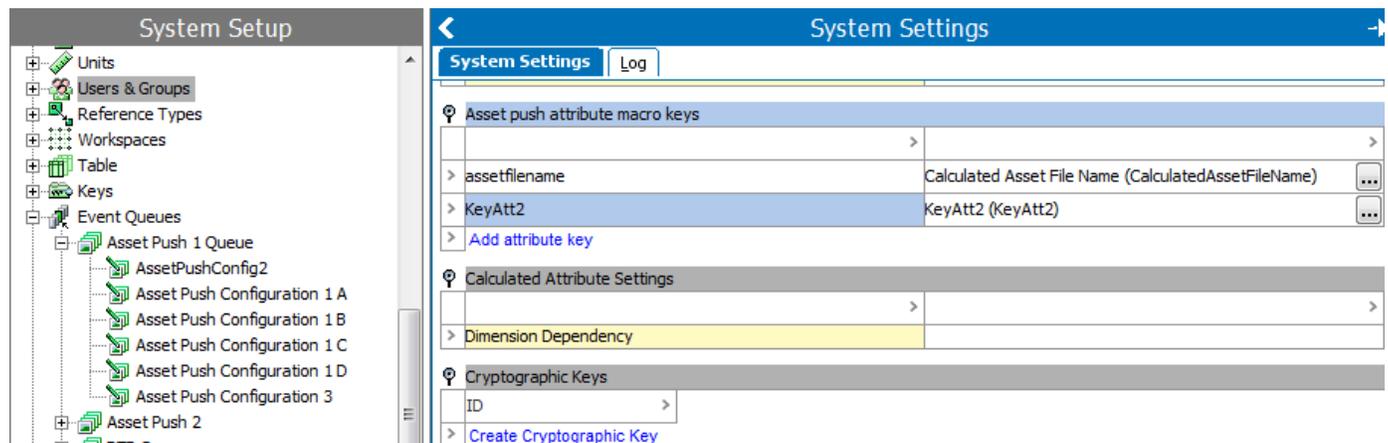


For an example using a calculated attribute and attribute macro key within a Relative Path Template, see the **Asset Push File Name Scenario** documentation.

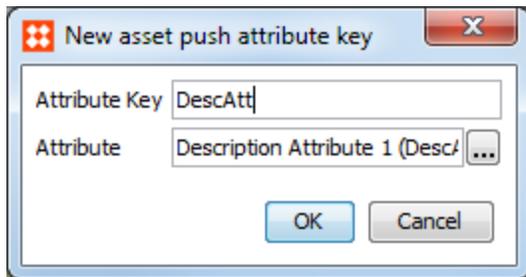
Configure \$attribute:key\$ Macro

Before the \$attribute:key\$ macro can be used the applicable attributes must be configured in **System Settings**.

- In **System Setup**, click on the **Users & Groups** node and navigate to the 'Asset push attribute macro keys' section under the **System Settings** tab.

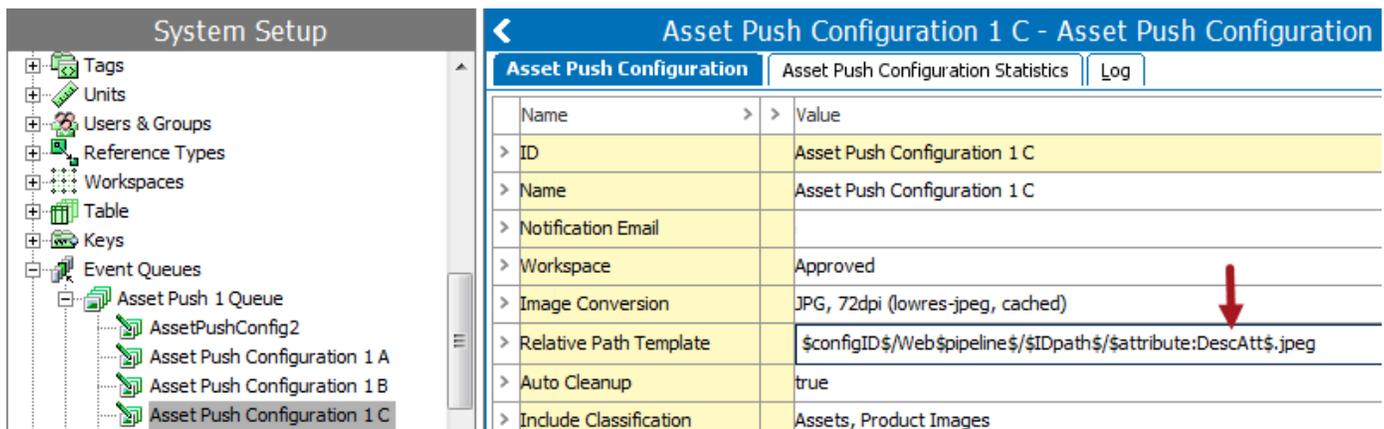


2. Click **Add attribute key**.
3. In the pop up window, enter a name for the Attribute Key. This name can differ from the selected attribute, and is used in place of 'key' in the macro. Click the ellipsis button (...) and select the desired attribute from the list.



Note: On the **System Settings** screen, the Attribute Key appears in the first column and the attribute's STEP name appears in the second column.

4. Return to the desired asset push configuration and enter the desired Attribute Key.



Additional Information

If the user does not have dimension dependent images, there is no need to use either of the \$contentdimensionpoint macros (ID or NAME) in the RTP.

Even if the names of the images have not been set to dimension dependent, use the macro \$assetID\$ in favor of \$assetName\$.

Use one of the \$IDpath macros when it is necessary to have a folder structure for the assets.

- Do not use this macro if it isn't needed. It is normal to have an \$IDpath macro for high-resolution images, but for low-resolution web images, you may not need to use a folder structure.

File name extensions — For DTP applications, where there is no image conversion at all, use the macro \$extension\$.

- Do not use the \$autodetected.extension\$ macro if it isn't needed. It should only be a very rare occurrence when you do need it.

- For web images, use the actual filename extension that the conversion is creating. If your conversion is creating jpg images, just put .jpg in the RPT.
- Do not bother to use a macro for the extension. Same if the conversion is creating a gif or png file – just type that extension directly in to the RPT.

Specify a Classification Folder to be monitored for assets. Leaving this entry blank forces the system to monitor and review all classification folders.

Also, specify the MIME types that you want the conversion to work on. Otherwise, the conversion will attempt to convert assets such .exe files, .wav files, xls files etc.

With print items, if your user does not wish to use the approved workspace for images, do not set up a configuration for it (e.g., raw-approved). However, the user needs to make sure that in the sharedconfig.properties file that the system pulls from raw-main even when in the Approved workspace.

Starting the Asset Push Process

After creating or editing an asset push configuration, an initial asset push must be manually performed. This initial push ensures that the local file system has all of the initial information (assets), and receives only changes from the event queue going forward.

If the configuration has been changed, users can force the asset to the desired asset push queue even if it is up to date.

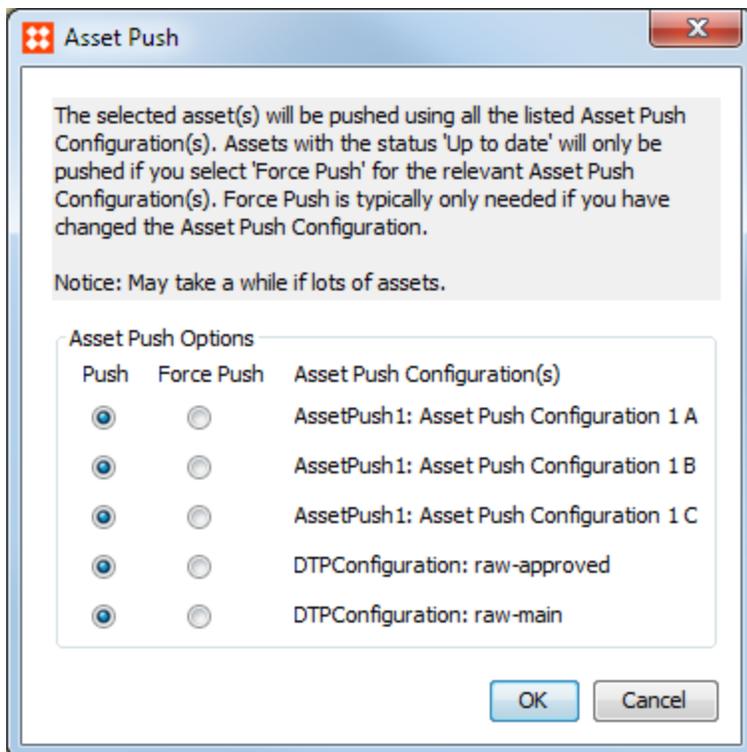
Important: As the initial asset push can be a time consuming process, consider the timing of initiating the push.

1. In the **Tree**, navigate to one of the folders that is being monitored by the asset push configuration, and then click an image.
2. Navigate to the **Status** tab, and in the **Asset Push Status** area, the status should read '**Never been handled**', which means the image has never been pushed.

Configuration	Asset Push Status	Relative Path	Workspace
> Asset Push Configura	✓ Up to date	AssetPushConfig1B/05/97/110597.jpg	Main
> Asset Push Configura	Never been handled		Main
> Asset Push Configura	Never been handled		Main
> raw-main	✓ Up to date	raw-main/05/97/110597.png	Main
> Asset Push Configura	Not included		Approved
> raw-approved	✓ Up to date	raw-approved/05/97/110597.png	Approved

3. To verify that the process works as expected, right-click the image in **Tree** and choose **Push Asset(s)**. A window appears that lists every conversion associated with this particular folder. Click **OK**.

Note: The initial push of assets can be initiated by selecting the classification(s) under which the assets reside, then right-clicking, and selecting 'Push Asset(s)'. This will open the 'Asset Push' dialog, similar to the one shown below.



Note: If the user wants to push assets whose status is set to 'Up to date,' they have to select **Force Push**.

4. The asset push process is carried out and the **Asset Push Status** changes to **Downloaded** if changes were made or **Up to date** if the downloaded / converted file is already in place and the file-timestamp corresponds to the upload-timestamp on the asset in the database.
5. If the process works as expected, select the top level folder of the folders that are being monitored, and then repeat steps 1-3 above. This starts an initial push of all assets in the top-folder and sub-folders.

Republishing Assets

A republishing of assets should be carried out anytime a change is made to an asset push configuration, and may also be done periodically for synchronization and / or refresh purposes. Prior to completing any republishing, the asset push configuration should be set to 'true' for the Auto Cleanup parameter to prevent duplication of assets. Alternatively, existing assets for the configuration may be manually removed from the target system.

To initiate republishing, follow the same steps as for an initial push, except select to 'Force Push' in the Asset Push dialog box. This will force the assets to be re-pushed, regardless of the current status.

rsync Use Case

The following topic covers a use case for using rsync to synchronize an image folder from the 'base' system to two 'remote' systems.

Assumed Requirements for this Use Case

In this use case example, a customer uses the Main workspace for Print and the Approved workspace for the web images. The high-resolution images must be located on a drive on the DTP server, but the web images must be placed on a drive that is installed on the Application Server. In addition to these requirements, users at two remote sites in London and Paris will be working with InDesign clients and need a local 'mirror' of the high-resolution images folder on a machine that is local to them.

Important: These two remote machines are not on the same corporate network as the STEP system, so the Asset Push Sidecars cannot be installed on these machines at the remote locations.

There are three web conversions that are controlled by three configurations that should take place. The web image resolutions are 80x80, 150x150, and 300x300 all at 72DPI. The web images for each configuration may all go into one 'flat' folder per configuration since there is no need for a folder structure to house these low-resolution images. There is no conversion required for the high-resolution images – the source file in STEP should be pushed out in its original format and resolution.

Solution Overview

In this use case, two Sidecars will be set up.

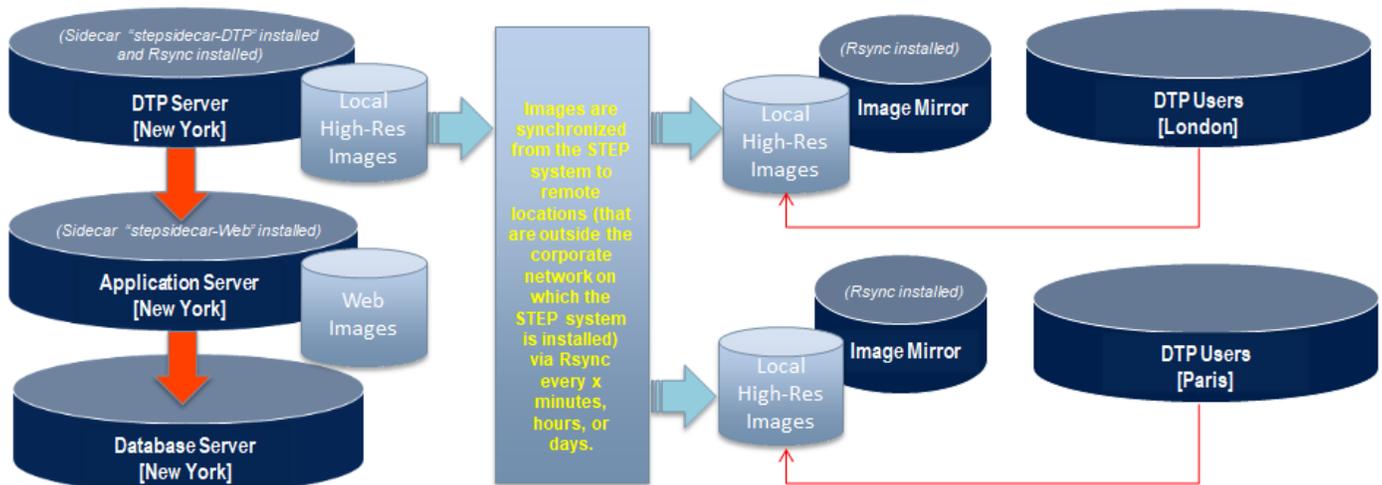


	DTP_Server_High_Res
	DTP_Server_High_Res
as	Read Events 1
sin events	0
nts (approxim...	<input type="button" value="Click to estimate ..."/>
Sidecar	Connected from 10.66.5.98:M:\stepsidecar-C
	Web_Images
	Web_Images 2

One Sidecar will handle the push of high-resolution images to a local machine. This sidecar will usually be the system where the InDesign server is installed. The other Sidecar for the web images will have three configurations with each one performing the appropriate conversion for the resolution and size. The following is an example of one of the web image conversions.

Name	Value
ID	150x150_Web
Name	150x150_Web
Notification Email	
Workspace	Approved
Image Conversion	150x150_72_jpg (conversion)
Relative Path Template	\$configID\$/contentdimensionpointsNAME\$/assetID\$.jpg
Auto Cleanup	true
Include Classification	Images

In this use case, a third-party software program will be used to synchronize the high-resolution images on the DTP server to machines residing on a different corporate network in London and Paris. This example uses rsync, but there are other software packages available for PC, Mac, and Linux.



1. The machine in London is designated to run rsync and hold a local version of the STEP high-resolution images on a local network-shared hard drive. Users in London will access these local images within this network. The drive letter or name that is used for that networked drive must be the same as what defined in the assetpush.properties file.
2. The system in Paris will be set up in the same way as the system in London.
3. The DTP Server will have a STEP Sidecar installed and will house the images that will be used by the InDesign Server for Proof Views, PDF Generation, DTP page generation, and support other Flatplanner and Autopage functions. It will also support any InDesign users that are local to the STEP Application and Database servers.
4. The Application Server will have its own STEP Sidecar installed and will house the three folders that hold the low-resolution web images. Those images are usually be placed in a shareable hard drive on the Application server.

There is only one Sidecar set up to handle the high-resolution images. Via the use of rsync, the folder structure and the images in London and Paris will be a 'mirror image' of the images pushed out via this configuration. This is so that documents that are produced at one location and that have images mounted will all have an image path that is 100% compatible with the image folder structure in the other two locations. Without this consistency, documents that are produced in one location and opened in another location will all have missing linked images.



The screenshot shows a tree view under 'Event Queues' with two sub-items: 'DTP_Server_High_Res' and 'Web_Images'. Below this is a configuration table for the selected queue.

Name	Value
ID	raw-main
Name	raw-main
Notification Email	
Workspace	Main
Image Conversion	<source>
Relative Path Template	raw-main/\$contentdimensionpointsID\$/IDpath\$/assetID\$. \$extension\$
Auto Cleanup	false
Include Classification	Image Hierarchy

The old image conversion called DCS (AssetPush_highres) can be replaced with the new internal conversion of <source>. With this selection, no conversion performed.

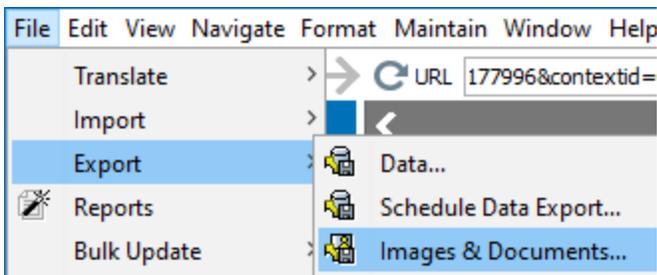
Export Images and Documents Wizard

The Export Images and Documents wizard allows you to export assets on demand. To export data, use the Export Manager as defined in the **Export Manager** topic in the **Data Exchange** documentation.

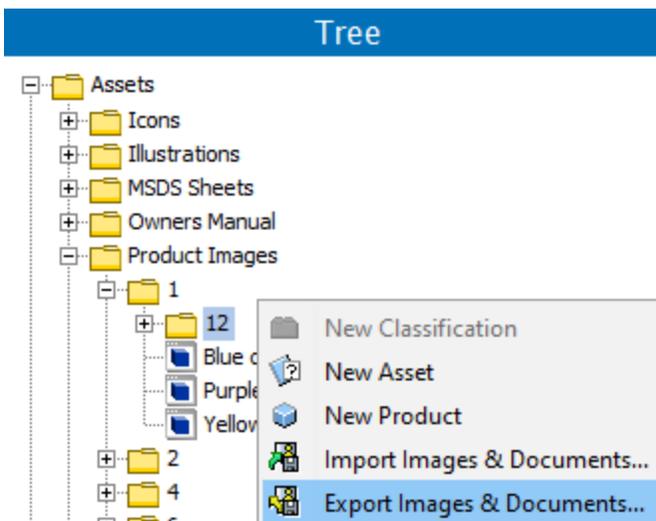
This wizard allows the user to set the export location where assets should be downloaded, specify the name of the asset, include an image conversion or pipeline for format conversion, and have an overview of the export.

Create an Images and Documents Export

1. Select the appropriate STEP context.
2. Use one of the following methods to launch the wizard:
 - On the Tree, select an asset or a classification folder that contains assets to be exported, click the File menu > Export > **Images & Documents**.

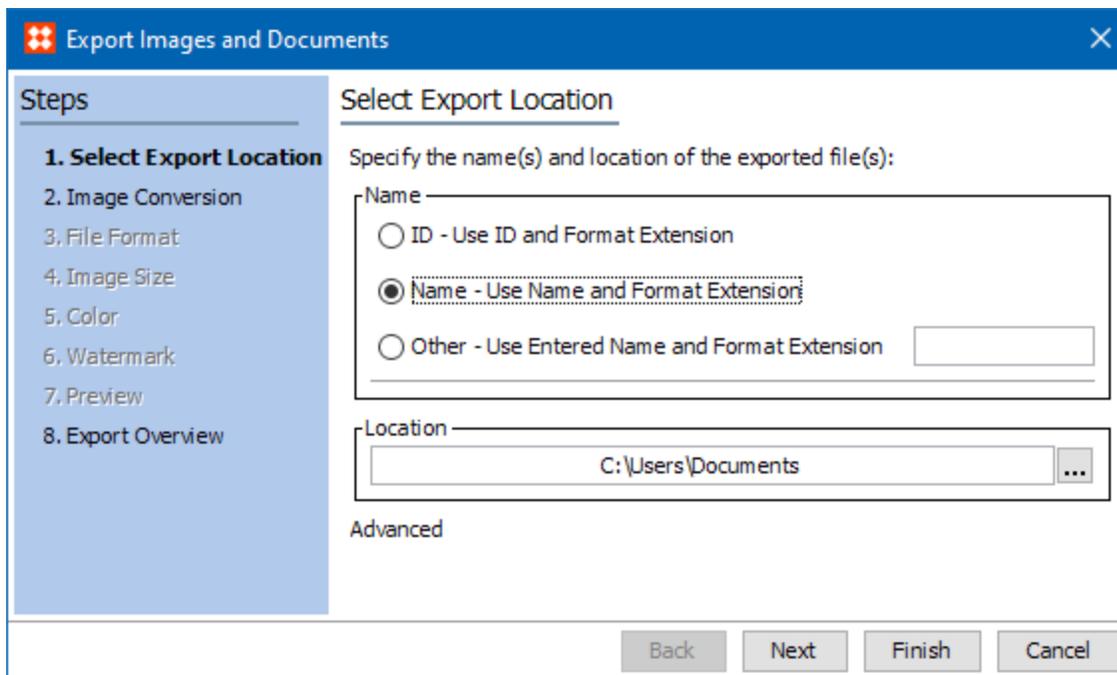


- On the Tree, select a classification folder that contains assets to be exported, or select an individual asset, right-click, and then click **Export Images and Documents**.



3. The Export Images and Documents wizard displays and can involve the following steps:

Note: The 'Export Images & Documents' option will not be enabled until a folder is selected.



- **Select Export Location** determines the location where assets will be downloaded. In the same window, the name of downloaded assets can be defined.
- **Image Conversion** allows you to select a predefined image conversion configuration, script, or pipeline, or specify a custom setup to convert the format, size, and/or color settings of the exported images.
- **File Format** allows you to specify the file format of the images exported. This option is available only if applying a custom image conversion.
- **Image Size** allows you to specify the size of the images exported. This option is available only if applying a custom image conversion.
- **Color** allows you to specify the color definition of the images exported. This option is available only if applying a custom image conversion.
- **Watermark** allows you to add a watermark to the exported images. This option is available only if applying a custom image conversion.
- **Preview** allows you to preview a specified image in your computer's default asset viewer to ensure that the image looks correct when the color definition is changed, a watermark is applied, when a predefined image conversion pipeline is used, or when a predefined script is used. This option is available only if applying a custom image conversion.
- **Export Overview** provides an overview of selected the export settings, which displays name, output name and size of the image, and allows you to start the export.

Additional Information

- Exporting only documents skips three steps and moves directly to the final wizard step.
- If selecting a Classification folder with both images and non-image assets in it, the wizard steps relate only to the images. Also, only the assets directly linked to the selected folder will be exported. If the Classification folder has no assets directly linked, nothing will be exported.
- No parameters can be set for exporting non-image assets.

- The Export Asset component does not export subfolders or contents of subfolders.
- The system does not build subfolder hierarchies on output.

Select Export Location

In the Select Export Location step, users can set the naming format for the output file(s) and specify the location and delivery method for the export. Users can normally choose one of two options; the third is only available to you if you have selected only one file for export.

- In the **Name** area, select one of the following options.
 - ID - Use ID and Format Extension:** Builds the file names of the exported files by taking the asset's ID and appending the file format's associated extension. For example, a PDF document with the ID 1234567 is exported as 1234567.pdf
 - Name - Use Name and Format Extension:** Builds the file names of the exported files by taking the asset's name and appending the file format's associated extension. For example, a PDF document with the file name Installation Manual is exported as Installation Manual.pdf.
 - Other - Use Entered Name and Format Extension:** This option available when you have selected only one asset for export. You can enter any file name and extension that you want.
- In the **Location** area, select the delivery location. You can toggle between **Advanced** and **Basic** export options, by clicking the Advanced / Basic text below the location field.
 - In **Basic** mode, click the ellipsis button (...), and then navigate to the preferred location. The user will be presented with a standard browse window to your local and network drives. Browse to and select the folder where you want your assets to be placed.
 - In **Advanced** mode, use the dropdown to choose a delivery option.

Delivery location

▼

SFTP

FTP

Server Side Delivery

- **FTP** delivers a file using file transfer protocol (FTP). You must specify the host name of the remote server, the proxy host name (optional), the user name and password used to log on to the remote server, a file name template, and whether the files should be zipped before uploaded. For additional details on these options, see the **FTP Delivery Method** topic in the **Data Exchange / Export Manager** documentation.

Delivery location

▼

Delivers exported data to a remote server via the File Transfer Protocol (FTP).

Host name

Proxy host name

User name

Password

File name template

Zip before upload No ▼

- **SFTP** delivers a file using the Secure File Transfer Protocol (SFTP). You must specify the host name of the remote server, the proxy host name (optional), the user name and password used to log on to the remote server, a file name template, and whether the files should be zipped before uploaded. For additional details on these options, see the **SFTP Delivery Method** topic in the **Data Exchange / Export Manager** documentation.

Delivery location

SFTP

Delivers exported data to a remote server via the SSH File Transfer Protocol (SFTP).

Host name

Proxy host name

User name

Password

File name template

Zip before upload

- **Server Side Delivery** exports the file into a folder located on the application server of the STEP system. The file is only delivered if the specified path has read / write access on the server. Enter the path of the application server and the name of the file.

Delivery location

Server Side Delivery

Deliver output file to location on server

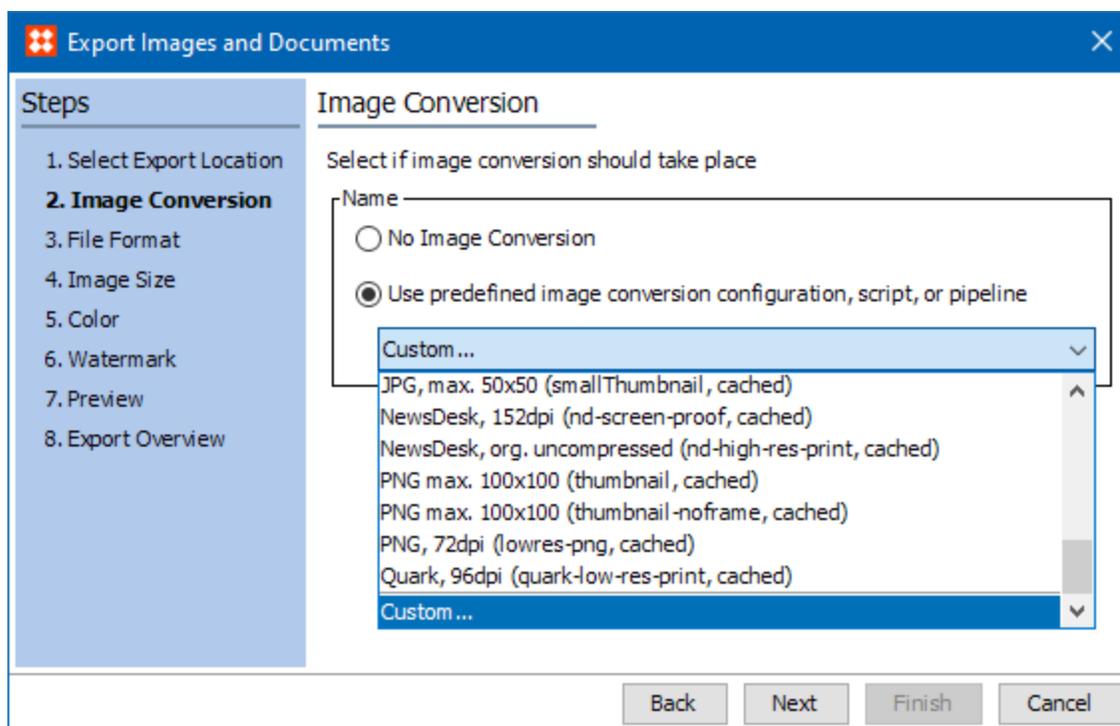
Path

Filename

Image Conversion

In the Image Conversion step, users can define whether an image has to undergo any formatting (includes format conversion, size, and color settings) on export. If formatting is needed, then users can pick from predefined configuration, script, or pipeline, or they can define new custom formatting.

Note: When setting up an asset push, any images requiring conversions must use the following method. For more information, see the **Creating and Maintaining Asset Push Configurations** topic in this documentation. For externally storing asset push items, an Asset Push Sidecar is needed. For more information, see the **Asset Push Sidecar** topic in this documentation

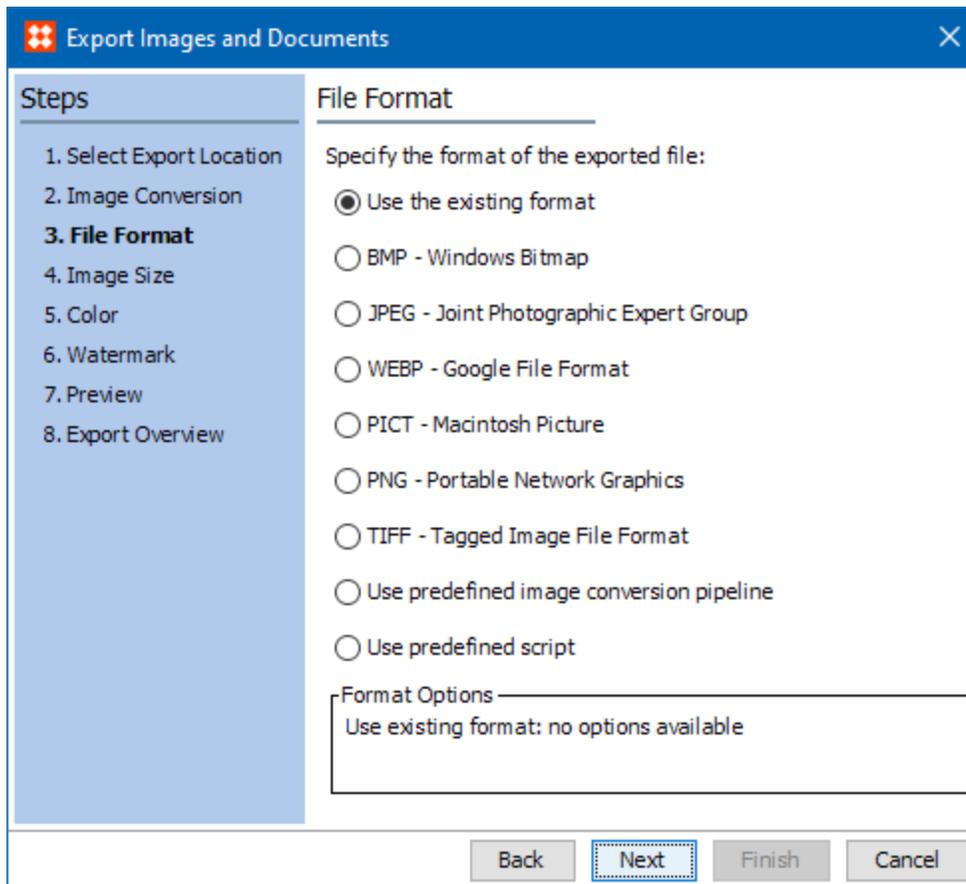


1. For Name, select **No Image Conversion** to export the images as-is. No additional information is required.
2. If an image conversion is required to change the image settings on export, select **Use predefined image conversion configuration, script or pipeline**. For more information, see the **Image Conversion Configuration** topic.
3. Use the dropdown to select one of the predefined image conversion configurations, scripts, or pipelines available on your system. Select **Custom** to specify a new image conversion using the File Format, Image Size, and Color wizard steps.
Selecting 'Custom...' which enables the **3. File Format**, **4. Image Size**, and **5. Color** steps.
4. Click **Next** to continue or click **Finish** to start the export.

File Format

The File Format step allows users to export images in a number of different file formats. Only one output format can be selected per export.

Note: The File Format step is available only when a custom image conversion is selected in the Image Conversion step.



1. Click a radio button to set the format required for export. For details on each option, see the **Image Formats** topic.
2. When all required settings are supplied, click **Next** or click **Finish** to start the export.

Image Size

In the Image Size step, users can define whether images need to undergo any resizing on export. If yes, then images can be resized proportionally by specifying dimensions, scaling, print size, and resize type.

Note: The 'Image Size' step will be available only when a **custom** image conversion configuration is selected in the **Image Conversion** step *and* if 'Use predefined image conversion pipeline' or 'Use predefined script' are **not** selected in the **File Format** step.

Export Images and Documents

Steps

1. Select Export Location
2. Image Conversion
3. File Format
- 4. Image Size**
5. Color
6. Watermark
7. Preview
8. Export Overview

Image Size

Specify the size of the exported image(s):

Do not resize the image(s)

Resize proportionally

Resize Settings

Dimensions

Width: Pixels ▾

Height:

Scale to nearest width or height

Fixed canvas size

Document Size

Width: mm ▾

Height: mm ▾

Resolution: DPI

Resize Type: Cubic ▾

Scale Image: Always ▾

Back Next Finish Cancel

1. Select **Resize proportionally** if you want to resize the images. If you do not want to resize the images, select **Do not resize the image(s)**.
2. For Resize Settings, use the **Dimensions** area. Enter the desired **width** or **height** in the selected unit of measure, which may be set in either pixels or percentages (%). Because the images are scaled proportionally, when you enter the first dimension, the other values change accordingly.

- **Scale to nearest width or height** – When checked, the affected image will scale to the nearest width or height in pixels. If both the height and width have values, the system will determine which maximum value is hit first, and the image conversion will complete accordingly.
- **Fixed canvas size** – This setting is enabled only when 'Scale to nearest width or height' checkbox is checked. This option will scale and fill with white pixels to the desired canvas size.

When unit of measure percentage (%) is selected, the 'Scale to nearest width or height' and 'Fixed canvas size' checkbox options are **disabled**.

Important: While users must set only one of the two dimension values (Width or Height) when the 'Scale to nearest width or height' option is enabled, it is good practice to also define a max value in the other field rather than leaving it empty. The reason to set both values in this way is because, without a max value set for one of these values, the image may stretch so far as to cause obvious distortion. Setting both values helps avoid this result.

3. For **Resize Settings**, use the **Document Size** area to show the print size of the image and the resolution. In **Resolution**, specify the preferred resolution if different from the current resolution. Enter the desired height or width in the selected unit of measure. Units of measure available are mm, cm, inches, pt, and pica. Because the images are scaled proportionally, when you enter the first dimension, the other values change accordingly. In the **Resolution** field, specify the preferred resolution if different from the current resolution. DPI is the available measure, which stands for Dots Per Inch.
4. For **Resize Type**, select the preferred resize type: cubic, scale, subsample, lanczos, and default. These types are similar to those offered by Adobe Photoshop.

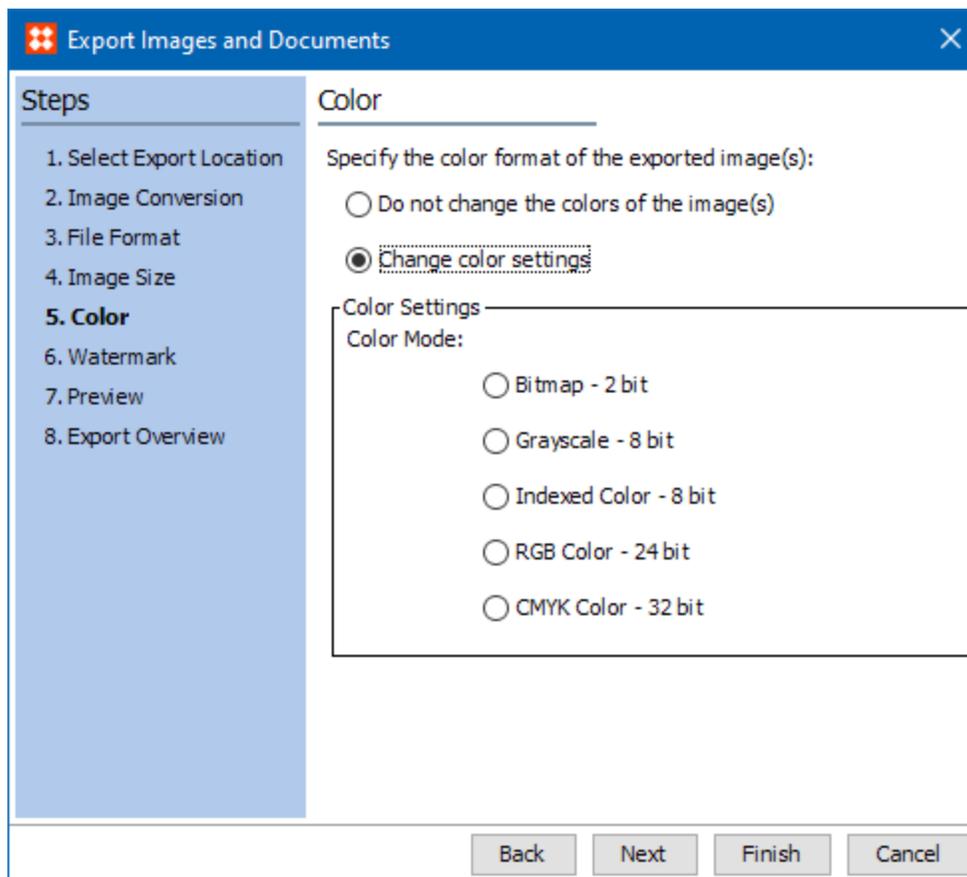
Note: It is easier to successfully reduce the resolution of an image than it is to increase it. Also, it is recommended to scale TIFF images by no more than 140%.

5. For **Scale Image**, select one of the following options:
 - **Always:** images are always scaled to the specified size.
 - **When Smaller:** images are scaled when they are smaller than the specified size.
 - **When Larger:** images are scaled when they are larger than the specified size.
6. Click **Next** to continue or click **Finish** to start the export.

Color

In the Color step, users can apply a color change to exported image(s) by selecting a **color mode**.

Note: The 'Color' step is available only when a custom image conversion configuration is selected in the **Image Conversion** step *and* if 'Use predefined image conversion pipeline' or 'Use predefined script' are **not** selected in the **File Format** step.



1. Select **Change color settings** if you want to modify the image color, otherwise, select **Do not change the colors of the image(s)**.
2. For **Color Settings**, select the preferred color mode from the available options:
 - Bitmap – 2 bit
 - Grayscale – 8 bit
 - Indexed Color – 8 bit
 - RGB Color – 24 bit
 - CMYK Color – 32 bit
3. Click **Next** to continue or click **Finish** to start the export.

Watermark

In the Watermark step, users can add watermarks to images.

Note: The 'Watermark' step in the Export Images and Documents wizard is available only when a custom image conversion configuration is selected in the **Image Conversion** step *and* if 'Use predefined image conversion pipeline' or 'Use predefined script' are **not** selected in the **File Format** step.

Businesses use watermarks in product images for reasons that include identifying their company name and preventing competing retailers from stealing images and using them to sell identical products.

The following screenshot shows an example of a watermark that has been added to an exported image.



In addition to custom image conversion configurations in the Export Images and Documents wizard, watermarks can also be applied to images in the following locations:

- Within image conversion configurations that are used for asset push. For more information, see the **Image Conversion Configuration** topic and the **Creating and Maintaining Asset Push Configurations** topic.

- STEPXML / Advanced STEPXML data exports that include **asset content**. For more information, see the **STEPXML Outbound Parameters** and **AssetContent Tag in STEPXML** topics in the **STEPXML Format** section of the **Data Exchange / Data Formats** documentation.
- Watermarks can be *previewed* on images in the Web UI by specifying the ID of a watermark-applying image conversion within the Asset Representation Properties component for either the Pop Up Representation or Representation parameter. For more information, see the **Asset Representation** topic in the **Asset Handling** section of the **Using Web UI** documentation.
- Watermarks can be applied to images on *import* using an inbound integration endpoint (IIEP) that applies an image conversion configuration with a watermark step. For more information, see the **Content Importer** topic in the **Digital Assets / Asset Importer Configuration** documentation.

Configuring Image Watermarks

The Watermark step contains numerous configuration options that allow you to fine-tune how the selected watermark will display on exported images. These settings include whether the watermark should be of a fixed size, scaled in relation to the target image, or tiled; the opacity of the watermark; whether the watermark should be rotated; and where it should appear in the image (e.g., centered).

1. **Do not add watermark** is selected by default. If you need to apply watermarks to your exported images, select **Add watermark to image(s)**.

- All watermark configuration options are available under **Watermark settings**. These options will differ based on whether Fixed, Scaled, or Tiled is selected for **Style**.
 - Watermark:** Click the ellipsis button (...) to browse to or search for the image that will be used for the watermark.

Note: Only the **PNG** image format is supported, since this is the only system-supported image format that supports transparency.

The following screenshot shows an example watermark image in which the content of the watermark (the text 'SAMPLE') is white and the background is transparent. It is strongly recommended to use watermark images with **transparent** backgrounds to ensure that settings, such as opacity, apply to the content of the watermark only and do not affect the negative space that surrounds the watermark content.



- Style:** Three modes of watermarking are supported—Fixed, Scaled, or Tiled. These options are explained below.

Watermark Styles

The fixed and scaled options allow for single watermarks to be added to images, either in a fixed size or scaled in relation to the target image. The tiled option will repeat the watermark in tiles over the underlying image.

- Fixed:** The Fixed option allows for a single watermark to be added to an image and its size adjusted (scaled) based on the size of the watermark itself, not in relation to the target image.

Watermark settings

Watermark: ...

Style: Fixed Scaled Tiled

Size: 100 %

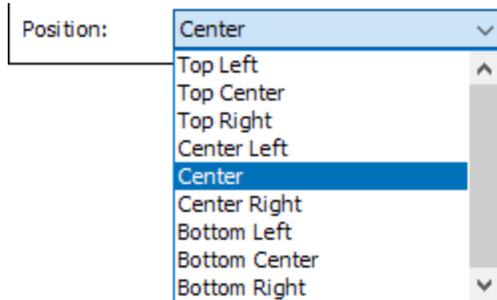
Opacity: 65 %

Angle of Rotation: 0 90 °

Clockwise Counter Clockwise

Position: ▾

- **Size:** Set the size of the watermark in percentage. 100% will place the watermark over the target image at its actual size.
- **Opacity:** Set the opacity of the watermark in percentage. 100% will make the watermark appear fully solid; lesser values will lighten the watermark accordingly.
- **Angle of Rotation:** Set the angle of the watermark on a scale of 0 degrees to 90 degrees, with the additional designation of **clockwise** or **counter clockwise**.
- **Position:** Select where the watermark should be positioned on the target image. The default position is center.



The following screenshot shows the 'SAMPLE' watermark placed in the Fixed style using the following settings: 100% size (actual size), 65% opacity, 0-degree rotation, and center positioned.



- **Scaled:** The Scaled option allows for a single watermark to be added to an image and its size adjusted (scaled) in relation to the size of the target image.

Watermark settings

Watermark:

Style: Fixed Scaled Tiled

Size: 90 %

Opacity: 45 %

Angle of Rotation: 0 90 °

Clockwise Counter Clockwise

Position:

- **Size:** Set the size of the watermark in percentage in relation to the size of the target image. 100% will scale the watermark to be the same width as the target image.
- **Opacity:** Set the opacity of the watermark in percentage. 100% will make the watermark appear fully solid; lesser values will lighten the watermark accordingly.
- **Angle of Rotation:** Set the angle of the watermark on a scale of 0 degrees to 90 degrees, with the additional designation of **clockwise** or **counter clockwise**.
- **Position:** The available positions are the same as those for the Fixed setting.

The following screenshot shows the 'SAMPLE' watermark placed in the Scaled style using the following settings: 90% (scaled to 90% of the target image size), 45% opacity, 0-degree rotation, and center positioned.



- **Tiled:** The Tiled option will tile the watermark at specified intervals over the target image.

Watermark settings

Watermark: Watermark_Large_White Text (333521) ...

Style: Fixed Scaled Tiled

Tile Width: 200 px

Opacity: 65 %

Angle of Rotation: 45 °

Clockwise Counter Clockwise

Spacing: 35 px

- **Tile Width:** Set the width of each watermark tile in pixels
- **Opacity:** Set the opacity of the tiled watermark in percentage. 100% will make the watermark appear fully solid; lesser values will lighten the watermark accordingly.
- **Angle of Rotation:** Set the angle of the tiled watermarks on a scale of 0 degrees to 90 degrees, with the additional designation of **clockwise** or **counter clockwise**.
- **Spacing:** Set the amount of space, in pixels, that should appear between each watermark tile.

The following screenshot shows the 'SAMPLE' watermark tiled using the following settings: tile width of 200 pixels, opacity of 65%, 45-degree clockwise rotation, and 35 pixels of spacing between each tile.

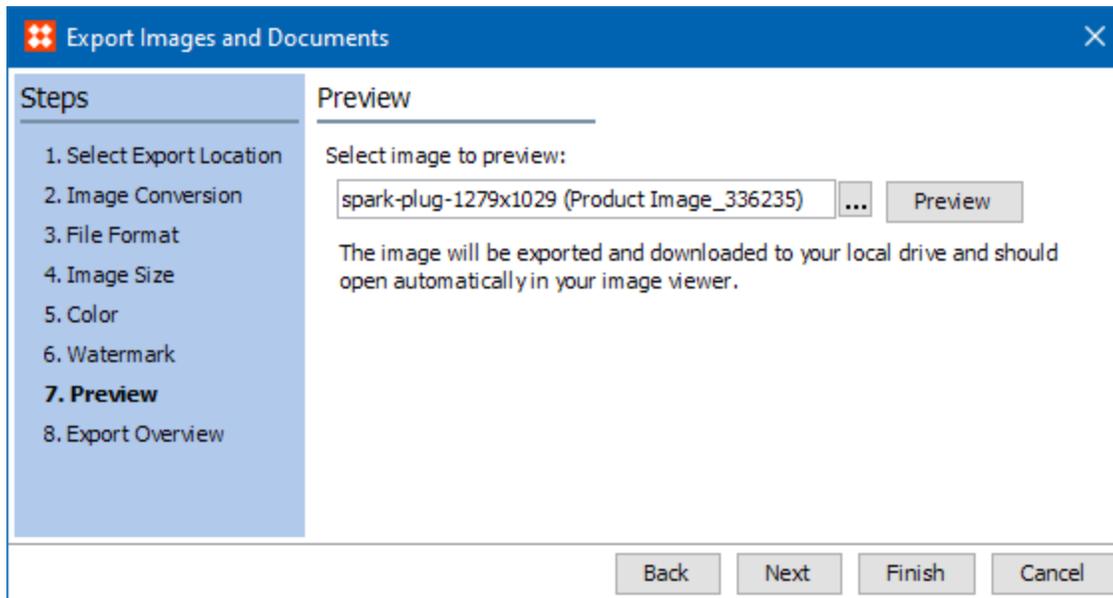


3. Click **Next** to proceed to the **Preview** step, where the watermark settings can be previewed in your computer's default asset viewer.

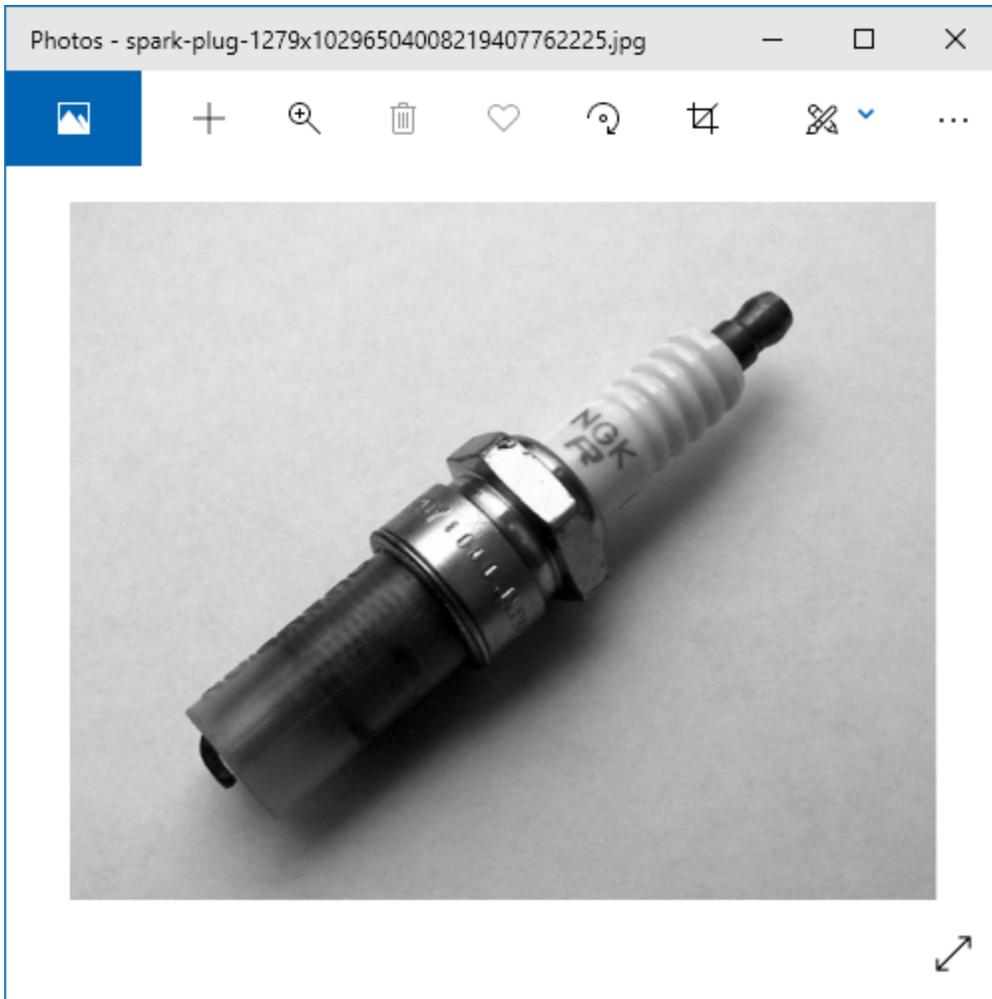
Preview

The Preview step allows you to preview a specified image in your computer's default asset viewer to ensure that the image looks correct when the color definition is changed, a watermark is applied, when a predefined image conversion pipeline is used, or when a predefined script is used.

This step is available only when a custom image conversion configuration is selected in the **Image Conversion** step.



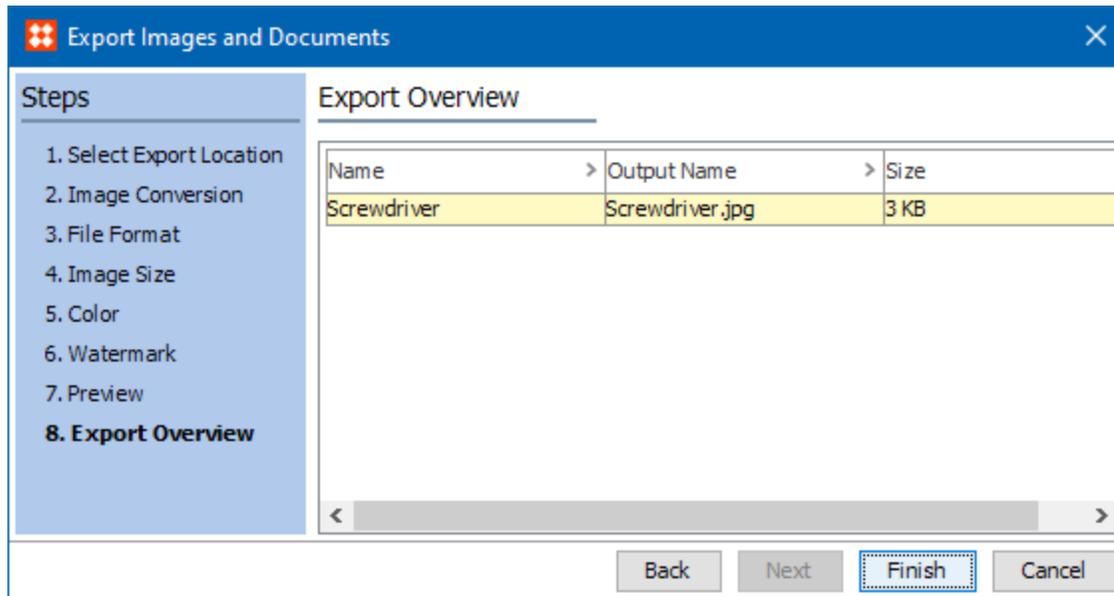
1. Click the ellipsis button (...) adjacent to the 'Select image to preview' field to browse to or search for the asset that you would like to preview.
2. Click the **Preview** button, which will display the selected asset in your computer's default image viewer. In the following screenshot, an image that had its color set to Grayscale in the **Color** step is shown previewed in a PC image viewer.



3. If the image does not appear as it should, click **Back** to return to previous steps in the wizard to readjust the image settings.
4. If the image appears as it should, click **Next**.

Export Overview

In the final step, Export Overview, users can review the image(s) being exported.



1. Review the STEP name of the asset, the file name to be used for export, and the file size.
No parameters are required on this step. It displays some of the assets that will be exported so that errors can be corrected if necessary. Click **Back** as needed to correct any problems.
2. To start the export process, click **Finish**.
3. A Progress screen displays the file being exported. When the Progress window closes, all assets have been exported. Monitor the output location identified in the Select Export Location step to ensure that all selected assets were exported.
No monitoring or Execution Report is associated with the export of assets.

Assets and Content with STEPXML

For on-demand exporting, the STEPXML and Advanced STEPXML formats in the Export Manager wizard include the option to export asset metadata, references, and digital content for both images and non-images. For automatic exports based on events, an OIEP can be configured to listen for new, changed, and deleted assets. For automatic exports based on a static set of data, a Select Objects OIEP can be configured. All options are defined below.

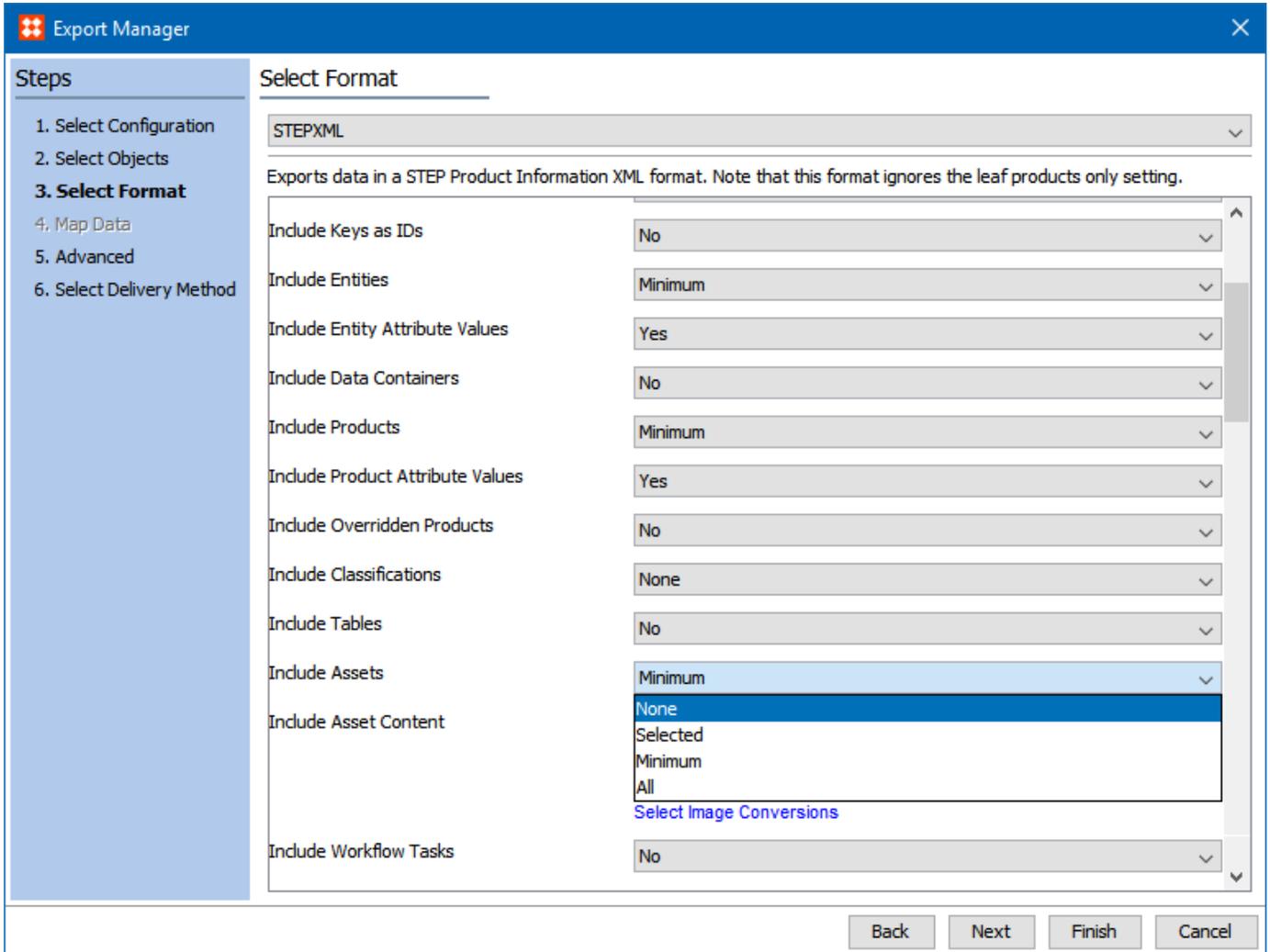
Image Conversion Configurations can be used to save image conversion settings when the same image will be used in a modified way for different use cases, for example on a website or a printed catalog. Both export manager and the event processor enable the use of Image Conversion Configurations. Additionally, automatic caching of converted images can be achieved via the Image Cache event processor. For more information, see the **Creating an Image Conversion Configuration** section of the **Digital Assets** documentation and see **Image Cache Parameters and Triggers** section of the **Creating Event Processors** documentation.

Note: These new tags are only available for export from STEP. Importing with these tags is not supported. If assets will routinely be exported with conversions, it is highly recommended to enable the new asset caching functionality (defined below in the 'New event processor and option to cache assets upon import' section) to optimize export performance.

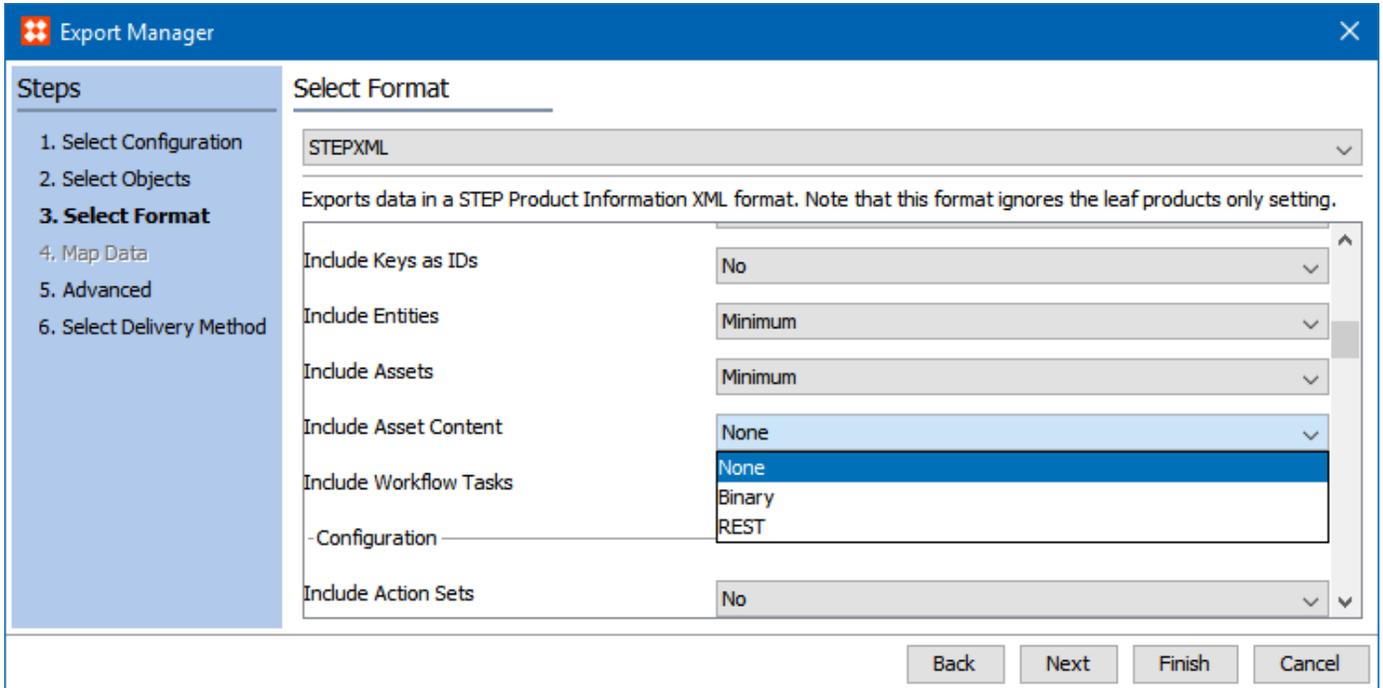
Export using Export Manager

1. Complete the first three steps of the **Export Manager** wizard. If needed, the following topics provide details:
 - Launch the Export Manager wizard as described in **Creating a Data Export**.
 - In **Select Configuration** create a new configuration.
 - In **Select Objects**, select the assets to export.
 - In **Select Format**, select STEPXML. If you will provide your own template including the tag described below, select Advanced STEPXML.
2. For the **Include Assets** parameter, choose an option. For details about these options, see the **Minimum, Referenced, and Selected in STEPXML** topic.

Important: If None is selected, neither assets nor asset content is output.



3. For the **Include Asset Content** parameter, choose **Binary** or **REST**, based on the information below:
- The binary option includes the asset content using BASE64 encoding, which can be decoded by the external system.
 - The REST option includes a relative REST resource URL. The external system must provide information necessary to complete the path to the REST resource.

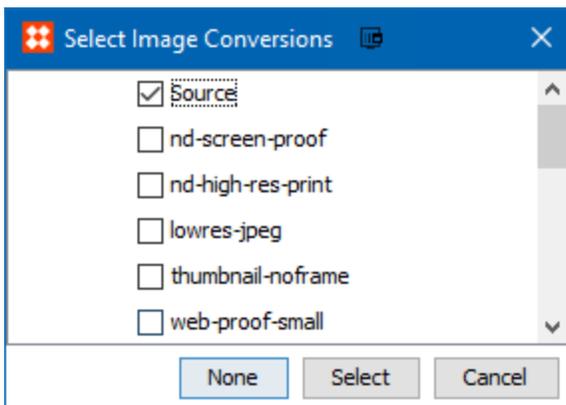


For more information on the STEPXML tag used and the data included in the output of asset content, see the **AssetContent Tag in STEPXML** section of the **STEPXML Format** documentation.

Note: If no content is available for the selected image(s), the XML tag is not exported. In this scenario, a record of the attempt to export the image is included in execution report.

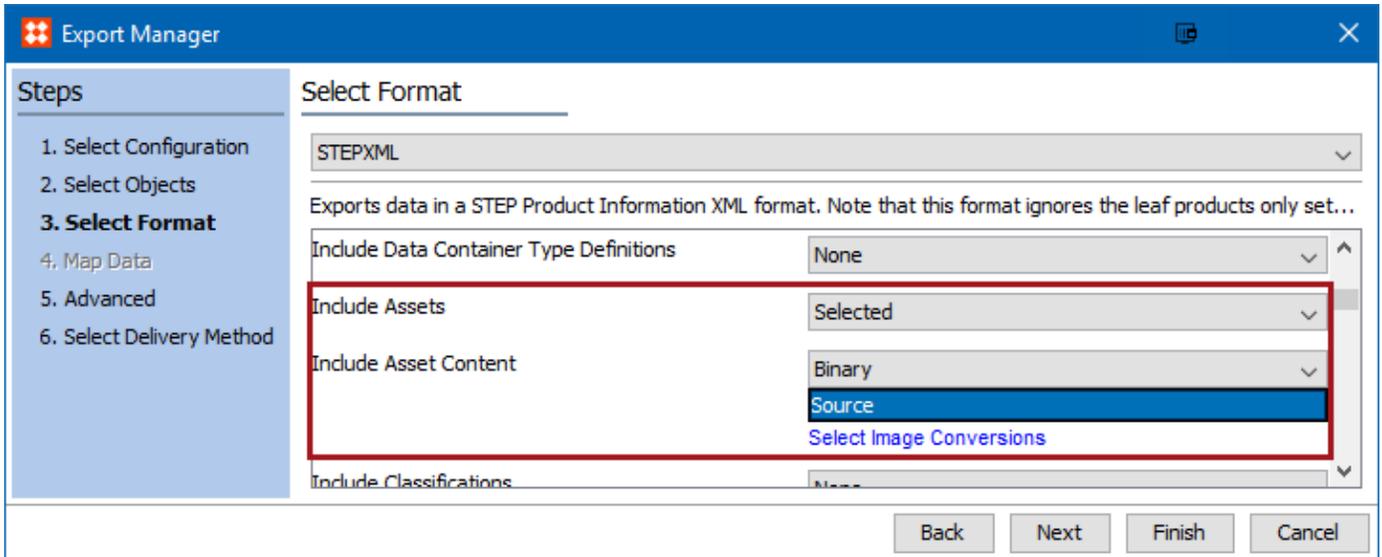
- Click the **Select Image Conversions** link and select at least one conversion from the dialog to enable the Next and Finish buttons on the wizard. The list displayed includes user created image conversion configurations in STEP, excluding legacy system Image Pipeline or Script conversions.

The **Source** option exports the original asset content and no conversion is applied.



Note: Although selecting multiple conversions is allowed, it may increase export times and file size.

- To clear all selections from the list, click the **None** button.
 - To keep your selections and return to the wizard, click the **Select** button.
 - To cancel your selections and return to the wizard, click the **Cancel** button.
5. Verify the selected Image Conversion and Asset Content settings are displayed in the wizard:



- To change the displayed Image Conversion selection, click the **Select Image Conversions** link.
- For details about the other STEPXML format parameters shown in the wizard, see the **STEPXML Outbound Parameters** documentation.
6. Complete the last two steps of the **Export Manager** wizard. If needed, the following topics provide details:
- In **Advanced**, update parameters as required.
 - In **Select Delivery Method**, select the delivery method.
7. Click the **Finish** button to complete the configuration and choose the desired export option. For details, see the **Running a Data Export** section.

Export using an Event-Based or Select Objects OIEP

Creating an OIEP that generates assets and content involves the same format setup as is defined above for Export Manager. For STEPXML format, use the Include Assets and Include Asset Content parameters. For Advanced STEPXML, use the AssetContent tag.

All steps required to create an OIEP are outlined in the **Event-Based Outbound Integration Endpoint** section or the **Select Objects Outbound Integration Endpoint** section of the **Outbound Integration Endpoints** documentation.

The following XML attributes, belong to the **AssetBinaryContent** tag:

- **ImageConversionConfigurationID** indicates which image conversion has been used to convert the exported asset content

Image Conversion Configuration

Image conversion configurations define a group of image settings to be used during export to change the format, size, and/or color of an image, to add watermarks to images, and to specify when to cache images. An image conversion configuration can also be used to ensure that the image is **not** changed upon export, meaning that the format, size, and color exported are identical to that stored in STEP.

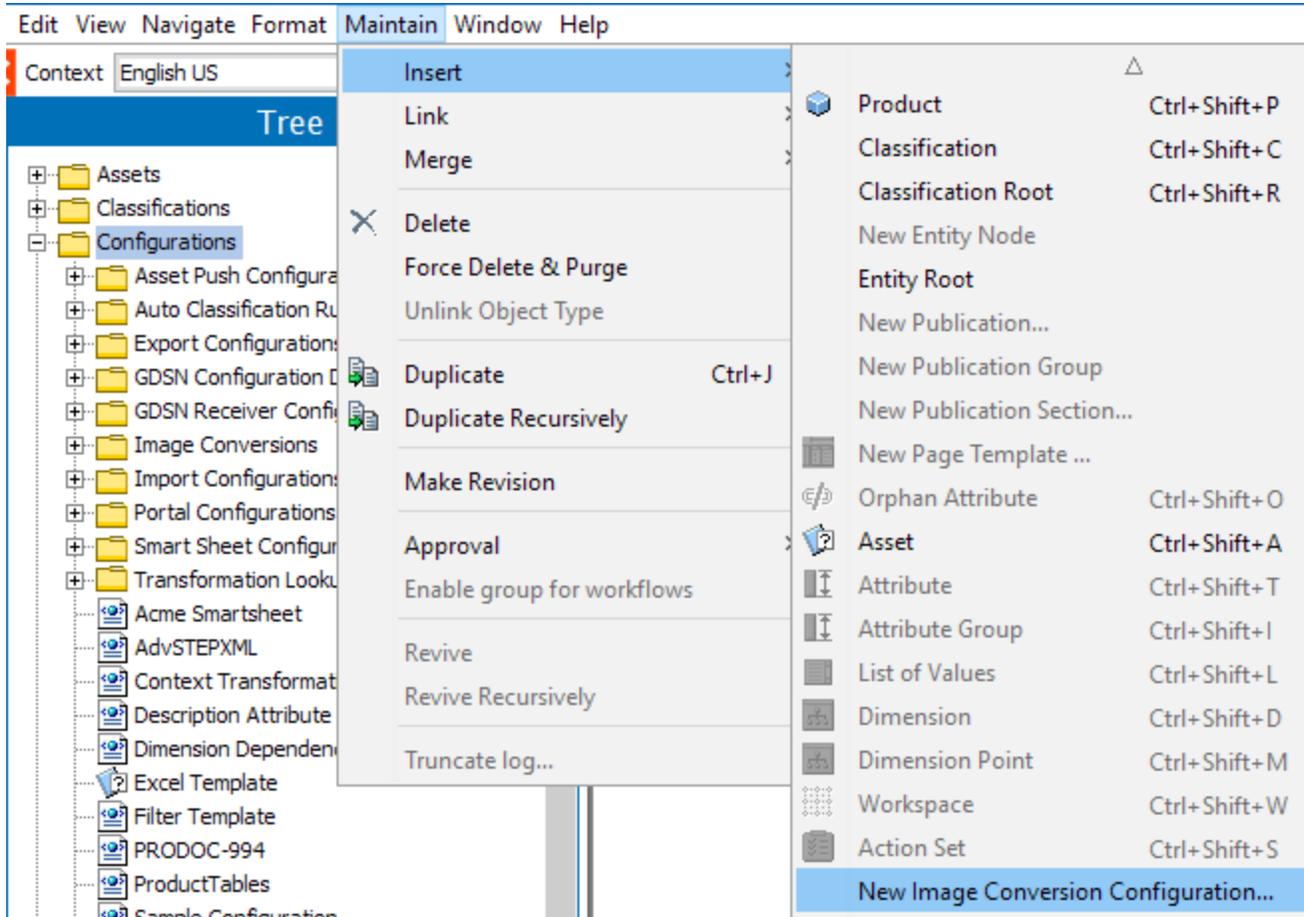
After a one-time setup, an image conversion configuration allows users to easily apply the same settings for multiple image exports. All methods of asset export allow selection of an image conversion configuration.

During export, an image can be converted to a different format, file size, and resolution by using the image conversion feature. To use the same conversion later, this conversion needs to be stored as configuration. Each configuration will have its own predefined set of parameters.

Note: When setting up an asset push, any images requiring conversions must use the following method. For more information, see the **Creating and Maintaining Asset Push Configurations** topic in this documentation. For externally storing asset push items, an Asset Push Sidecar is needed. For more information, see the **Asset Push Sidecar** topic in this documentation.

Create an Image Conversion Configuration

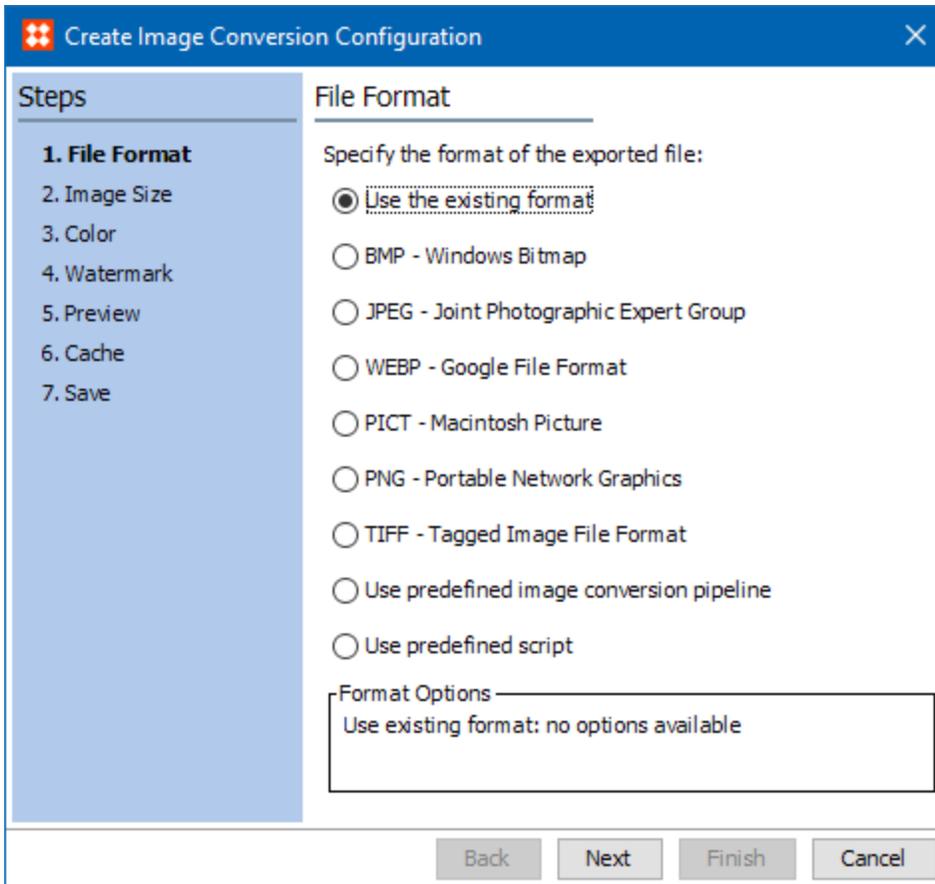
1. In the **Tree**, select a classification folder to store the new configuration.
2. Click the Maintain menu > Insert > **New Image Conversion Configuration** to display the Create Image Conversion Configuration wizard.



- For the **File Format** step, select **Use the existing format** to ensure that no changes will be made to the format upon export.

If changes are necessary, select the desired image format. For details about the individual format options, see the **Image Formats** topic in the **Export Images and Documents Wizard** documentation.

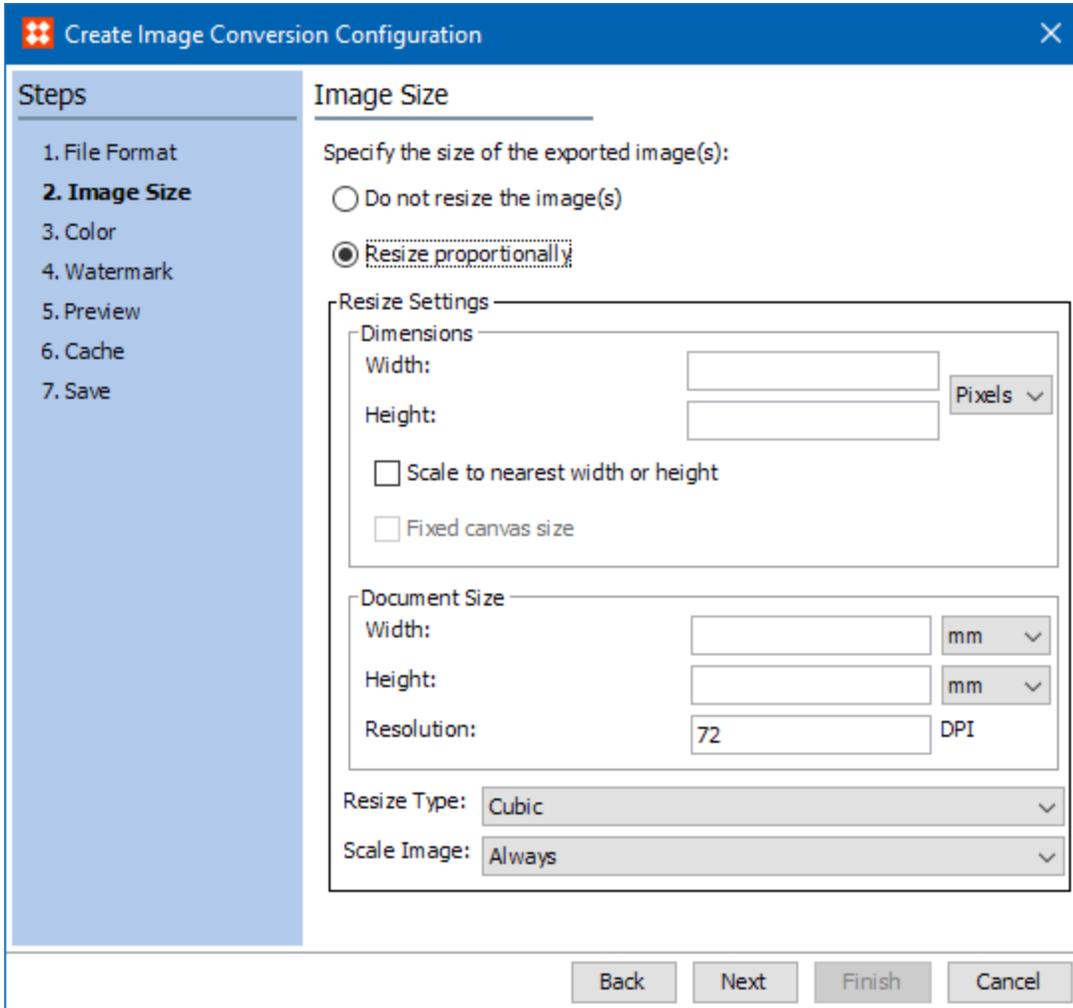
Click **Next**.



4. For the **Image Size** step, select **Do not resize the image(s)** to ensure that no changes will be made to the image size(s) upon export.

If changes are necessary, select **Resize proportionally**, then specify the dimensions, document size, resize type, and scale image settings. For details about the image size options, see the **Image Size** topic in the **Export Images and Documents Wizard** documentation.

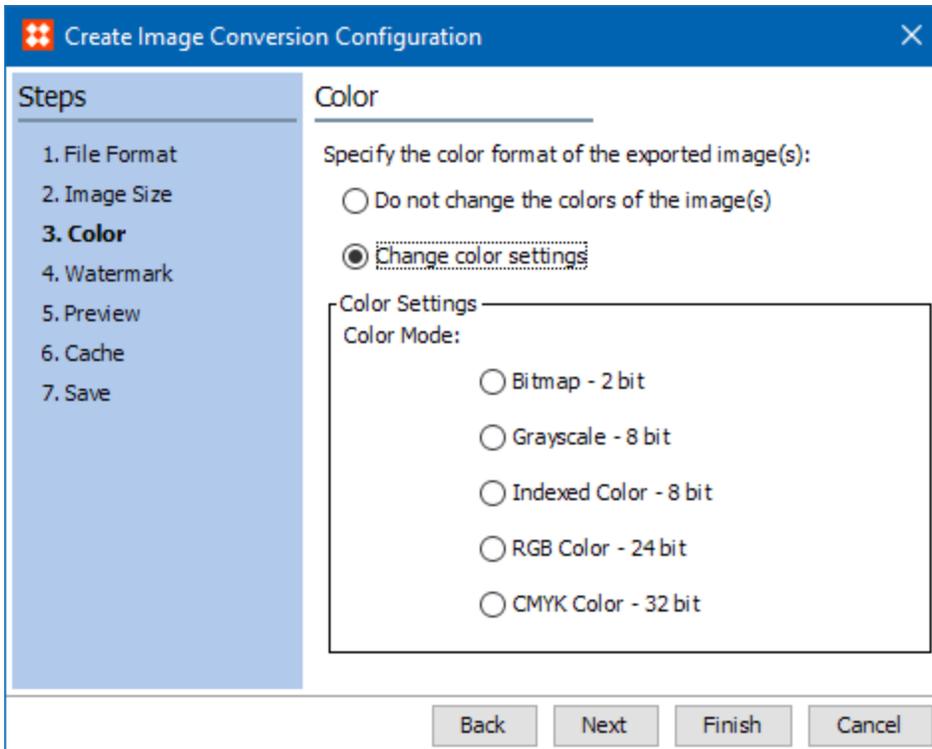
Click **Next**.



- For the **Color** step, select **Do not change the color of the image(s)** to ensure that no changes will be made to the color of the images upon export.

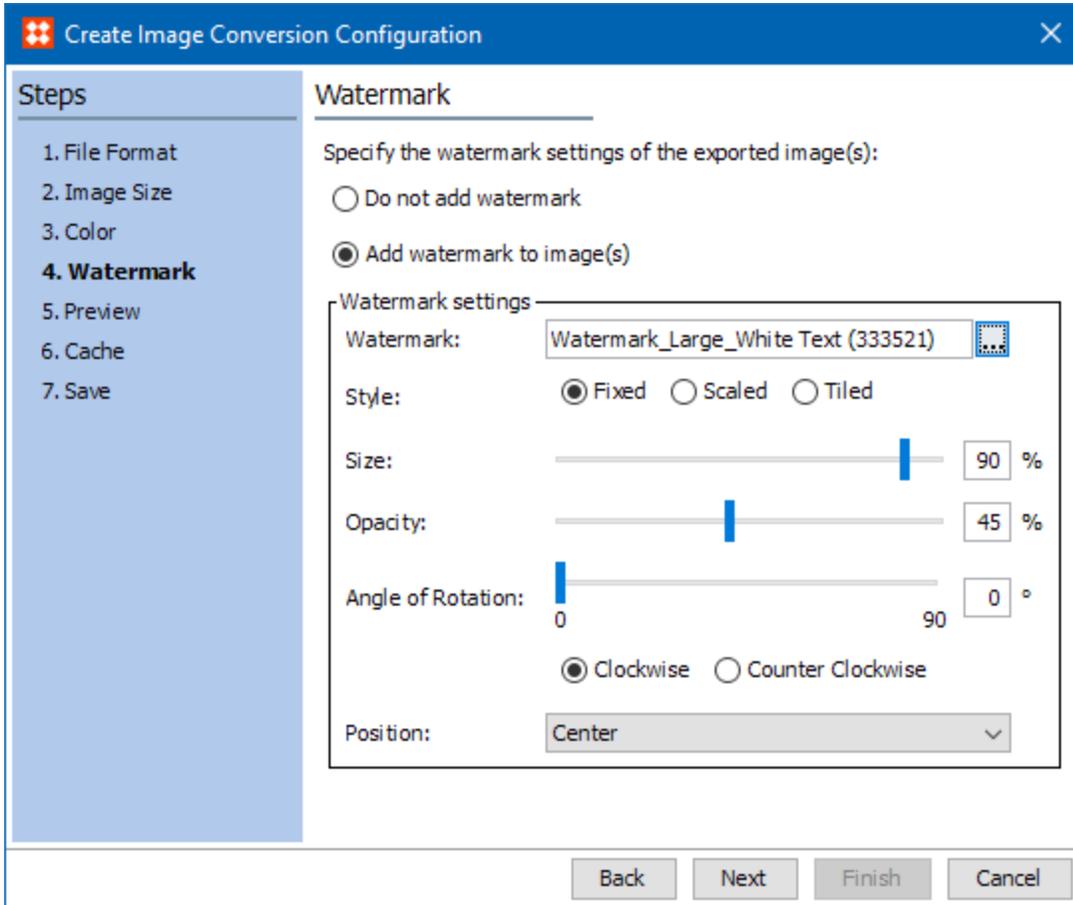
If changes are necessary, select **Change color Settings** and specify the desired color mode. For details about the color options, see the **Color** topic in the **Export Images and Documents Wizard** documentation.

Click **Next**.



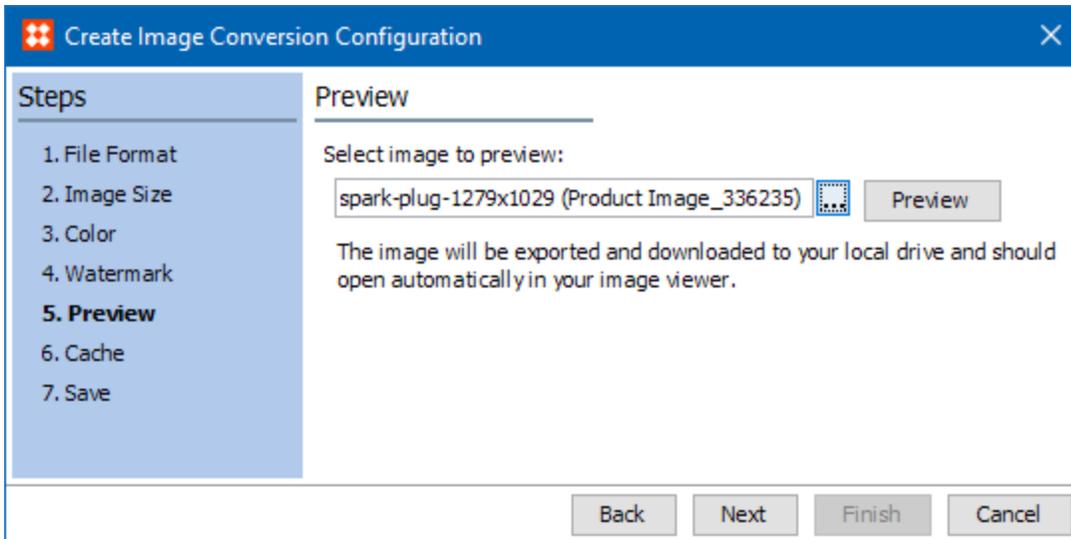
6. For the **Watermark** step, select **Do not add watermark** if you do not need watermarks to display on the exported images.

If watermarks are necessary, select **Add watermarks to image(s)** and configure the relevant Watermark settings. For detailed information on these settings, see the **Watermark** topic in the **Export Images and Documents Wizard** documentation.

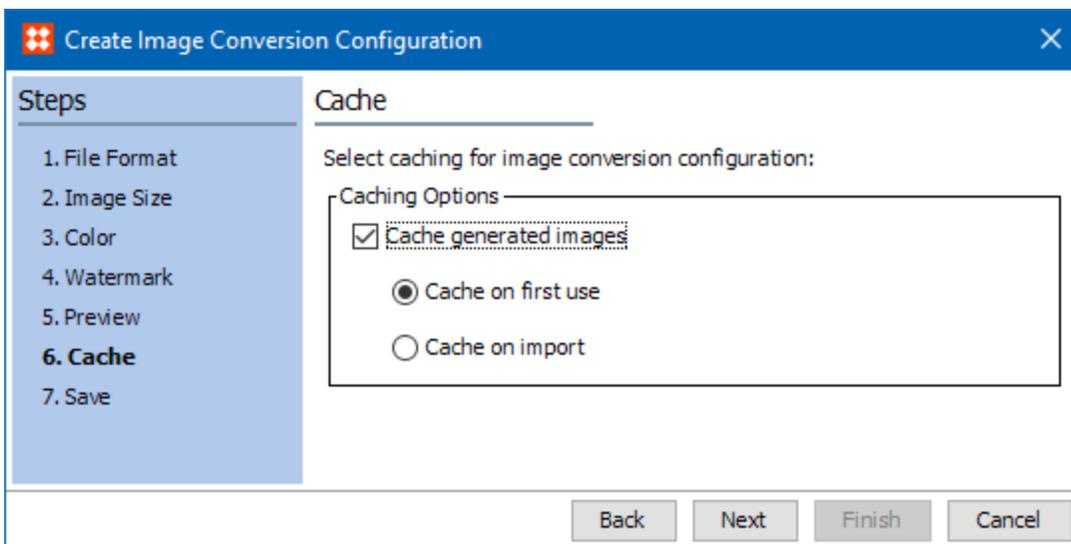


7. For the **Preview** step, click the ellipsis button (...) to browse to or search for an image that you would like to preview, then click **Preview**.

This step provides a visual check on images to ensure that they look correct before they are exported. For example, you can use the preview to determine if the color settings and/or watermarks display as they should. For additional information, see the **Preview** topic in the **Export Images and Documents Wizard** documentation.



8. For the **Cache** step, the checkbox enables the ability to cache, and the radio buttons determine when the caching will occur. Caching is available via the Export Manager or asynchronously based on events via the Image Cache event processor. For more information, see the **Assets and Content with STEPXML** section of the **Digital Assets** documentation or the **Image Cache Processing Plugin Parameters and Triggers** section of the **Event Processors** documentation.
- **Cache on first use** - the converted image is not cached until the first time it is accessed for viewing, exporting, or in an image preview.
 - **Cache on import** - the converted image is cached when it is imported.



Note: For optimal system performance, it is important to configure the 'Image Cache Event Processor' to listen for incoming selected asset object types and to apply the selected conversions automatically. All user configured image conversions that have been set to 'cache on import' are available.

7. For the **Save** step, enter an ID and name for the Image Conversion Configuration.

Create Image Conversion Configuration

Steps

1. File Format
2. Image Size
3. Color
4. Watermark
5. Preview
6. Cache
- 7. Save**

Save

Enter ID and name of saved image conversion configuration:

ID

Name

8. Click **Finish** to save the configuration in the originally selected classification folder.

Edit an Image Conversion Configuration

Once an image conversion configuration has been created, changes can be made using these steps.

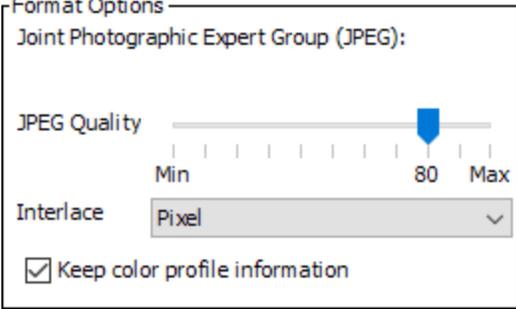
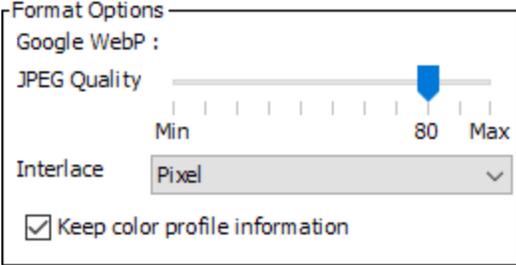
1. In Tree, expand the classification folder that holds the image conversion configuration to edit, right-click the configuration, and select **Edit Image Conversion Configuration**.
2. Use the Edit Image Conversion Configuration wizard to modify the configuration settings.

Image Formats

The following formats can be selected when exporting assets using a custom image conversion in the **Export Images and Documents wizard** or when creating an **Image Conversion Configuration**.

For all formats, any non-image asset in the selected folder remains unchanged and is exported as is.

Note: The '**Keep color profile information**' option available with some formats (JPEG, WEBP, PNG, and TIFF) can override other selections made in the conversion configuration. If results of the conversion are not as expected, try disabling the selection (which is checked by default).

Format	Description	Format Options
Current – Use the existing format	Keep the current / original format of the image.	No format options are available.
BMP – Windows Bitmap	Convert the image to .BMP format.	No format options are available.
JPEG – Joint Photographic Expert Group	<p>Convert the image to .JPG format via the parameters.</p> <p>JPEG Quality: Move slider as desired; Defaults to 80. Min (Minimum) - lowest quality, smallest file size; Max (Maximum) - highest quality, largest file size.</p> <p>Interlace: Pixel, Plane</p> <p>Keep color profile information</p>	
WEBP - Google File Format	<p>Convert the image to .WEBP format via the parameters.</p> <p>JPEG Quality: Move slider as desired; Defaults to 80. Min (Minimum) - lowest quality, smallest file size; Max (Maximum) - highest quality, largest file size.</p> <p>Interlace: Pixel, Plane</p> <p>Keep color profile information</p>	

Format	Description	Format Options
PICT – Macintosh Picture	Convert the image to .PICT format.	No format options are available.
PNG – Portable Network Graphics	Convert the image to .PNG format via the parameters: Compression Level: From 0 - 90 in increments of 10 Interlace: Line, Pixel Keep color profile information PNG supports only RGB-color mode.	<div style="border: 1px solid black; padding: 5px;"> <p>Format Options</p> <p>Portable Network Graphics (PNG): PNG does not contain any resolution information and only supports the RGB colour mode.</p> <p>Compression Level <input type="text" value="70"/> ▾</p> <p>Interlace <input type="text" value="Line"/> ▾</p> <p><input checked="" type="checkbox"/> Keep color profile information</p> </div>
TIFF – Tagged Image File Format	Convert the image to .TIFF format via the parameters: Compression Type: None, Fax, Group 4, JPEG, LZW, RLE, ZIP. The Compression Type selection determines the JPEG Quality option displayed. JPEG Quality: Either select Low, Medium, High Maximum from the dropdown; or, move the slider as desired; Defaults to 80. Min (Minimum) - lowest quality, smallest file size; Max (Maximum) - highest quality, largest file size. Interlace: Line, Pixel, Plane Keep color profile information All of these options relate to those offered by Adobe Photoshop.	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>Format Options</p> <p>Tagged Image File Format (TIFF):</p> <p>Compression <input type="text" value="None"/> ▾</p> <p>JPEG Quality <input type="text" value="Low"/> ▾</p> <p>Interlace <input type="text" value="Line"/> ▾</p> <p><input checked="" type="checkbox"/> Keep Colour Profile Information</p> </div> <div style="border: 1px solid black; padding: 5px;"> <p>Format Options</p> <p>Tagged Image File Format (TIFF):</p> <p>Compression <input type="text" value="None"/> ▾</p> <p>Interlace <input type="text" value="Line"/> ▾</p> <p><input checked="" type="checkbox"/> Keep color profile information</p> </div>
Pipeline – Use predefined image	Use a standard image pipeline. The available options depend on your system setup. Selecting a pipeline automatically provides the same image conversion options	<div style="border: 1px solid black; padding: 5px;"> <p>Format Options</p> <p>Select predefined image conversion pipeline:</p> <p>Pipeline <input type="text" value="AssetPush_lowres"/> ▾</p> </div>

Format	Description	Format Options
conversion pipeline	<p>each time.</p> <p>Saving an image conversion configuration allows you to apply the same settings for multiple exports. For more information, see Image Conversion Configuration.</p> <p>Steps Image Size and Color are disabled. No additional wizard settings are required.</p>	
Script - Use predefined script	<p>Use a predefined script to convert images.</p> <p>A 'script' is a piece of code that can make a special transformation on an asset. Typically, this is custom development done by Stibo Systems to fulfill customer requirements. Once saved to a specific folder on the application server, a script displays in the dropdown.</p> <p>The script must take three arguments:</p> <ol style="list-style-type: none"> 1. The contents of the asset 2. The properties of the asset (e.g., MIME type, width, extension etc.) as a property file 3. A file name where the converted images should be generated <p>No additional wizard settings are required.</p>	<div style="border: 1px solid black; padding: 5px;"> <p>Format Options</p> <p>Select predefined image conversion script:</p> <p>Script <input style="width: 100%;" type="text"/></p> </div>

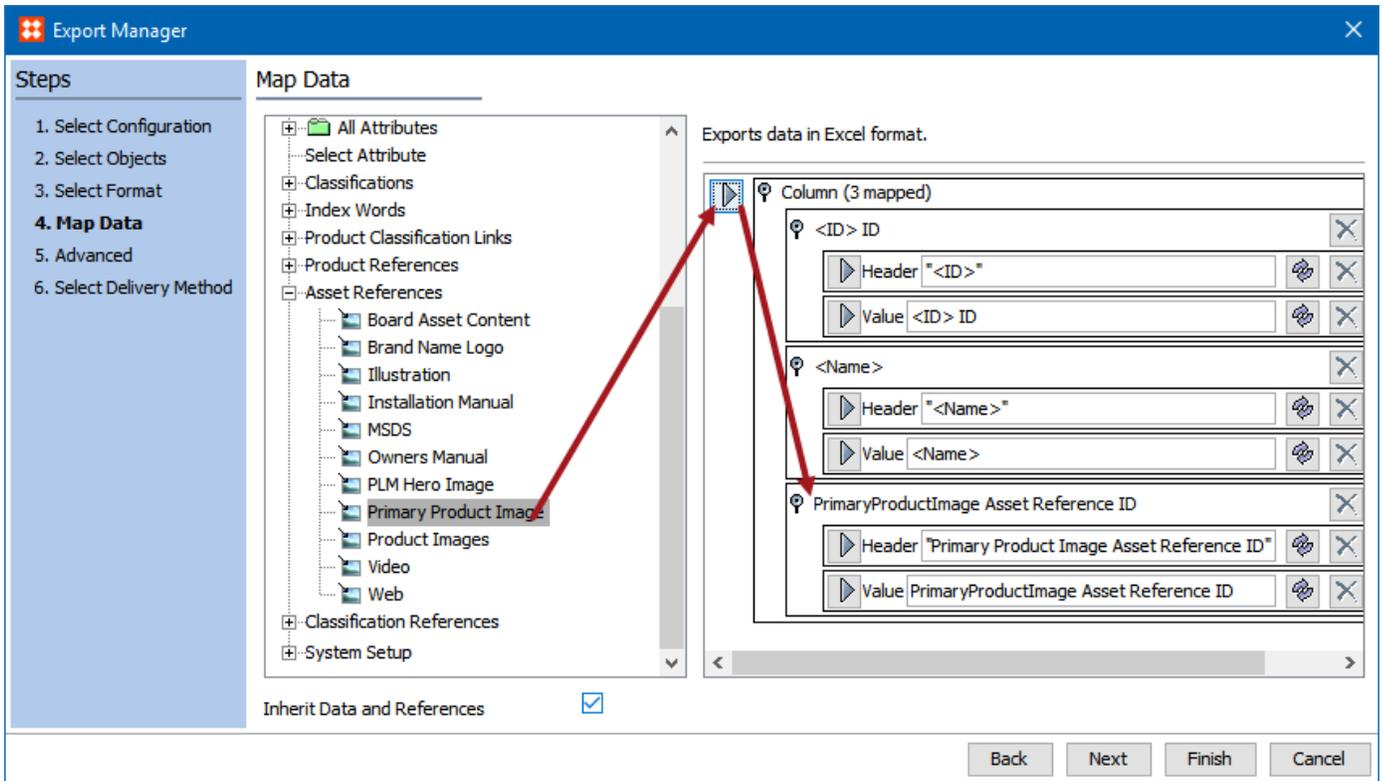
Referenced Assets in ZIP file with Excel or CSV

For on-demand exporting, the Export Manager wizard Excel and CSV formats include the option to export referenced assets in a .ZIP file. For automatic exports based on events, an OIEP can be configured to listen for new, changed, and deleted assets. For automatic exports based on a static set of data, a Select Objects OIEP can be configured. All options are defined below.

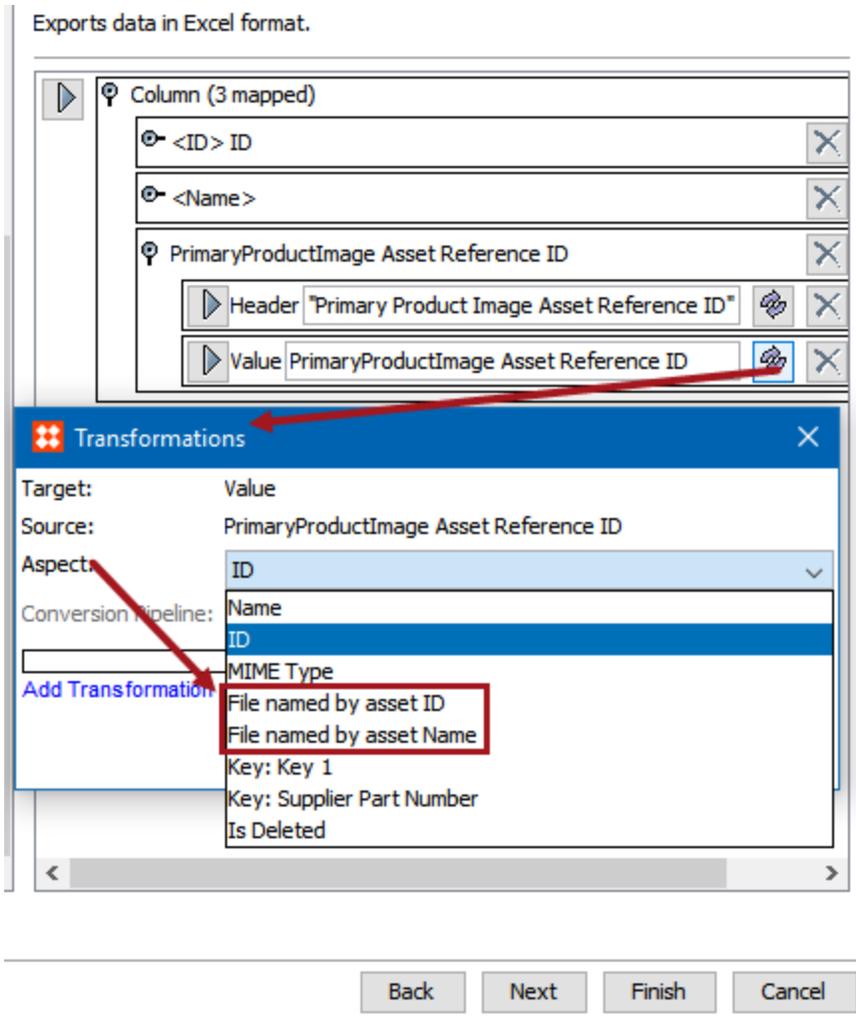
Image Conversion Configurations can be used to save image conversion settings when the same image will be used in a modified way for different use cases, for example on a website or a printed catalog. Both export manager and the event processor enable the use of Image Conversion Configurations. Additionally, automatic caching of converted images can be achieved via the Image Cache event processor. For more information, see the **Creating an Image Conversion Configuration** section of the **Digital Assets** documentation and see **Image Cache Parameters and Triggers** section of the **Creating Event Processors** documentation.

Exporting in ZIP file using Export Manager

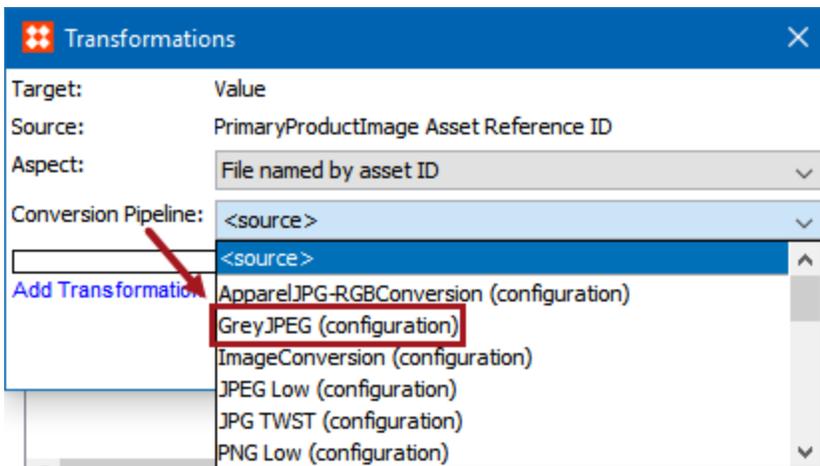
1. Complete the first three steps of the **Export Manager** wizard. If needed, the following topics provide details:
 - Launch the Export Manager wizard as described in **Creating a Data Export**.
 - In **Select Configuration**, create a new configuration.
 - In **Select Objects**, select the objects with referenced assets to export.
 - In **Select Format**, select Excel or CSV.
2. For the **Map Data** step, select the necessary data sources and move them to the right-hand column, including the asset reference.
 - For details about mapping data sources, see **Outbound Map Data - Data Source**.
 - For detail on how to map referenced assets, see the **Asset References - Data Source Outbound** documentation.



3. For the **Asset Reference Value** parameter, click the Transformation button and select the desired file name option for the asset files that will be included in the zipped export file.
 - **File named by asset ID** - uses the STEP ID as the asset file name for the exporting asset.
 - **File named by asset Name** - uses the STEPName as the asset file name for the exporting asset.

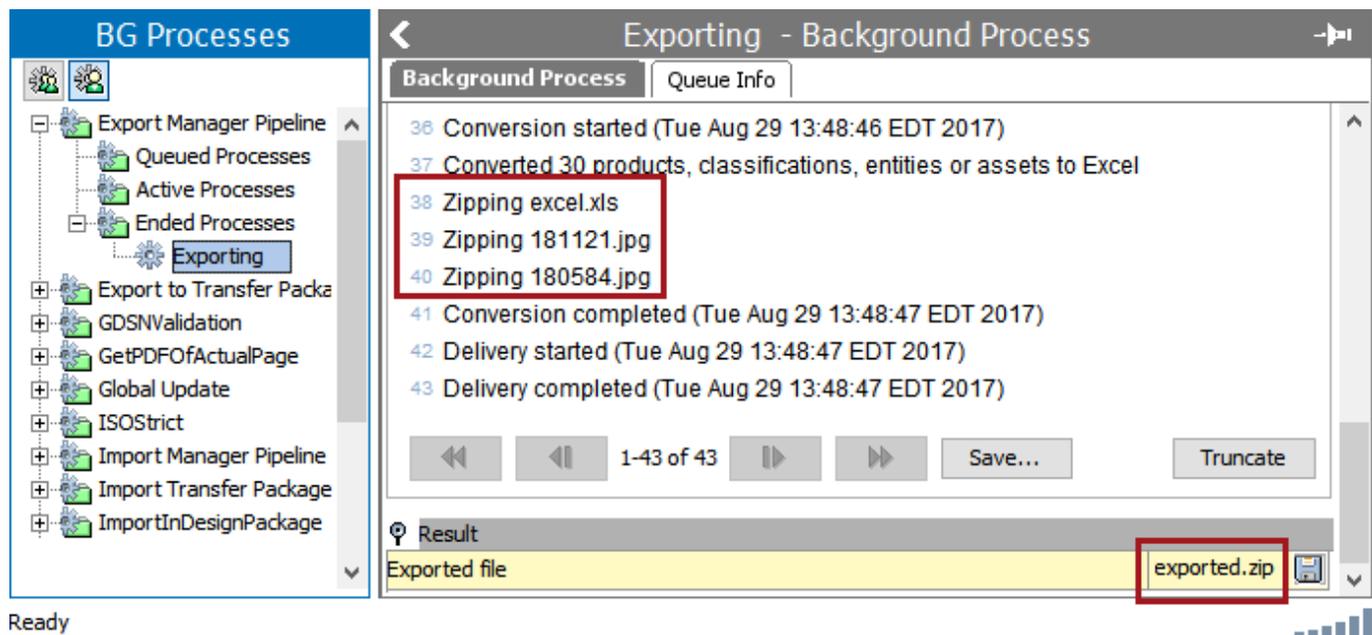


4. If needed, choose an image conversion configuration from the **Conversion Pipeline** field and click the **Save** button. The list displayed includes user created image conversion configurations in STEP. The **Source** option exports the original asset content and no conversion is applied.



5. Complete the last two steps of the **Export Manager** wizard. If needed, the following topics provide details:
 - In **Advanced**, update parameters as required.
 - In **Select Delivery Method**, select the delivery method.
6. Click the **Finish** button to complete the configuration and choose the desired export option. For details, see the **Running a Data Export** section.

The export file is displayed on the background processes tab under the Export Manager Pipeline node. The contents of the zip file are listed in the Execution Report flipper.



Opening the exported.zip file shows the contents reported in the Execution Report. The zipped asset files reflect the selected image conversion configuration.

step-8209076442888469147-exported



Exporting in ZIP file using Event-Based or Select Objects OIEP

Creating an OIEP that generates zipped referenced assets via Excel or CSV formats involves the same mapping setup as is defined above for Export Manager.

All steps required to create an OIEP are outlined in the **Event-Based Outbound Integration Endpoint** section or the **Select Objects Outbound Integration Endpoint** section of the **Outbound Integration Endpoints** documentation.

Importing Assets

There are two methods of importing assets into STEP:

- **Asset Importer** - This is the primary method of importing assets via Web UI and/or hotfolders configured with an Inbound Integration Endpoint. It can, among other things, be configured to run business rules, interact with STEP workflows, convert image files to other formats, and make quality checks on images to make sure that they meet any minimum requirements.

For more information, see the **Asset Importer** section of the **Digital Assets** documentation.

- **Manual Asset Importer** - This is the only method of importing assets via STEP Workbench. This functionality offers a simpler solution for quickly importing assets with on-the-fly manual configurations. Unlike Asset Importer, this functionality cannot be configured for scheduled imports.

For more information, see the **Manual Asset Importer** section of the **Digital Assets** documentation.

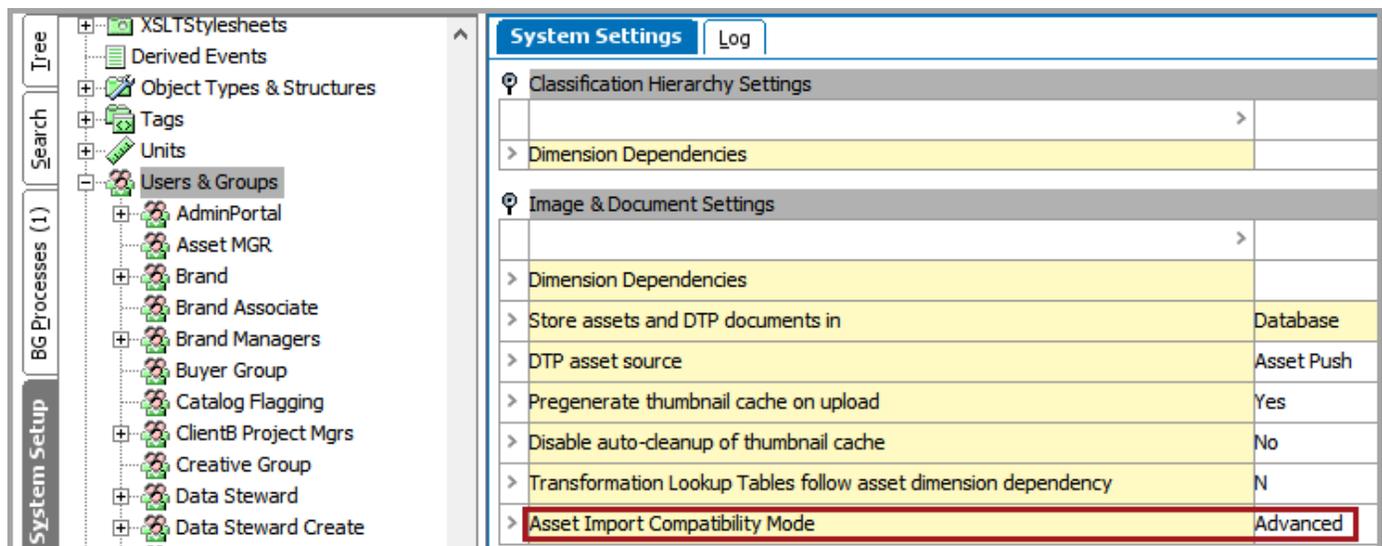
Asset Importer

The Asset Importer is a robust tool that offers users a wide variety of options for mass loading images, documents, and other digital assets into STEP.

The Asset Importer is core functionality used to import and update asset data in STEP. It was inspired by the previous hotfolder-based add-on component known as the 'Enhanced Image and Document Uploader.'

Additionally, the importer can be configured to run business rules, interact with STEP workflows, convert image files to other formats, create classification hierarchies, link assets to products, purge old revisions, and perform quality checks on images during the import to ensure that they meet any minimum requirements.

To access the Asset Importer functionality, the 'Asset Import Compatibility Mode' parameter (located under Users & Groups > System Settings > Image & Document Settings) must be set to 'Advanced.'



For information on this and other configuration steps, see the **Asset Importer Configuration Overview** section of this documentation.

Once an Asset Importer configuration has been created in STEP Workbench, assets can be loaded via hotfolders configured with an Inbound Integration Endpoint (using the Asset Importer processing engine), or through various means in Web UI. Note that STEP Workbench handles asset imports differently and does not use asset import configurations.

For more information on importing assets via workbench, see the **Manual Asset Importer** section of the **Digital Assets** documentation.

Importing Assets via Web UI

Assets can be imported / updated in a number of ways via Web UI. Assets importing methods include:

- Asset Importer Widget - Users can upload assets using a simple drag-and-drop interface from the Web UI homepage

- Upload Asset action - Assets can also be added via the Upload Asset action, or if one needs to be updated
- Replace Asset Content - Assets can be replaced via the Replace Asset Content icon (configurable on any Asset Mid Sized (superseded) or Asset Representation components)

For details about importing assets via Web UI, see the **Asset Importer in Web UI** section of the documentation.

Importing Assets via an Inbound Integration Endpoint

Inbound Integration Endpoints (IIEP) can be configured to utilize the Asset Importer functionality, allowing users to apply the rules and quality checks associated with an importer configuration(s) to any number of asset hotfolder imports. An IIEP can be configured for each hotfolder, or to control a hierarchy of hotfolders. When configured with a hierarchy of hotfolders, global configurations can be set on the highest level hotfolder and inherited down to all lower level hotfolders. Each of these lower level hotfolders can have their own unique variation of the base configuration (e.g., Logos, Product Images, Web Images, etc.).

For more information, see the **Asset Importer Configuration Overview** section of the documentation.

For more information on configuring inherited hotfolder settings, see the **IIEP - Configure Asset Importer Processing Engine** section of the **Inbound Integration Endpoints** documentation.

Additional Information

Whatever the interface, the Asset Importer includes functionality allowing users to:

- Import digital assets in STEP, as well as update them when updated versions are received
- Upload individual asset files or a zip file containing multiple asset files
- Use metadata files to control the way digital assets are uploaded
- Locate the correct folder in which to categorize assets, and generate the asset hierarchy if it doesn't exist
- Approve new folders, assets, and product-to-asset references
- Launch a new workflow or trigger a transition in an active workflow
- Run business rules after the assets have been imported
- Examine the assets and reject file formats, color spaces, DPI, physical sizes, and file sizes that don't meet minimum requirements
- Import metadata from an asset file and/or import EXIF information stored within assets
- Create references between products and digital assets based on configurable match criteria
- Purge old, unused revisions of assets in STEP to prevent the database from growing larger than needed
- Set global configurations on the highest level hotfolder that are inherited to all lower level hotfolders, each of which can have their own unique variation of the base configuration (e.g., Logos, Product Images, Web Images, etc.)

Asset Importer Configuration

The Asset Importer provides a wide array of configuration options, allowing users to address both simple and complex requirements.

Prerequisites

The Asset Importer functionality requires a new Setup Group called 'Asset Import Configurations,' which will hold all import configurations at a central place in the STEP system. A child setup group for storing the actual import configuration will need to be created as well and should be named 'Asset Import Configuration Type.' This allows for storing all asset import configurations in one location in STEP.

Before importer configurations can be created, it may be required to create a setup group for the configurations if they don't already exist, and to set up user privileges for viewing and maintaining the configurations. Additionally, 'Asset Import Compatibility Mode' must be set to 'Advanced' on the Users and Groups node.

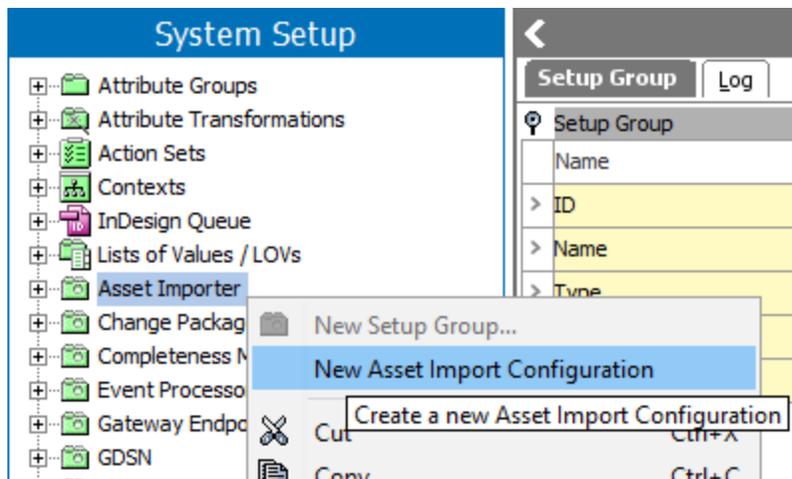
For more information on this and other initial setup steps, see the **Asset Importer Initial Setup** section.

Important: It is highly recommended to enable the asset caching functionality to optimize future export performance. For more information, see the **Event Processors** section of the **System Setup / Super User Guide** documentation.

Creating a New Asset Importer

If a new Asset Import configuration needs to be created, it can be done directly in System Setup by right-clicking on the 'Asset Import Configuration' setup group and selecting 'New Asset Import Configuration.'

1. Navigate to the System Setup tab.
2. Right-click the appropriate setup group root node from System Setup.
3. Select 'New Asset Import Configuration.'



See the **Identify Configuration** topic in this documentation for more information.

Creating Asset Importer Configurations

Once the necessary setup tasks have been completed, Asset Importer configurations allow users to select previously set up configurations to keep consistent imports. Asset Importer configuration can be modified at any time.

To maintain an Asset Importer configuration:

1. Go to System Setup.
2. Navigate to the relevant configuration.
3. Select the 'Asset Importer Configuration Type' tab.

The full configuration can be viewed and edited from this tab.

Asset Importer Configuration Type	
Description	
Name	Value
ID	Image Importer
Name	Image Importer
Object Type	Asset Importer Configuration Type
Revision	0.5 Last edited by USER3 on Tue Oct 11 14:10:22 EDT 2016
Path	Asset Importer/Image Importer
Description	

<input checked="" type="checkbox"/>	Import Validator
<input type="checkbox"/>	Hierarchy Builder
<input type="checkbox"/>	Asset Matcher
<input type="checkbox"/>	Content Importer
<input type="checkbox"/>	Metadata Importer
<input type="checkbox"/>	Product Linker
<input type="checkbox"/>	Approver
<input type="checkbox"/>	Auto Purger
<input type="checkbox"/>	Workflow Handler
<input type="checkbox"/>	Business Rules

When creating an asset importer, the wizard displays all available configuration options. See the following topics in this documentation for how to configure the flippers when maintaining an Asset Importer:

- Import Validator
- Hierarchy Builder
- Asset Matcher
- Content Importer
- Metadata Importer
- Product Linker
- Approver

- Auto Purger
- Workflow Handler
- Business Rules

Configuring IIEP and Web UI

It is also necessary to set up an IIEP and/or Web UI in order to use Asset Importer.

For more information on Asset Importer in Web UI, see the **Asset Importer in Web UI** section of the documentation.

For more information on configuring an IIEP for Asset Importer, see the **Asset Importer Inbound Integration Endpoint Configuration** section of the documentation.

Asset Importer Initial Setup

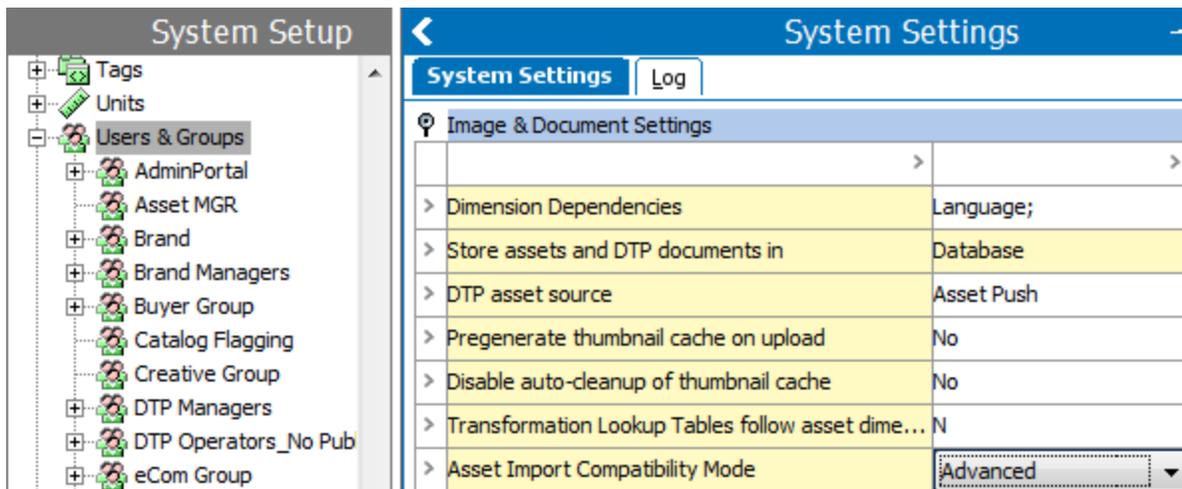
Some initial setup may be required before Asset Importer configurations can be created.

- The Asset Import Compatibility Mode must be set to 'Advanced'
- A setup group must be created to hold the Asset Importer configurations
- User permissions must be established for viewing and maintaining import configurations.

Advanced Asset Import Compatibility Mode

To enable the Asset Importer functionality, the 'Asset Import Compatibility Mode' setting must be set to 'Advanced' as described below.

1. Navigate to System Setup > Users & Groups, and click the **System Settings** tab.
2. Under the 'Images & Documents Settings' flipper, select 'Advanced' from the 'Asset Import Compatibility Mode' dropdown list.



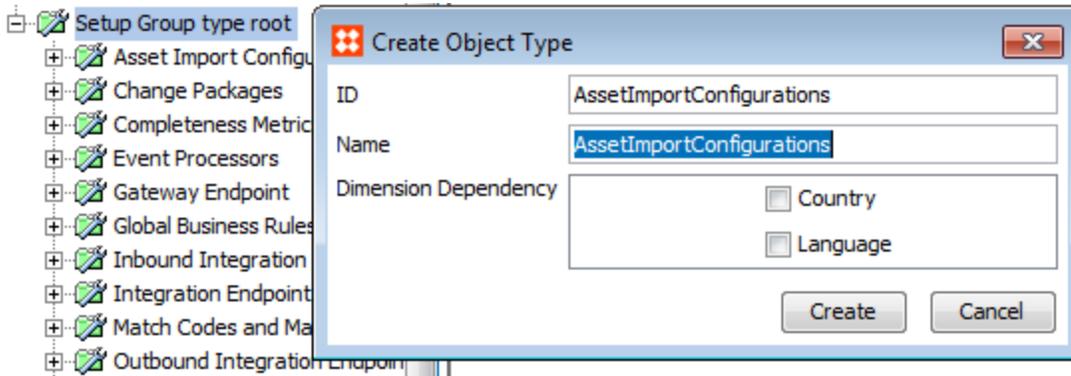
Important: If enabled, the old asset import functionality will become disabled. This will ensure a consistent method to import and update assets in STEP.

The other Asset Import Compatibility Mode is **Simple**. This mode is the default setting and deactivates the AI functionality. It ensures that the legacy image import is the default on existing STEP systems.

Setup Group

A setup group must be created to hold the Asset Importer configurations.

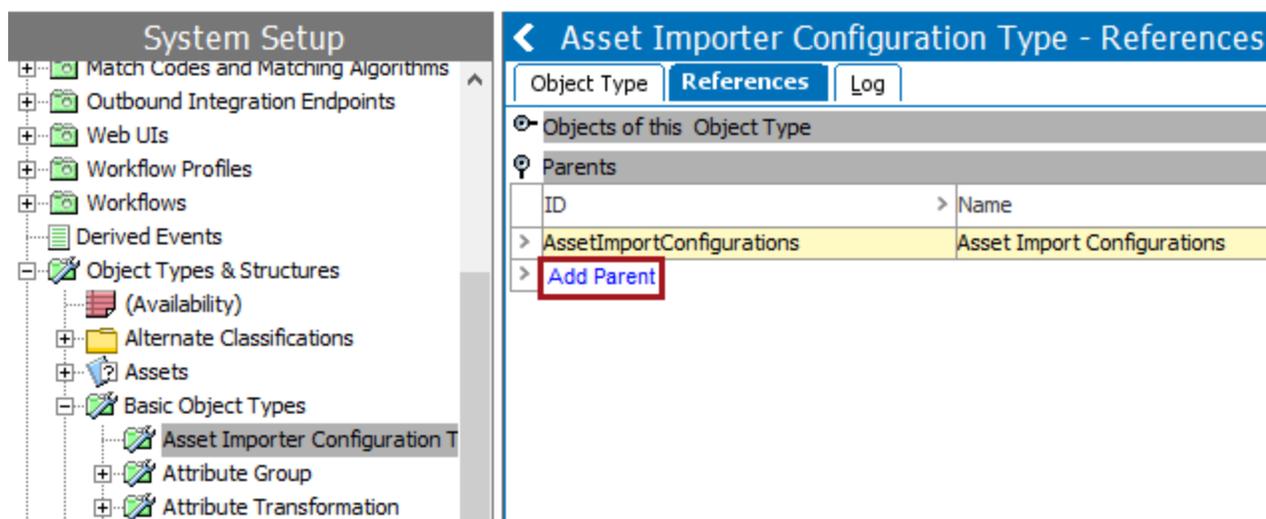
1. Navigate to System Setup > Object Types & Structures, right-click the 'Setup Group type root' node and select **New Object Type**.
2. In the window that appears, enter 'AssetImportConfigurations' in the ID parameter, then click **Create**. This creates a setup group in which all import configurations will reside.



Once the setup group is made, the 'Asset Import Configuration Type' basic object type must be linked to this newly created node as a child. Later, when new Asset Import configurations are created and added to the system, they will use this object type.

3. Navigate to 'Object Types and Structures' > 'Basic Object Types' > 'Asset Import Configuration Type', and click the 'References' tab.

Under the 'Parents' flipper, click **Add Parent**, and in the node selector dialog, specify the 'AssetImportConfigurations' node created in the above step.



The next step is to create a new setup group root, where all Asset Importer configurations are to be added upon creation.

Creating a New Setup Group Root

1. To create the setup group root, navigate to Maintain > Insert > Setup Group Root
2. Select the 'AssetImportConfigurations' setup group.
3. Specify 'ID' and 'Name.'

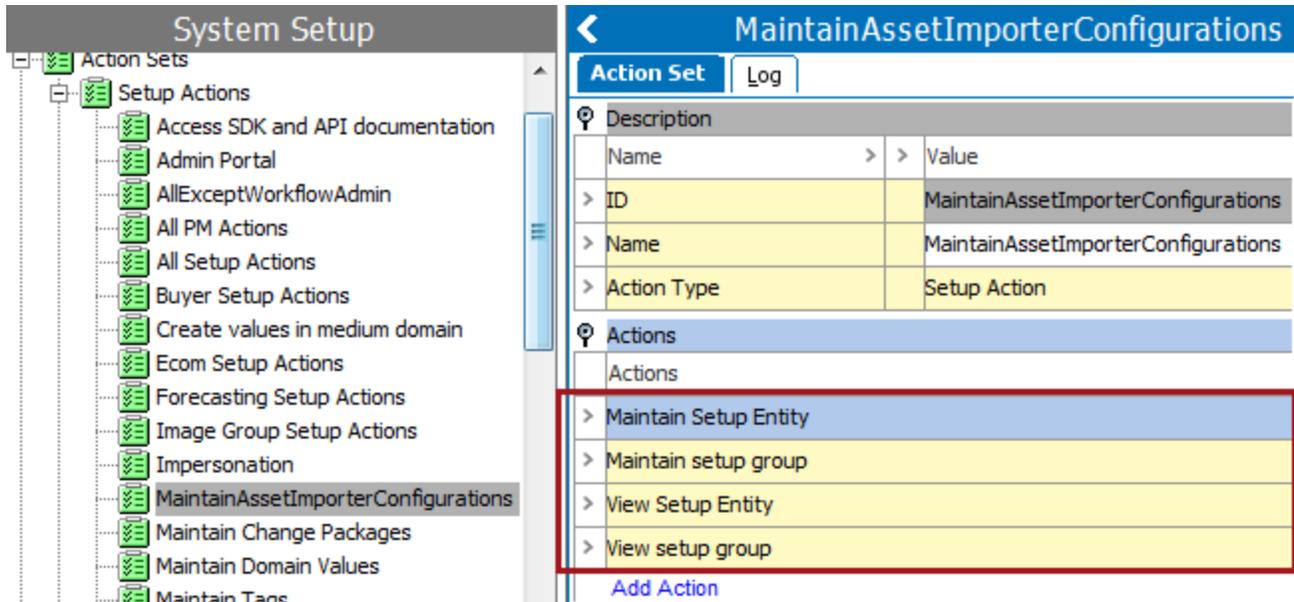
4. Click **Create**.

The setup group 'Asset Importer' of the type 'AssetImportConfigurations' is created. From this newly created node, users can right-click and add new Asset Importer configurations.

User Privileges

User permissions must also be established for viewing and maintaining import configurations.

1. Navigate to System Setup > Action Sets, right-click 'Setup Actions.'
2. Select 'New Action Set.' In the window that appears, enter 'MaintainAssetImporterConfigurations' in the ID parameter, then click **Create**.



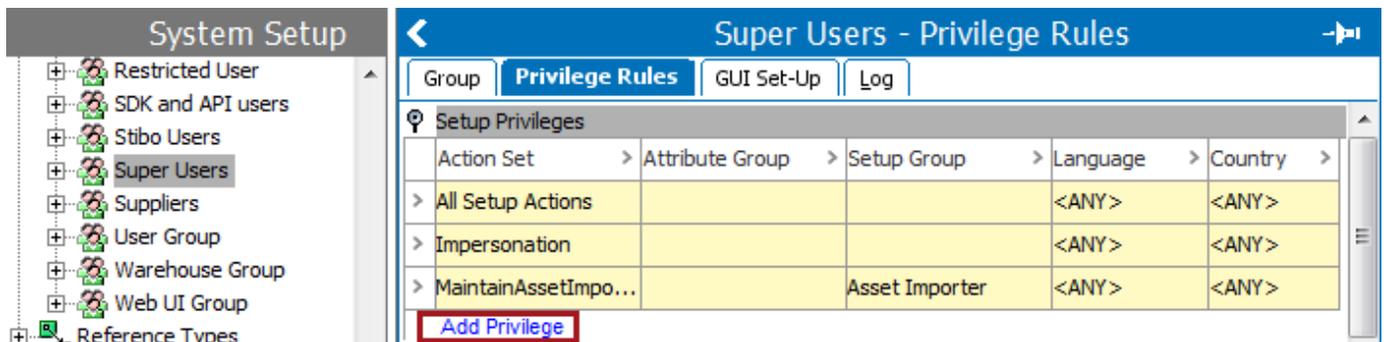
3. In the 'MaintainAssetImporterConfigurations' node created in the previous step, navigate to the 'Action Set' tab, and click **Add Action** found under the 'Actions' flipper.

From the list that appears, choose the follow actions and click **Select**:

- 'View Setup Entity'
- 'View setup group'
- 'Maintain Setup Entity'
- 'Maintain setup group'

4. Finally, navigate to System Setup > Users & Groups, and right-click the relevant user group.

5. Navigate to the 'Privilege Rules' tab, and under the 'Setup Privileges' flipper, click **Add Privilege**.



6. In the window that appears, click the ellipsis button (...) next to the 'Action Set' parameter.

7. Select the action set created in the above step. Alternatively, enter the name of the action set directly into the parameter.

Add Privilege Rule

Action Set: tImporterConfigurations

Attribute Group:

Setup Group: mpporter (Asset Importer)

Valid for Object Type:

Apply to Group: Super Users (Super user)

Dimensions:

Language: <ANY>

Country: <ANY>

Save Cancel

8. For the 'Setup Group' parameter, specify the setup group root created in 'Setup Group' section. In this example, 'Asset Importer' is specified.
9. Click **Save** when finished.

Identify Configuration

New Asset Import configurations can be created directly in System Setup by right-clicking on the 'Asset Import Configuration' setup group and then selecting 'New Asset Import Configuration.'

A configuration wizard with further options will appear to allow the creation of a new configuration.

1. The 'Configuration ID' field is a mandatory field that specifies the ID for the image import configuration. The ID must be unique among other configurations.

Note: A check will be performed that prevents the user from using an already existing image import configuration ID.

2. The 'Configuration Name' field is an optional field that specifies the name for the configuration. Though a name does not need to be specified, it is suggested to add a name to distinguish each configuration from the other. The configuration Name is pre-populated with the ID when switching to the field.
3. The 'Description' field is an optional field that provides a space for the user to describe the Asset Import configuration in more detail.

Import Validator

The Import Validator controls the allowable physical size of images, allowable color spaces, valid file types, DPI, and maximum file size. All settings under this flipper are optional and may be left blank.

Import Validator			
Import Validator			
> Width Dimension (Pixels)	<input type="text"/>	Min	<input type="text"/> Max
> Height Dimension (Pixels)	<input type="text"/>	Min	<input type="text"/> Max
> Valid Color Spaces	<input type="text"/> ...		
> Valid MIME Types	<input type="text"/>		
> DPI	<input type="text"/>	Min	<input type="text"/> Max
> Max File Size (MB)	100		

If any of these fields are populated, assets not meeting the validation requirements will not be imported. In this case, an error will be reported explaining why validation has failed.

The validation configuration options are as follows:

1. The 'Width Dimensions (pixels)' and 'Height Dimensions (pixels)' fields dictate the minimum and maximum dimensions of an imported image asset.
2. This setting is ignored if a non-image file (MIME type other than image/* or Application / postscript) is imported that does not have a DPI property.
3. Populate either or both fields if the size of the imported images must be above, below, or within a specific range.
4. If populated, enter a whole number defining the maximum / minimum dimensions (in pixels).

Note: An error will be displayed if the user tries to enter a non-integer into this field.

5. If minimum and maximum values are populated, check if the minimum value of each property does not exceed its corresponding maximum value or vice versa.
6. If a field is left empty, the entry for this particular field will be ignored as part of the validation.

Examples

- The maximum width has been set to 600 pixels. If the values for height have been left empty, the height of the image will be ignored as part of this validation. The image cannot be larger than 600 pixels in width to pass validation.
- The minimum height has been set to 500 pixels. If the values for width have been left empty, the width will not be validated at all. The image has to be at least 500 pixels in height in order to pass validation.
- The minimum height has been set to 300 pixels and the minimum width has been set to 600 pixels. In this case the image has to be at least 300 pixels in height and 600 pixels in width. Larger images will also pass validation, but smaller images will not.

- The minimum height has been set to 300 pixels and the maximum width has been set to 600 pixels. In this case the image has to be at least 300 pixels in height and cannot exceed the width of 600 pixels in order to pass validation.

Valid Color Spaces

The 'Valid Color Spaces' field determines which color spaces are valid for imported image assets.

1. This setting will be ignored if a non-image file (MIME type other than image/* or Application / postscript) is imported.
2. If left empty, no color space check will be performed on imported image assets.
3. Choose from the default color spaces, a multi-selection is possible.

Valid MIME Types

The 'Valid MIME Types' field determines which MIME types are valid for imported assets.

1. Populating this field is recommended, regardless of the type of assets being handled by the importer, but may be left empty if no validation is desired.
2. All valid values should be populated in the field, separated by a comma (no spaces).
3. Wildcards are allowed. For example, image/*, application/postscript.

DPI (Min / Max)

The 'DPI (min / max)' fields determine the minimum and maximum DPI of imported image assets.

1. This setting is ignored if a non-image file (MIME type other than image/* or Application / postscript) is imported that does not have a DPI property.
2. Populate either or both if the DPI of the imported images must be above, below, or within a specific range.

Note: Ranges can be greater than, less than, or an exact match. This is determined by filling out one of the two fields, or by filling out both fields.

Examples

- To only accept images with a minimum required DPI, fill out only the 'min' field (e.g., '300 min' will only accept images with 300 or greater DPI).
 - To only accept images up to a maximum allowed DPI, fill out only the 'max' field (e.g., '400 max' will only accept images up to 400 DPI).
 - To specify a DPI range, fill out both fields (e.g., 72 min – 300 max will only accept images with a minimum of 72 DPI but not more than 300 DPI).
 - For an exact match fill out both fields (e.g., 300 max and 300 min will only accept images with exactly 300 DPI).
3. If a field is left empty, the entry for this particular field will be ignored as part of the validation.
 4. If populated, enter a whole number defining the min or / and max allowed DPI.

Note: An error will be displayed if the user tries to enter a non-integer into the min / max DPI fields.

5. If minimum and maximum values are populated, check that the minimum value does not exceed the maximum value.

Max File Size (MB)

1. The 'Max File Size' field determines how large the imported asset file can be (in megabytes).
2. If left empty, no file size restriction will be applied.

Hierarchy Builder

The Hierarchy Builder creates classification folders in which the imported assets are stored (if the folders do not already exist). Both 'File Name Hierarchy Builder' and 'Metadata Hierarchy Builder' are the configuration options available for the Hierarchy Builder. The 'File Name Hierarchy Builder' configuration option uses the names of the assets being loaded to generate a multi-level hierarchy in STEP, while the 'Metadata Hierarchy Builder' configuration option creates folders in STEP from a metadata file containing the desired file structure for each asset.

This topic will cover both configuration options (including their similarities and differences) available in the Hierarchy Builder.

File Name Hierarchy Builder

The screenshot shows the 'Asset Importer Configuration Type' interface. It includes a 'Log' button and a 'Status' button. The configuration is organized into sections: 'Description', 'Import Validator', and 'Hierarchy Builder'. Under 'Hierarchy Builder', a dropdown menu is set to 'File Name Hierarchy Builder'. Below this, there are three rows of configuration options:

> Asset Hierarchy Root	Tools (284121)	...
> Use Selected Classification For Manual Im...	<input checked="" type="checkbox"/>	
> Number Of Folder Levels To Be Created	2	

Both 'File Name Hierarchy Builder' and 'Metadata Hierarchy Builder' configurations include an 'Asset Hierarchy Root' and 'Use Selected Classification for Manual Imports' field, and function in the same manner regardless of the hierarchy builder chosen by the user.

Note: The 'File Name Hierarchy Builder' includes an additional option, 'Number of Folder Levels to Be Created', while the 'Metadata Hierarchy Builder' includes a 'Hierarchy Metadata Field' option.

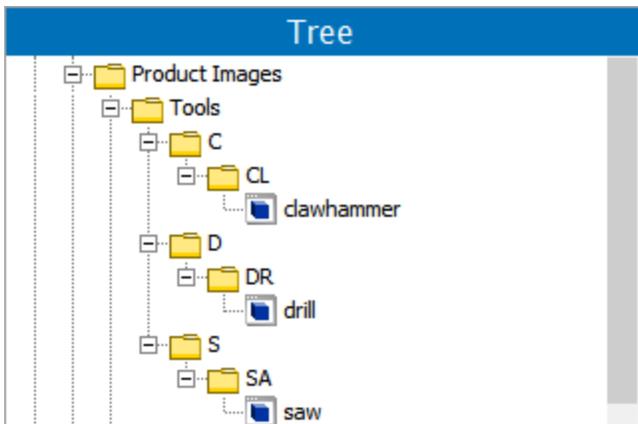
- **Asset Hierarchy Root:** In this field, the user selects or searches for the classification in STEP under which all asset hierarchy folders will be created. To select a classification, in the 'Asset Hierarchy Root' field, click the ellipsis button (...) and select the STEP ID for the desired root classification.
- **Use Selected Classification for Manual Imports:** If the 'Use selected classification for manual imports' checkbox is enabled, the asset hierarchy root selection made above will be overwritten by the classification hierarchy selected during manual import (via Web UI).

For more information regarding manually importing assets in the Web UI, see the **Asset Importer in Web UI** topic in the **Importing Assets** documentation.

- **Number of Folder Levels to be Created** ('File Name Hierarchy Builder' option only): In the 'Number of Folder Levels to be Created' field, specify the number of hierarchy levels to be generated. By default this parameter is set to '0', which results in placement of the asset(s) directly into the indicated Asset Hierarchy folder. Any whole number exceeding '0' added in this field determines the number of folder levels that will be created under the root. The folder created at the first level of the hierarchy under the root is named with the

first character of the imported asset name, the second level folder under the root with the first two characters of the imported asset name, and so on.

As an example, in the screenshot below, the 'Number of Folder Levels to be Created' field has been populated with with the number '2':



The folders are created and placed in the Asset Hierarchy Root, in this case, 'Tools', and named based on the asset name. The 'clawhammer' image asset in this example would be placed in a folder named 'CL' (second level) while that folder would be placed in a folder named 'C' (first level).

- **Hierarchy Metadata Field** ('Metadata Hierarchy Builder' option only): The file name included in the metafile needs to be placed in this field. Further details regarding the Hierarchy Metadata Field will be covered later in this topic in the 'Metadata Hierarchy Builder' section.

Folder Identification and Creation

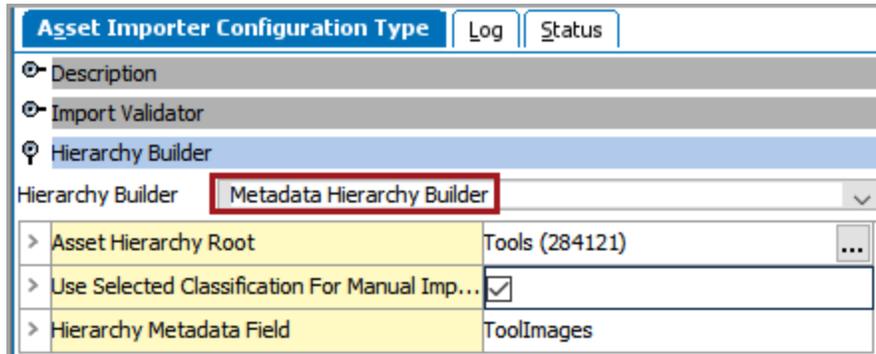
Prior to importing assets, a classification structure of repeating asset sub-folders should be set-up via the object type setup in System Settings. Doing so will allow for the creation of sub-classification folders during import. These asset hierarchy classification object types should use auto-generated IDs to avoid potential errors.

For more information regarding classification structure, see the **Classification Hierarchy Structure** topic in the **Object Types and Structures** documentation.

When creating the classification structures, the system searches for a classification in STEP that matches the classification name selected in the Asset Hierarchy Root field.

- If a match is found, the asset is placed under it.
- If 'File Name Hierarchy Builder' is selected and a match is not found, the system attempts to create a new folder based on the file name using the first available classification child object type. If the folder cannot be created due to either no available sub-classification object types or missing permissions, then the system logs an error and the asset is not uploaded.

Metadata Hierarchy Builder



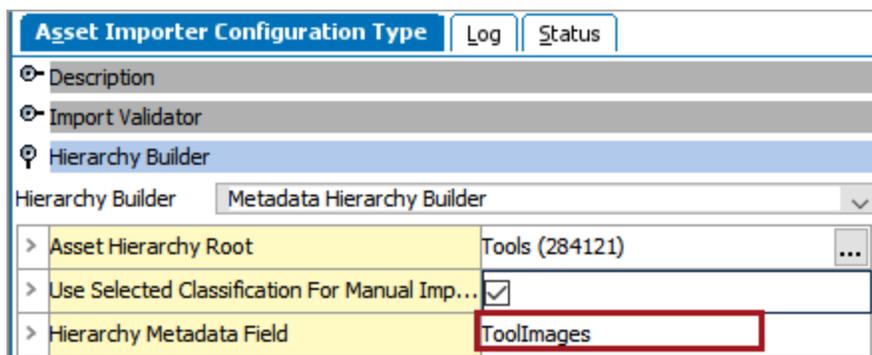
The Metadata Hierarchy Builder option creates folders in STEP from a metadata file containing the desired file structure for each asset. To use this option, the 'Metafile Receiver or ZIP' with 'Metafile Receiver' option must also have been selected as the Receiver.

For more information regarding selecting options within the receiver, see the **IIEP - Configure Asset Importer Processing Engine** topic in the **Creating an Inbound Integration** documentation.

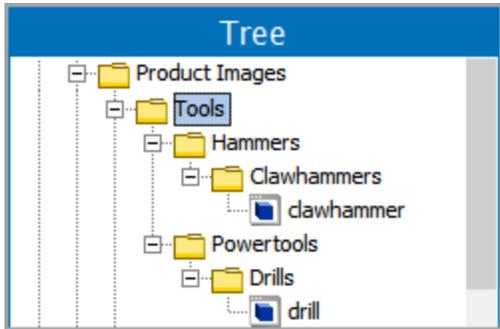
The image below shows a basic example of a metafile that contains a simple file structure.

```
Filename;ToolImages
clawhammer.jpg;Hammers/Clawhammers
drill.jpg;Powertools/Drills
```

Note that the Hierarchy Metadata Field file name (in this case, 'ToolImages') matches the Filename in the metafile shown above. This allows STEP to read the metafile and create folders based on the information within the metafile.



In this example, based on the metafile above, the assets (in this case, clawhammer.jpg and drill.jpg) are placed in hierarchical folders within the Asset Hierarchy Root.



If a folder listed in the metafile already exists within the chosen Asset Hierarchy Root, that folder will not be re-created and the asset assigned to the folder within the metafile will be placed in the existing folder.

Considerations

- Supplier users are only allowed to have access to their specified classification structure in the yellow supplier hierarchy under the suppliers sub folder 'assets.' This will ensure protection from other suppliers.
- Ensure that the Asset Hierarchy Root property is adjusted to match the dedicated classification root folder for the particular supplier user.
- It is strongly recommended to set asset hierarchy classification object types to use auto-generated IDs.

Asset Matcher

Based on criteria defined in the Asset Matcher configuration, the Asset Importer can determine when an asset is new to STEP or is a replacement for an existing asset. It also indicates whether or not new assets are allowed to be created, and if so, allows for the use of regular expressions or metadata to control how the STEP Names and IDs of those assets are set.

The Asset Matcher comes with one default option, the Standard Asset Matcher, which lets you define how new and existing assets will be handled, using a series of configuration options and regular expressions.

A number of the parameters on this step require the use of regular expressions. For more information, see the **Regular Expression** section of the **Resource Materials** online help.

Besides the default Asset Matcher plugins, custom ones can be created to extend and modify the asset matcher functionality further.

An asset matcher selection must be made, and the corresponding configuration options populated.

Asset Matcher	
Asset Matcher	Asset Matcher
> Asset Matcher Hierarchy Root	9 (20138) ...
> Match on	ID
> File Name Match Expression	(.*)\.*
> Match Template	\$1
> ID Template	\$1
> Name Template	\$1
> Multiple Matches Found	Error on record

1. Asset Matcher Hierarchy Root

In the 'Asset Hierarchy Root' field, click the ellipsis button (...) and select the STEP ID of the root folder under which the Asset Importer will look for asset matches. This field is **mandatory**.

This option is based on a node picker where the user can select or search for a classification in STEP or type the name in the field and the typeahead search will be displayed.

2. Match on

In the 'Match on' field, define how to match assets to existing assets via the dropdown list. The default value 'Asset Name' will be selected from the dropdown list. This field is **mandatory**.

Asset Matcher

Asset Matcher

> Asset Matcher Hierarchy Root	Assets (AssetsRoot)
> Match on	Asset Name
> File Name Match Expression	ID
> Match Template	Asset Name File Name
> ID Template	
> Name Template	\$1
> Multiple Matches Found	Error on record

Options include:

- ID: Match asset filename to STEP ID
- Asset name: Match asset file name to STEP Name
- File Name: Match asset file name to Filename metadata attribute in STEP

Images & Documents | References | Referenced By

Description

Name	Value
> ID	111683
> Name	Acme Anvil
> Object Type	Product Image
> Revision	1.2 Last edited by USER4
> Approved	✓ Approved on Mon Jan
> Translation	Not Translated
> Path	Classification 1 root/Asset

System Properties:

Name	Value
> Filename	abc Acme Anvil.png

Note: If the Match template filters out the file extension, matching by File Name is not possible.

3. File Name Match Expression

The 'File Name Match Expression' field is used in conjunction with the 'Match Template' field to match assets based on their file names via a regular expression. The default value with a regular expression – `(.*)\.*` will be populated for this field. This option is used to define match groups to be referenced in the Match Template, defined by the parentheses. This field is **mandatory**. If left empty, the 'Next' button will be disabled to indicate this field will need to be filled out.

Note: Each group of parentheses indicates a match group. For more information on match groups, see the **Grouping** section of the **Regular Expression** topic.

Examples:

(.*)\.(.*)

- Indicates that the asset file name contains zero or more characters, followed by a period (.), followed by zero or more characters
- May be used to isolate the file name and exclude the extension - 12345.jpeg
- Finds any file with any extension
- Indicates a single match group, which would necessitate a corresponding Match Template entry of '\$1'

4. Match Template

In the 'Match Template' field, specify which match group (or combination of match groups) to use for matching assets via a regular expression. Populate with a dollar sign symbol (\$), followed by a whole number to indicate a match group. The default value with a regular expression \$1 is populated for this field. The first set of parentheses in the File Name Match Expression field is assigned '1,' the second '2,' and so on. This field is **mandatory**.

Examples:

- \$1 - Match only on the first match group identified in the regular expression
- \$1.\$2 - Match on the first match group identified in the regular expression, followed by the second match group, with the two match groups separated by a period (.)

5. ID Template

In the 'ID Template' field, use a regular expression to specify how the STEP ID of an asset should be set if no match can be found and creation of new assets is allowed.

- This is an **optional field** that should be left blank if you want STEP to auto generate the ID.
- Populate with '\$' plus the number of the match group (parentheses set in the File Name Match Expression) that should be used to create the STEP ID.
- Can be combined with static text to form the template

Examples:

- \$1 - Create the STEP ID using the value identified in the first match group from expression
- asset-\$1 - Create the STEP ID using the value identified in the first match group from the expression, prefixed with 'asset-'

6. Name Template

- In the 'Name Template' field, use a regular expression to specify how the STEP Name of an asset should be set if no match can be found, and creation of new assets is allowed.
- Though optional, it is recommended to populate this field. Otherwise, the STEP Name of the asset will be left blank.
- Populate with '\$' plus the number of the match group (parentheses set in the File Name Match Expression) that should be used to create the STEP Name.

Example:

- \$1 - Create the STEP Name using the value identified in the first match group from the expression.
- Logo.\$1 - Create the STEP Name using the value identified in the first match group from the expression, prefixed with 'Logo'.

7. Multiple Matches found

In the 'Multiple Matches found' dropdown field, select which method to use when dealing with multiple matches.

Asset Matcher	
Asset Matcher Hierarchy Root	Assets (AssetsRoot)
Match on	Asset Name
File Name Match Expression	(.*).\.*
Match Template	\$1
ID Template	
Name Template	\$1
Multiple Matches Found	<div style="border: 1px solid red; padding: 2px;"> Error on record Error on record Create new asset Replace content on all matches </div>

Default value 'Error on record' will be populated for this field. Options include:

- 'Error on record' - This option will log an error for the current asset and the Asset Importer will proceed to the next asset for import.
- 'Create new asset' - This option will cause the Asset Importer to attempt to create a new asset.
- 'Replace content on all matches' - This option will cause the Asset Importer to replace the content on all matching assets with the content of the file being imported.

Note: This requires 'Allow content replace' to be set to 'Yes' in the Content Importer settings. Using this setting can potentially change a large number of assets and should be considered carefully. If 'Allow content replace' is set to 'No' an error will be logged and the Asset Importer will proceed with the next file to import.

Example:

An example is provided to demonstrate how the File Name Match Expression, Match By, and Match Template fields are used in combination to yield the desired match results.

Consider the following configuration loading an asset with the file name 12345.tif.

Asset Matcher	
Asset Matcher	Asset Matcher
> Asset Matcher Hierarchy Root	Assets (AssetsRoot)
> Match on	Asset Name
> File Name Match Expression	(.*)\.*
> Match Template	\$1
> ID Template	\$1
> Name Template	\$1
> Multiple Matches Found	Error on record

The Asset Importer will identify '12345' as the match group and will search STEP for an existing asset with the STEP Name of '12345' within the Assets hierarchy.

If the asset is found, the existing asset will be replaced by the new file.

If no asset exists under the Assets folder (or any child folders) with the STEP Name '12345', a new asset will be created. The STEP Name and ID of this asset will be '12345.'

Placement of the asset in STEP is determined by the **Hierarchy Builder** configuration.

Content Importer

By configuring the Content Importer, users can define basic rules for importing assets and their content. The default (and only) option is 'Standard Asset Content Importer.'

Note that some fields are optional.

Content Importer	
Asset Importer	Asset Content Importer
> Allow Create Asset	<input checked="" type="checkbox"/>
> Allow Content Replace	<input checked="" type="checkbox"/>
> Apply Image Conversion	JPG, 72dpi (lowres-jpeg, cached)
> Asset Object Type	Product Image (ProductImage)
> Import Independently of Dimension	<input type="checkbox"/>

When selecting the Standard Asset Content Importer, the following must also be specified, noting that some fields are required while others are optional.

1. Allow Create Asset

'Allow Create Asset' is a required parameter that determines whether or not the Asset Importer can create new assets.

- **Select the checkbox** if creation of new assets and replacement of existing assets should be allowed.
- **Uncheck the checkbox** if replacement of existing assets is allowed, but creation of new assets is not allowed.

2. Allow Content Replace

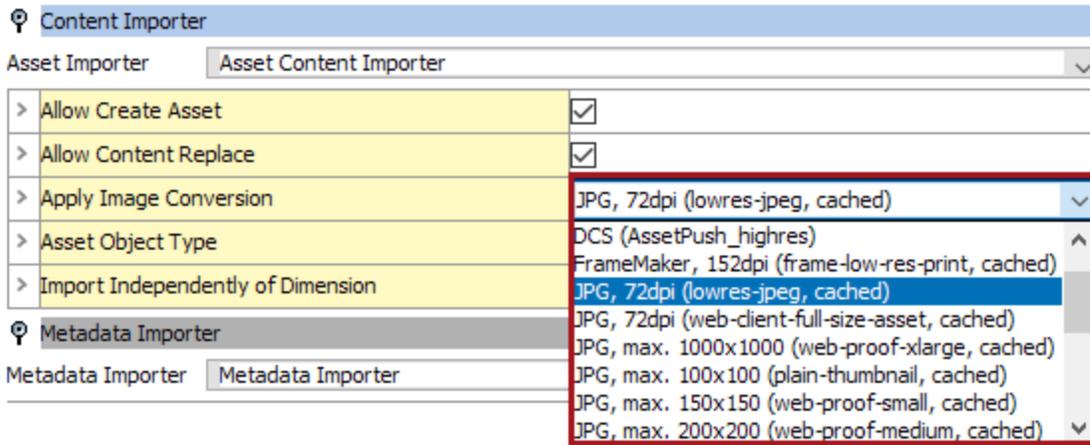
'Allow Content Replace' is a required parameter that determines whether a new asset can replace the content of an existing asset in STEP when a match is found via the Asset Matcher configuration.

For more information, see the **Asset Matcher** section of the documentation.

- **Select the checkbox** if the content of an existing asset in STEP should be replaced when a new asset is provided when it meets the matching criteria.
- **Uncheck the checkbox** if the content of an existing asset in STEP should not be replaced when a new asset is provided that meets the matching criteria. This option will create an error log whenever a replacement is attempted and fails.

3. Apply Image Conversion

The 'Apply Image Conversion' field indicates if the image content should be converted into a different format. Use the dropdown selector to choose the desired image conversion configuration.



- By default this parameter is set to **None**, as it does not apply to non-image files. The asset content will be imported as the original import file.
- The available image conversion configurations will be listed next, indicating which image conversion should be applied during import.

User-created as well as custom image conversions are displayed as one list. This option only applies to image files and will be ignored during the import of any non-image assets which cannot be converted into a different format.

4. Asset Object Type

'Asset Object Type' is an optional field that assigns a specific object type available in STEP to imported assets. For the FAB-DIS import format, this also requires a property setting in the sharedconfig.properties file. See the **Prerequisites** section of the **FAB-DIS Import Format** or the **FAB-DIS Import Workbench Configuration** topics in the **Data Exchange** documentation.

If 'Asset Object Type' is left blank, STEP will automatically provide imported assets with an appropriate object type. For the FAB-DIS format, it is recommended that this parameter be set so that there is no room for error.

Note: The object type must be configured to accept the MIME Types included in the import.

System Setup

- Business Rule Example
- Configuration
- Export Manager Configuration
- GDSN Receiver CIN Sample
- GDSN Receiver XSD
- GDSN XSD
- Icon
- Illustration
- Import Manager Configuration
- Installation Manual
- Logo
- MSDS
- Owners Manual
- Product Image**
- Product Video
- RuleSet
- Transformation Lookup Table
- Unknown / Undefined
- XML File
- Basic Object Types

Product Image - Object Type

Description	
Name	Value
ID	ProductImage
Name	Product Image
Last edited by	2016-09-09 09:49:46 by USER6
Name Pattern	
ID Pattern	[id]
Icon	
MIME Types	image/tiff image/tif application/postscript application/vnd.ms-powerpoint image/png image/*
Dimension Dependencies	
Reference Target Lock Policy	Strict
Calculated Asset File Name	ProductImage-Product Image

5. Import Independently of Dimensions

'Import Independently of Dimensions' is a required field that determines whether dimension dependencies on images should be ignored or honored during import.

Note: This field is unavailable if the images and documents do not have dimensional dependencies.

System Setup

- Units
- Users & Groups**
 - AdminPortal
 - Asset MGR
 - Brand
 - Brand Associate
 - Brand Managers
 - Buyer Group
 - Catalog Flagging
 - ClientB Project Mgrs
 - Creative Group
 - Data Steward
 - Data Steward Create
 - DTP Managers
 - DTP Operators No Public

System Settings

System Settings	
Classification Hierarchy Settings	
Image & Document Settings	
Dimension Dependencies	Language;
Store assets and DTP documents in	Database
DTP asset source	Asset Push
Pregenerate thumbnail cache on upload	Yes
Disable auto-cleanup of thumbnail cache	No
Transformation Lookup Tables follow asset dimension dependency	N
Asset Import Compatibility Mode	Advanced

This setting is only relevant if the above configuration is populated with a dimension dependency, and may be populated with either 'Yes,' signaling that dependencies do exist, or 'No,' means that no dependencies exist.

- This field will be **disabled** if the dimension dependency for images and documents in the system settings is not populated.
- **Select the checkbox** if assets should be imported independently of dimension specifications, meaning that all assets will be available in all contexts.
- **Uncheck the checkbox** if assets should be imported only into the context set in the Configure Endpoint context selection.

Metadata Importer

When importing assets, two types of metadata exist for assets:

- STEP automatically captures a pre-defined set of metadata (which varies by file type) from EXIF (Exchangeable Image File Format) and XMP (Extensible Metadata Platform). This metadata exists within asset files (e.g., images, movies, sound files, etc.). Open source third-party tools are able to read this metadata. Once imported into STEP, certain pieces of this asset metadata are displayed in the asset editor under the System Properties flipper. These values cannot be modified.
- By configuring the Metadata Importer with field mappings as defined below, users can create rules for writing additional asset metadata values provided in a delimited text file. The user defined metadata is displayed in the asset editor under the Description flipper. These values can be modified.

Considerations

During import, the following elements are compared: the EXIF data extracted from the asset, the file name in the metadata file, and the file name of the actual asset. For the asset to be uploaded correctly (including the metadata and references assigned to it), all three elements must match, as illustrated below:

1. The 'File Type' metadata included within the asset, as seen using an external tool. This information is captured by the camera or program used to create the image and cannot be changed manually.

```

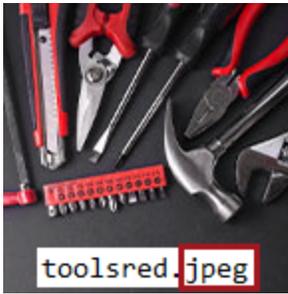
---- ExifTool ----
ExifTool Version Number   : 10.61
---- File ----
File Name                  : toolsred.jpeg
Directory                  : C:/Users/Desktop
File Size                  : 9.2 kB
File Modification Date/Time : 2019:01:09 15:06
File Access Date/Time     : 2019:01:09 15:06
File Creation Date/Time   : 2019:01:09 15:06
File Permissions           : rw-rw-rw-
File Type                   : JPEG
File Type Extension        : jpg
MIME Type                  : image/jpeg
  
```

2. The extension on the file name within the user-defined metadata delimited text file.

```

File Edit Format View Help
Filename,Product,Reference,Title,Photographer,PhotoCategory
toolsred.jpeg,271270,PrimaryImage,Red Tool Grp,Pete Duff,Catalog
  
```

3. The extension of the actual asset file name.



If the asset is new, it is created and the user-defined metadata is written on the asset. If the asset already exists in STEP, based on the configuration settings, it can be updated, and the metadata is updated as well.

The following scenarios result in the background process failing, reporting that the asset file is not found and cannot be imported:

- No asset file in the ZIP file matches the file name identified in the user-defined metadata delimited text file. This includes a mismatch between the file extensions being compared with the file type.
- The extension on the asset file does not match the extension reported as the File Type within the asset metadata, as shown in the EXIF data image below.

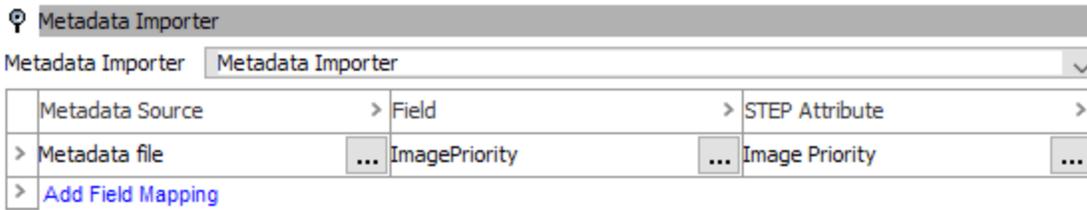
The asset is a JPG, however, a user has manually updated the file name to a TIFF extension. The additional EXIF data cannot be changed manually, and so the elements being compared will not match, and the import will fail.

---- ExifTool ----		---- ExifTool ----	
ExifTool Version Number	: 10.61	ExifTool Version Number	: 10.61
---- File ----		---- File ----	
File Name	→ : sunflower.jpg	File Name	→ : sunflower.tiff
Directory	: C:/Pictures	Directory	: C:/Pictures
File Size	: 8.9 kB	File Size	: 8.9 kB
File Modification Date/Time	: 2019:02:21 12:	File Modification Date/Time	: 2019:02:21 12:
File Access Date/Time	: 2019:02:21 12:	File Access Date/Time	: 2019:02:21 12:
File Creation Date/Time	: 2019:02:21 12:	File Creation Date/Time	: 2019:02:21 12:
File Permissions	: rw-rw-rw-	File Permissions	: rw-rw-rw-
File Type	: JPEG	File Type	: JPEG
File Type Extension	: jpg	File Type Extension	: jpg
MIME Type	: image/jpeg	MIME Type	: image/jpeg

Asset Metadata

Asset metadata attributes can be found in System Setup under Attributes and then System Attributes (ID=Uncategorized).

By default, no field mappings are defined, meaning that no additional metadata import is required. In the image below, the 'ImagePriority' metadata attribute is mapped to the configuration.



If you are not importing additional metadata and/or EXIF/XMP data, there is no need to change the default configuration, which contains no field mappings.

The following options are available in the 'Metadata Importer' parameter dropdown:

- Metadata Importer - uses the field mappings to import metadata to attributes on the asset.
- Asset and Reference Metadata Importer - uses the field mappings to import metadata on the reference between the product and the asset. When the mapped attribute is valid on the reference, the metadata is written on the reference. If the attribute is only valid on the asset, the metadata is written to the asset. If the attribute is valid on both the reference and the asset, the metadata is only written to the reference.

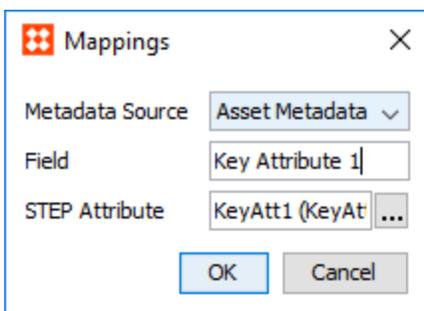
To retain the mapped metadata when STEP cannot access the asset (i.e., due to an incorrect file name or blocked access to the URL), an asset placeholder can be created. Use the 'Allow create asset without content' checkbox available when configuring an Asset Importer IIEP (as defined in the **IIEP - Configure Asset Importer Processing Engine** topic in this guide) or in a FAB-DIS Importer IIEP (as defined in the **FAB-DIS Import Workbench Configuration** topic in the **Data Exchange** documentation).

Additional custom metadata importer plugins can be created to extend and modify the metadata import functionality further. For more information, consult your Stibo Systems representative.

Mapping Metadata Fields

1. To map metadata fields to STEP attributes, click **Add Field Mapping** link.
2. A new row of options appears which allows the user to specify a new field mapping.
3. **Metadata Source**

In the dialog that displays, select a metadata source from the 'Metadata Source' dropdown. Options for this field include: a **metadata import file** or a **metadata property** contained within the asset file itself (from EXIF or XMP data).



- Select 'Metadata file' to map a field specified in the metadata import file to a STEP attribute. For example when mapping metadata from a FAB-DIS file to either the asset or the reference.

When configuring this option for an IIEP that uses the Asset Importer processing engine, the Metafile Receiver or Zip with Metafile Receiver option must also have been selected as the Receiver part of the corresponding IIEP configuration. For more information, see the **IIEP - Configure Asset Importer Processing Engine** documentation.

- Select 'Asset Metadata' to map a metadata property of the asset to a STEP attribute.

4. Field

In the 'Field' parameter, specify the name of the field to map. This field is **required**, and an empty value will result in an error message.

5. STEP Attribute

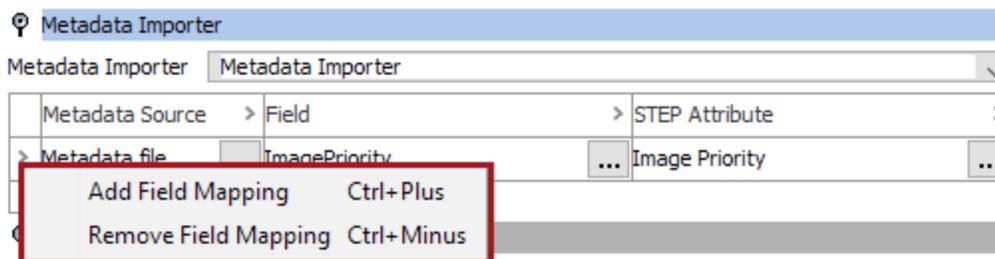
In the 'STEP Attribute' parameter, click the ellipsis button (...) and select a valid attribute for which the specified metadata info will be inserted. This field is **required**, and an empty value will result in an error message.

When configuring this step for the first time, consider setting the 'AssetImporter.MetaDataImporter.DumpAssetMetaData' property in sharedconfig.properties to 'true.' This property enables the Metadata Importer to dump the metadata from imported assets into the server log and into the execution report of background processes started by the IIEP, allowing users to see metadata on the image. It is not recommended to keep this property set to true once the configuration has been properly tested, as it can eventually create a large amount of entries in the step.0.log.

Note: The metadata is not reported in background processes started from Web UI.

Remove Field Mapping

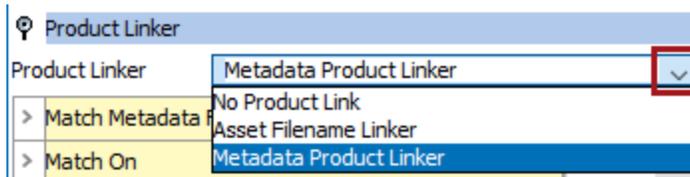
To remove any field mapping configurations, right-click on the configuration and select Remove Field Mapping (Ctrl+Minus) option as shown in below.



Product Linker

The Product Linker determines if and when incoming assets should be linked to related products in STEP, how those products should be identified, and which reference type should be applied.

The Product Linker configuration has three options: No Product Link, Asset Filename Linker, and Metadata Product Linker. Each option is defined within this topic.



The default setting includes no product linking. In this case, no adjustments need to be made to the flipper.

If product linking is required, it can be done via the asset file name or metadata, and the appropriate option should be selected and all corresponding configuration options completed as defined below.

A number of the parameters in this step may require the use of regular expressions. For more information, see the **Regular Expression** section of the **Resource Materials** online help.

No Product Link

If assets should not be matched to products, select 'No Product Link' from the 'Product Linker' dropdown. This is the default selection, and no additional configuration is required.



Asset Filename Linker

By configuring the Asset Filename Linker, imported assets can be linked to products using a series of configuration options and regular expressions in STEP by matching the asset's file name to the STEP ID, Name, or Unique Key of the existing product.

Note: Take care in considering how the File Name Match Expression, Match On, and the Match Template parameters work together.

Product Linker	
Product Linker	Asset Filename Linker
> File Name Match Expression	(.*)\.*
> Match On	Key
> Key	Key 1
> Match Template	\$1
> Match Below Product Root	Head Wear (20433)
> Reference Type	Primary Product Image
> Allow Multiple Products	<input checked="" type="checkbox"/>

The Asset Filename Linker dropdown option should be specified with following parameters, some of which are mandatory.

1. File Name Match Expression

In the 'File Name Match Expression' parameter, write a regular expression that defines which match groups should be used to identify existing products. These same match groups should be specified in the 'Match Template' parameter detailed below. This is a **required** field. Default value with a regular expression – (.)\.* will be populated for this field. These are used to define match groups to be referenced in the Match Template, defined by the parentheses (e.g., each set of parentheses indicates a match group).

Example:

- (.)\.*
- Indicates that the asset file name contains zero or more, followed by a period (.), followed by zero or more characters
- Used to isolate the file name and exclude the extension - 12345.jpeg
- Finds any file with any extension
- Indicates a single match group, which would necessitate a corresponding Match Template entry of '\$1'

2. Match On

In the 'Match On' parameter, specify how the system identifies existing products in STEP. Options include: ID, Name, and Key (requires the Key field to be populated). This is a **required** field. The default value ID will be selected from the dropdown field.

Options include:

- ID: Match template value to the STEP ID of a product
- Name: Match template value to STEP Name of a product
- Key: Match template value to a particular Key value on a product

Product Linker configuration window showing the following settings:

- Product Linker: Asset Filename Linker
- File Name Match Expression: (.*)\.*
- Match On: Key
- Key: ID, Name, Key (highlighted)
- Match Template: Key
- Match Below Product Root: ...
- Reference Type: Primary Product Image
- Allow Multiple Products:

3. Key

In the 'Key' parameter, select the STEP ID of the key from the dropdown selector for use in matching. The dropdown menu will list STEP ID of all Keys available in the system. This field is only required if 'Key' was selected in the previous step. This field will be disabled if Match On is Name or ID.

Product Linker configuration window showing the following settings:

- Product Linker: Asset Filename Linker
- File Name Match Expression: (.*)\.*
- Match On: Key (indicated by a red arrow)
- Key: Key 1, Key 2, Part_Number, Customer_Number, SupplierPartNumber 1, Supplier Part Number, ManufacturerName, Brand
- Match Template: Key 1
- Match Below Product Root: Part_Number
- Reference Type: Customer_Number
- Allow Multiple Products: SupplierPartNumber 1
- Approver: Supplier Part Number, ManufacturerName, Brand

For more information on Keys, see the **Unique Keys** documentation.

4. Match Template

In the 'Match Template' parameter, specify which match group(s) to use for identifying products via a regular expression. These match groups must also appear in the 'File Name Match Expression' field. This is a **required** field. Default value with a regular expression \$1 is populated for this field. Populate with a dollar sign symbol (\$), followed by a whole number to indicate a match group. The first set of parentheses in the File Name Match Expression field is assigned '1', the second '2', and so on.

Example

- \$1 - Match only on the first match group identified in the regular expression
- \$1.\$2 - Match on the first match group identified in the regular expression, followed by the second match group, with the two match groups separated by a period (.)

5. Match Below Product Root

In the 'Match Below Product Root' parameter, click the ellipsis button (...) and select the STEP ID of the root folder under which the importer will search for product matches. This is a **required** field. A node picker dialog will be presented to help the user choose a product hierarchy folder. Only product objects will be presented in the node picker

Note: For Supplier Users, they are only allowed to have access to their specified product structure in the supplier hierarchy. This ensures protection from other suppliers. Additionally, the Match Below Product Root property will need to be adjusted to match with the dedicated root supplier product folder for the particular supplier user.

6. Reference Type

In the 'Reference Type' parameter, specify the reference type that links the imported asset with the product via the dropdown selector. This is a **required** field.

- Default value - Primary Product Image will be chosen from dropdown selector. Populate with the STEP ID of the reference type. Only asset to product reference types will be presented in the dropdown selector.

7. Allow Multiple Products

The 'Allow Multiple Products' parameter determines whether or not the Asset Importer can link the same asset to multiple products. Checking the box indicates that the Asset Importer can make such a link. Leaving the box unchecked indicates that an imported asset should only be linked to one product. Checking the checkbox indicates that the importer can make such a link – assets can be linked to multiple products if more than one match is found.

Keep in mind that there can be more than one result since more than one product can have the same name.

Note: The 'Allow multiple references' setting on the reference must be set to 'Yes'.

The screenshot shows the 'System Setup' interface. On the left is a tree view of system components, with 'Installation Manual' selected under 'Image and Document Reference Types'. On the right is a configuration panel for the selected reference type. The 'Allow multiple references' checkbox is checked and highlighted with a red box.

Reference Type		Validity	Log
Description			
Name	>	>	Value
ID	>		InstallationManual
Name	>		Installation Manual
Last edited by	>		2017-08-15 12:39:54.0 by USER
Externally Maintained	>		No
Dimension Dependencies	>		Language;
Allow multiple references	>		Yes
Mandatory	>		No
Inheritance	>		Inherited
Completeness Score	>		123
Purpose	>		abc

Metadata Product Linker

By configuring the Metadata Product Linker, imported assets can be linked to products in STEP via information stored in a metadata file.

Note: Using this option requires that the Metafile Receiver or Zip with Metafile Receiver option must be selected as part of the corresponding IIEP configuration. For more information, see the **IIEP - Configure Asset Importer Processing Engine** documentation.

Product Linker	
Product Linker	Metadata Product Linker
> Match Metadata Field	Product
> Match On	ID
> Key	
> Match Below Product Root	Head Wear (20433)
> Reference Type Field	
> Default Reference Type	Primary Product Image
> Allow Multiple Products	<input type="checkbox"/>

When selecting the Metadata Product Linker option, the following parameters need to be specified. As indicated below, some of the parameters are required while others are optional.

1. Match Metadata Field

In the 'Match Metadata Field' parameter, enter the column heading of the metafile field that contains the value for the product match criteria. The specified heading must contain either the STEP ID, STEP Name, or Key value of a product. This is a **required** field.

2. Match On

In the 'Match On' parameter, specify how the system identifies existing products in STEP. The default value for this dropdown field is ID. This is a **required** field. Options include:

- ID: Match template value to the STEP ID of a product
- Name: Match template value to STEP Name of a product
- Key: Match template value to a particular Key value on a product

3. Key

In the 'Key' parameter, choose the STEP ID of the key from the dropdown selector for use in matching. This field is only required if 'Key' was selected in the previous step. This dropdown will list the STEP IDs of all Keys available in the STEP system. This key is used when the metafile does not contain a key indicator.

4. Match Below Product Root

In the 'Match Below Product Root' parameter, click the ellipsis button (...) and select the STEP ID of the root folder under which the importer will search for product matches. This is a **required** field. A node picker dialog will be presented to help the user choose a product hierarchy folder. Only product objects will be presented in the node picker.

5. Reference Type Field

In the 'Reference Type Field' parameter, enter the column heading of the metafile field that contains the STEP ID of the reference used to link the imported asset to the product. This parameter is **mandatory**. If the specified reference type is missing in the metadata file, the default reference type (set in the next step) will be used.

6. Default Reference Type

In the 'Default Reference Type' parameter, specify the reference type that links the imported asset with the product. A default value 'Primary Product Image' is populated from the dropdown selector. This field is **mandatory**. As indicated in the previous step, this parameter is used when the metafile **does not** contain a reference indicator. The dropdown selector will be presented to help the user choose a reference type. Only reference types will be presented in the node picker.

7. Allow Multiple Products

The 'Allow Multiple Products' parameter determines whether or not the Asset Importer can link the same asset to multiple products. Leaving the box unchecked indicates that an imported asset should only be linked to one product. In this case, if multiple product matches are found, an error will be logged, and the asset will not be linked to any products. Checking the box indicates that the importer can make such a link; assets can be linked to multiple products if more than one match is found.

Keep in mind that more than one product can reference the same asset.

The Asset Importer supports metadata files with multiple line entries for the same asset, to link the asset to different products. In this scenario, the 'Allow multiple references' setting on the reference must be set to 'Yes'.

The screenshot shows the 'System Setup' interface. On the left is a tree view of system components, with 'Installation Manual' selected under 'Image and Document Reference Types'. The main panel displays the configuration for the selected reference type. The 'Allow multiple references' parameter is highlighted with a red box and is set to 'Yes'.

Reference Type		Validity	Log
Description			
Name	>	>	Value
ID	>		InstallationManual
Name	>		Installation Manual
Last edited by	>		2017-08-15 12:39:54.0 by USER
Externally Maintained	>		No
Dimension Dependencies	>		Language;
Allow multiple references	>		Yes
Mandatory	>		No
Inheritance	>		Inherited
Completeness Score	>		123
Purpose	>		abc

Approver

The Approver determines whether assets, references between products and assets, and whether new asset folders should be automatically approved by the Asset Importer. By default, 'Standard Asset Approver' is the only configuration option available for the Approver.

Approver	
Approver	Asset Approver
> Approve Imported Asset	<input type="checkbox"/>
> Approve Created Classifications	<input type="checkbox"/>
> Approve References	<input type="checkbox"/>

1. Approve Imported Asset

- If the 'Approve Imported Asset' parameter checkbox is selected, the asset will be approved upon import. As the parental classification is already approved (or 'Approve Created Classifications' box is checked), the asset will be approved.

If the parental Classification has never been approved, the asset will not be approved. An error will be logged with an explanation as to why the asset could not be approved.

- If the 'Approve Imported Asset' checkbox is left unchecked, the asset will not be approved upon import. This option is typically used when the asset is initiated into a workflow upon import.

2. Approve Created Classifications

- If the 'Approved Create Classifications' checkbox is checked, the classification in which the asset is placed will be approved upon creation. Additionally, if imported assets are to be approved, this should be checked.
- If the box is left unchecked, the classification in which the asset is placed will not be approved upon import. Assets will not be approved as part of the import if this is unchecked.

3. Approve References

- Check the 'Approve References' parameter checkbox if the imported asset has a product-to-asset reference (s) to be created, and references should be approved upon import.

Newly created assets must be approved upon import for this configuration to take effect. Additionally, this acts as a partial approval for the products being linked.

Note: The referred product must have been approved at some point in the past, otherwise the reference cannot be approved.

- If the referred product has never been approved, the reference will not be approved either. An error will be logged with an explanation as to why the reference could not be approved.

Trying to re-import an existing asset with the same reference and same product will succeed. However the reference will not be approved. This limitation is due to the fact that the reference is not recreated and users are only allowed to approve links that they created themselves. In this case, STEP cannot differentiate

between a link that was created by the Asset Importer previously and a link which was created by the user manually.

- If the **Approve References** checkbox is left unchecked the product to asset references will not be approved upon import. This option is typically used when the asset is initiated into a workflow upon import.

Note: The approving STEP user should be the same user who is performing the import via Web UI, or the user that has been authenticated through Web API. If importing via integration endpoint, the executing user specified by the IIEP will be used.

Auto Purger

By configuring the Auto Purger, users can define how many revisions of a particular asset should be retained. By default, the standard 'Asset AutoPurger' is the only configuration option available for the Auto Purger.

Auto Purger	
Auto Purger	Asset AutoPurger
> Max Revision Count	10000000

The only configurable parameter for this step is the 'Max Revision Count.'

Max Revision Count

- This field determines how many revisions of an asset can be retained.
- If the number of revisions exceeds the number specified in this parameter, older versions will be deleted every time a new revision is made.
- By default, this value is set to '10000000.'
- If previous revisions should be purged set this field to any integer value, indicating the number of revisions that should be retained. All earlier versions of the asset will be automatically deleted from STEP.

Workflow Handler

By configuring the Workflow Handler, imported assets can be automatically initiated into a workflow. Additionally, imported assets can trigger a transition in an existing workflow for either the asset itself or the product that is linked to the imported asset. By default, 'Standard Asset Workflow Handler' is the only configuration option available for the Workflow Handler.

Because this is an optional step, all configuration options are left blank by default, meaning that no workflows or transitions will be initiated via the import. All parameters detailed below are **optional**.

The screenshot below shows an example of a configuration involving both asset and product workflows.

Workflow Handler		
Workflow Handler	Asset Workflow Handler	
> New Asset Workflow	Sample Workflow with Parallels (SampleWorkflow)	...
> Asset Update Workflow		...
> Transition from Asset Workflow State	SampleWorkflow.AssetUpdate	...
> Product Update Workflow		...
> Transition from Product Workflow State	SampleWorkflow.ProductUpdate	...

Note: If no workflow initiations or transitions are required for products or assets as part of the import, there is no need to change the default (blank) configuration.

When selecting the Standard Asset Workflow Handler, the following may also be specified, with each field being **optional**.

1. New Asset Workflow

In the 'New Asset Workflow' parameter, click the ellipsis button (...), and select the STEP ID of a workflow that handles new asset onboarding.

- The workflow specified will be initiated for each new asset created as part of an upload.
- The node picker dialog with Workflow objects will be presented for the user to choose the required workflow.

2. Asset Update Workflow

In the 'Asset Update Workflow' parameter, click the ellipsis button (...), and select the STEP ID of a workflow that handles updates to existing assets.

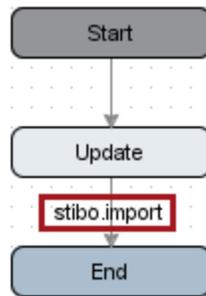
- The workflow specified will be initiated for each **existing asset** included in the upload.
- Node picker dialog with Workflow objects will be presented for the user to choose the required workflow.

3. Transition from Asset Workflow State

In the 'Transition from Asset Workflow State' parameter, click the ellipsis button (...), and select the STEP ID of the desired workflow state.

- The value must be formatted as such: [workflow ID].[State ID].
- Any asset in the specified workflow state that is included in an upload will transition from that state to the next via the 'stibo.import' transition.
- Example: The asset is in the 'Update' state and should be transitioned to the 'End' state upon import of the asset. The Asset update event field is populated with 'AssetUpdate.Update.'

Asset Update (AssetUpdate)



4. Product Update Workflow

In the 'Product Update Workflow' parameter, click the ellipsis button (...), select the STEP ID of a workflow that handles products.

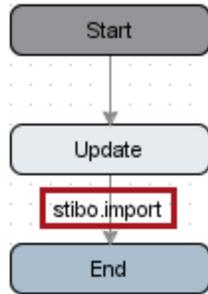
- When a new product to asset link is created via an asset upload, the product which owns the newly created link will be initiated into the specified workflow.
- If such a link already exists, no action will be taken.
- The node picker dialog with Workflow objects will be presented for the user to choose the required workflow that handles products.

5. Transition from Product Workflow State

In the 'Transition from Product Workflow State' parameter, click the ellipsis button (...), and select the STEP ID of the desired workflow state.

- The value must be formatted as such: [workflow ID].[State ID].
- When a new product to asset link is created via an asset import for a product in the specified state, the product will be transitioned from that state using the stibo.import transition.
- Example: The product is in the 'Update' state and should be transitioned to the 'End' state upon successful import of a linked asset. The product update event field is populated with 'ProductAssetUpdate.Update.'

Product Awaiting Asset (ProductAssetUpdate)



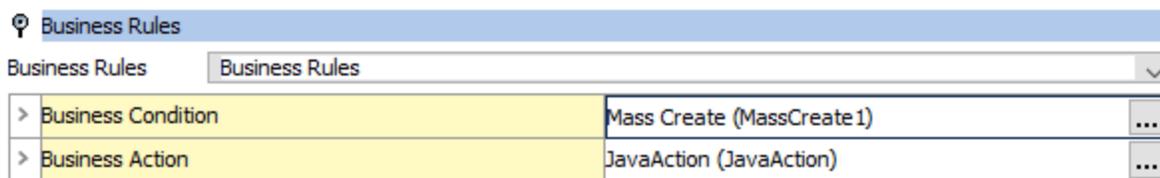
Business Rules

By configuring the Business Rule Handler, business conditions can be set to run during an asset import and may reject assets that fail to meet one or more of the specified conditions (any structure created to support the asset will also be rejected, e.g., a new classification folder to store the asset). Additionally, a business action can be set that performs additional work following import of the asset. By default, 'Standard Business Rule Handler' is the only configuration option available for the Business Rules configuration.

Because this is an optional step, all configuration options are left blank by default, meaning that no business rules will be called as part of the asset upload.

All parameters detailed below are **optional**.

The screenshot below shows an example of a configuration involving both Business Conditions and Business Actions.



Note: If no business rule conditions or actions should be called as part of the import, there is no need to change the default (blank) configuration.

When selecting the Standard Business Rule Handler, the following parameters can be specified:

1. Business Conditions

In the 'Business Condition' parameter, click the ellipsis button (...) and select one or more business conditions that are to be run during asset import.

- Though multiple business condition IDs can be specified, it is recommended practice to include all relevant conditions in *one* business condition.

Error Handling

- If one specified condition fails by returning 'FALSE' or null pointer exception, an error is logged, and the transaction is rolled back. This error handling includes the asset import, as well as the creation of any structures supporting it.

2. Business Action

In the 'Business Action' parameter, click the ellipsis button (...) and select one or more business actions that are to be run following the import of an asset.

- Though multiple business action IDs can be specified, it is recommended practice to include all relevant conditions in *one* business action.
- Business actions are invoked following approvals carried out via the Approver configuration. Because of this, if any changes to data need to be approved, the rule itself must include an approval step.

For more information on the Approver, see the **Approver** section of the **Asset Importer Configuration** documentation.

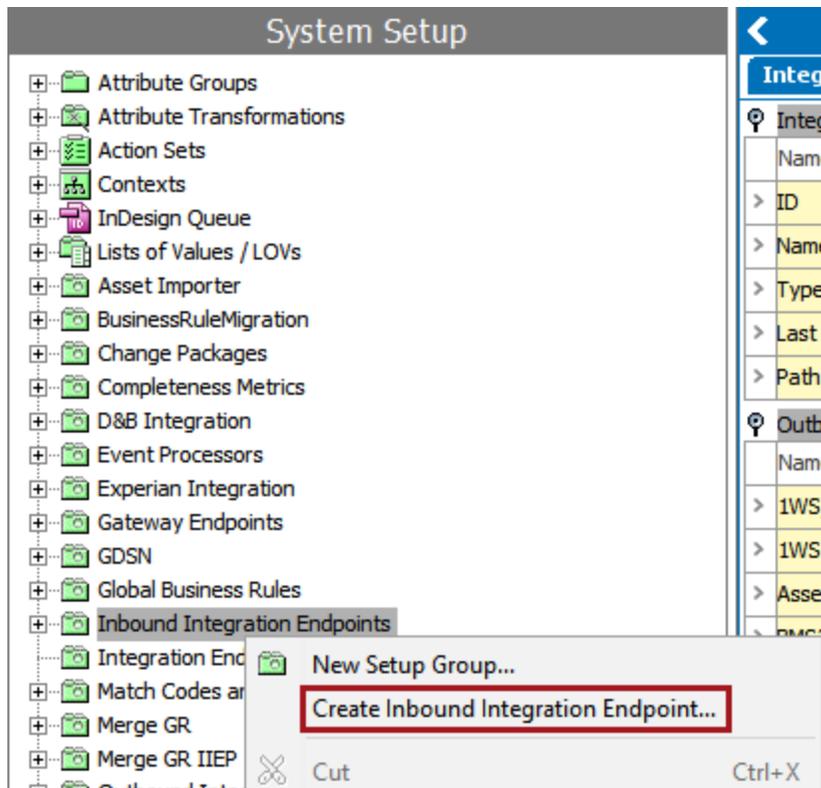
Error Handling

- Errors from all executed business actions will be passed on and logged.
- Null pointer exceptions and other errors caused by business actions will result in the transaction to be rolled back. This error handling includes the asset import, as well as the creation of any structures supporting it.

Asset Importer Inbound Integration Endpoint Configuration

The Asset Importer can be configured using one IIEP for each hotfolder, or using one IIEP to control a hierarchy of hotfolders.

On the System Setup tab, right-click on the inbound integration endpoints node to create an endpoint. Select 'Create Inbound Integration Endpoint...'



Prerequisite

For the FAB-DIS format, to change an imported asset's object type, see the **Prerequisites** section of the **FAB-DIS Import Format** or the **FAB-DIS Import Workbench Configuration** topics in the **Data Exchange** documentation.

Configuration

It may also be necessary to set up an Inbound Integration Endpoint (IIEP) for some of (if not all) of your importer configurations. In order to use an IIEP with Asset Importer, it is recommended to configure the endpoint in the following ways:

1. Identify Endpoint

On the 'Identify Endpoint' step, select a user that has privileges to perform the required functions defined by the hotfolder configuration. It is recommended to create a dedicated STEP user for this purpose so that audit trails can log activity associated with the hotfolder(s). Typically this user should be created with a non-restricted privilege set (e.g., a super user).

Inbound Integration Endpoint Wizard

Steps

- 1. Identify Endpoint**
2. Choose Receiver
3. Configure Endpoint
4. Configure PreProcessor
5. Configure Processing Engine
6. Configure PostProcessor
7. Schedule Endpoint
8. Configure Error Reporter

Identify Endpoint

Endpoint ID: Asset Importer IIEP

Endpoint Name: Asset Importer IIEP

Description: IIEP to import assets using asset importer

User: USER

Back Next Finish Cancel

The system user who is configured to run the integration endpoint will need network security privileges to the application server area where the hotfolder will exist, as well as to the background process area.

For more information on the Identify Endpoint step, see the **IIEP - Identify Endpoints** section of the **Inbound Integration Endpoints** documentation.

2. Choose Receiver

On the 'Choose Receiver' step of the IIEP configuration wizard, select 'Hotfolder Receiver' as the receiver. All the fields must be specified when hotfolder is chosen as receiver.

Inbound Integration Endpoint Wizard

Steps

1. Identify Endpoint
- 2. Choose Receiver**
3. Configure Endpoint
4. Configure PreProcessor
5. Configure Processing Engine
6. Configure PostProcessor
7. Schedule Endpoint
8. Configure Error Reporter

Choose Receiver

Receiver: Hotfolder Receiver

Hotfolder: Asset Import

Keep file after load: Yes

Ignore sub folders: No

In folder: in

Back Next Finish Cancel

Note: The integration endpoint receiver is not the same as the receiver options of the asset importer engine.

For more information on the 'Choose Receiver' step, see the **IIEP - Choose Receiver** section of the **Inbound Integration Endpoints** documentation.

3. Configure Endpoint

On the 'Configure Endpoint' step of the wizard, select 'Asset Importer' as the processing engine and consider the following recommended configurations:

The screenshot shows the 'Inbound Integration Endpoint Wizard' window. On the left, a 'Steps' sidebar lists: 1. Identify Endpoint, 2. Choose Receiver, 3. **Configure Endpoint**, 4. Configure PreProcessor, 5. Configure Processing Engine, 6. Configure PostProcessor, 7. Schedule Endpoint, 8. Configure Error Reporter. The main 'Configure Endpoint' section has the following settings:

- Processing:** Processing Engine is set to 'Asset Importer' and Transactional settings is set to 'Strict'.
- Context:** Workspace is set to 'Main' and Context is set to 'English US'.
- Queue Settings:** Queue for endpoint is 'InboundQueue', Queue for endpoint processes is 'AssetImporter', Maximum number of waiting processes is '1', Maximum number of old processes is '100', Maximum age of old processes is '1m', and Number of messages per background process is '1000'.

At the bottom, there are buttons for 'Back', 'Next', 'Finish', and 'Cancel'.

- The **Transactional settings** parameter should be set to 'Strict' in most cases, which is the most efficient way to process large batches of images. The strict setting disables the **Maximum number of waiting processes** selection as this must be '1' when transactions are 'Strict.'

When you select Strict, also set the **Number of messages per background process** to a high number (e.g., 1000 or greater) to cut down on the overhead of launching multiple background processes.

For more information on transaction settings, see the **Integration Endpoint Transactional Settings** topic.

- The **Workspace** parameter should always be set to 'Main' as data cannot be imported directly into the 'Approved' workspace.

Set if assets should be automatically approved upon import as part of the configuration. This results in the data being imported into the Main workspace, then automatically being reflected in the 'Approved' workspace.

- The configuration of the **Context** parameter largely depends on the dimension dependent setting of the assets. This is a global setting determined in **System Setup** on the Users & Groups System Settings editor:

System Settings		Log
Classification Hierarchy Settings		
	>	
>	Dimension Dependencies	
Image & Document Settings		
	>	
>	Dimension Dependencies	
>	Store assets and DTP documents in	Database
>	DTP asset source	Asset Push

If assets are not dimension dependent (e.g., the above is blank), the selection of context has no impact on the import. Asset content will be identical in all contexts, regardless of the selection made in the Configure Endpoint screen.

If assets are dimension dependent, and asset content should be imported into one specific context only, select that context. This requires a corresponding selection of **No** in the **Import Independently of dimensions** configuration option within the Content Importer configuration.

If assets are dimension dependent, and asset content should be imported independently of context (e.g., available to all contexts rather than only a single one), the selection of context has no impact on the import. This requires a corresponding selection of **Yes** in the **Import Independently of dimensions** configuration option within the Content Importer configuration.

Additionally, ensure that the 'Import Independently of dimensions' setting on the relevant Asset Importer configuration corresponds with the selection made. For more information, see the **Content Importer** section.

- Queue for endpoint:** It is recommended to leave the Queue for endpoint parameter as 'InboundQueue', as there is typically no reason and/or performance benefit to changing this setting. This is used to pick up the message (e.g., initiate processing per schedule).
- Queue for endpoint processes:** It is recommended to set the Queue for endpoint processes parameter to something indicative of asset processes (e.g., AssetImporter), as loading of assets can be intensive. This selection does the actual processing of each message (e.g., load the data into STEP).

Note: Setting this as a separate queue prevents competition of resources between asset loading and other inbound processes.

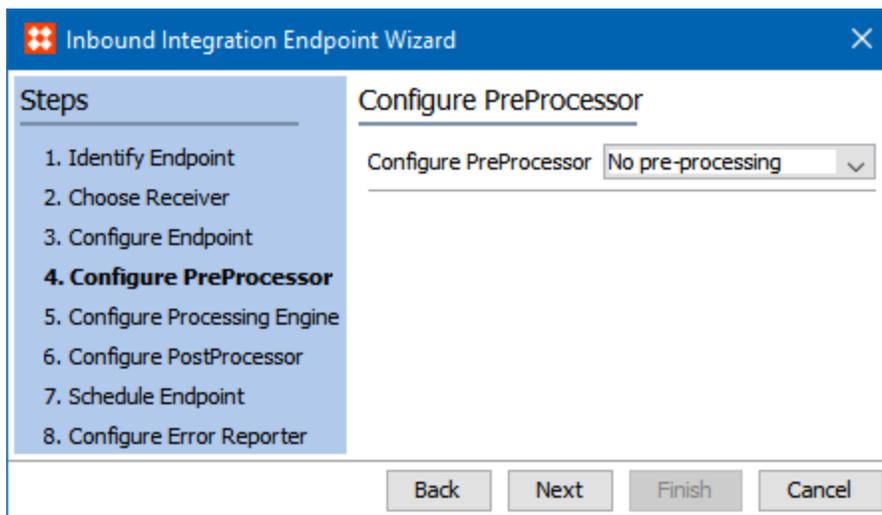
- Maximum number of waiting processes:** The maximum number of waiting processes parameter is automatically set to '1' for Strict transactional settings.
- Maximum number of old processes:** It is recommended to set the Maximum number of old processes parameter to a reasonable number based on the number of processes expected. Setting it too high may cause eventual performance issues. Oldest processes above this number set are automatically deleted.

- **Maximum age of old processes:** It is recommended to set the Maximum age of old processes parameter to '1M' (one month) unless requirements dictate otherwise. Setting too long may cause eventual performance issues.
- **Number of messages per background process:** It is recommended to set the Number of messages per background process parameter to a high number (e.g., 1000 or greater) to cut down on the overhead of launching multiple background processes.

For more information on the Configure Endpoint step, see the **IIEP - Configure Endpoint** section of the **Inbound Integration Endpoints** documentation.

4. Configure PreProcessor

On the 'Configure PreProcessor' step of the wizard, select 'No pre-processing.'



Note: No PreProcessor Configuration is required or supported for the Asset Importer as the component itself is a specific processing engine. The available PreProcessor options depend on the STEP release and your system.

5. Configuring the Processing Engine

On the 'Configure Processing Engine' step of the wizard, select the relevant asset importer configuration. The Configure Processing Engine screen allows the user to select a receiver option, asset import configuration and allows users to create folder overrides, which replace certain aspects of the asset import configuration for sub folders within the hotfolder if desired.

Detailed configuration instructions can be found in the **IIEP - Configure Asset Importer Processing Engine** section of the **Inbound Integration Endpoints** documentation.

6. Configure PostProcessor

On the 'Configure PostProcessor' step of the wizard, select 'No post-processing.'

7. Schedule Endpoint

There are no required or recommended settings for the 'Schedule Endpoint' step.

All parameters in the Schedule Endpoint screen are part of the standard Inbound Integration Endpoint configurations. The endpoint should be scheduled to run regularly, and as often as is needed to efficiently process incoming data.

Important: Consider the time zone of the application server compared to that of the workbench (the client) where the schedule is created or viewed. When scheduling a job, the local time zone is displayed in the workbench, but the time zone of the server is used to run the background process. Although displayed, the time zone of the client is not included in the instruction to the server to run the job. This can cause confusion about when the job will run since the scheduled time is not automatically converted to accommodate potential differences in time zones.

8. Configure Error Report

The Configure Error Reporter screen is used by some endpoint configurations to handle error reporting.

Since the Asset Loader uses a dedicated Notification Handler the general error reporter is not required and should typically be set as 'Not Defined'.

Asset Importer in Web UI

Web UI can utilize Asset Importer for uploading asset content in a number of ways:

- The Upload Asset Action
- The Replace Asset Content button (via the Asset Mid Sized (superseded) or Asset Representation components)
- The Asset Importer Widget

For more information about the Asset Importer Widget, see the **Asset Importer Widget** section of the **Web User Interfaces** documentation.

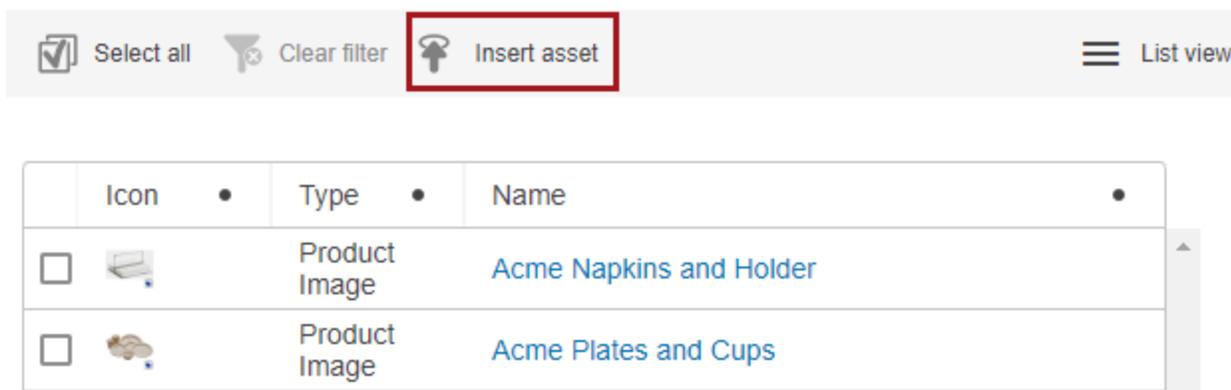
For the FAB-DIS format, to change an imported asset's object type, see the **Prerequisites** section of the **FAB-DIS Import Format** topic in the **Data Exchange** documentation.

Upload Asset Action

When uploading assets via the Upload Asset action, an asset importer configuration must be selected. The configuration will apply its rules against the imported asset and make any necessary changes (or reject it if it fails to meet minimum requirements).

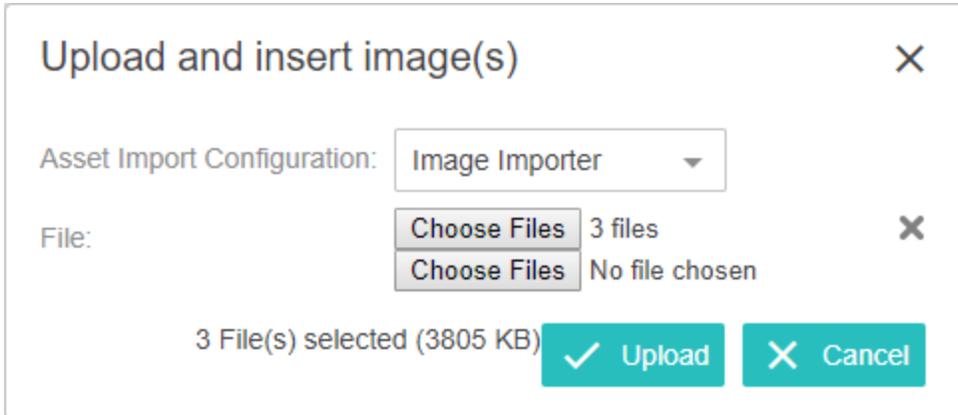
1. Navigate to the relevant Classification folder in Web UI and click the 'Insert asset' button (the Upload Asset action).

Classification List



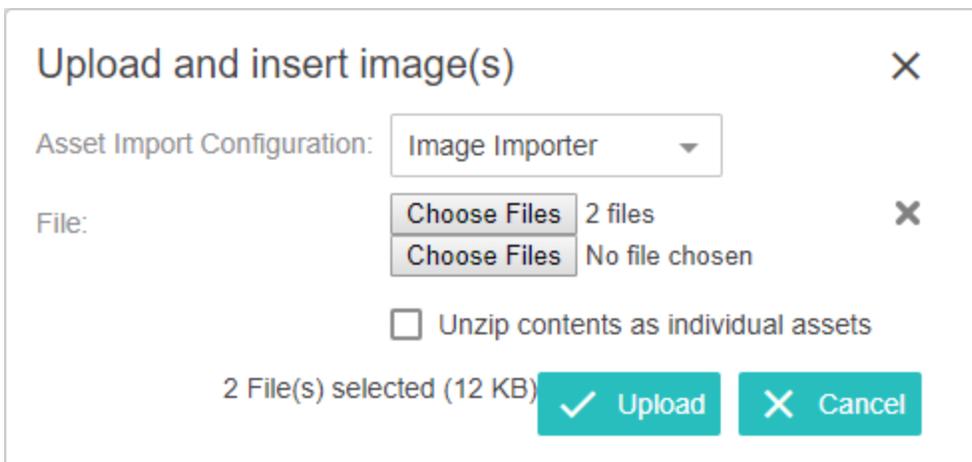
Note: The node this action is performed on does not matter unless the 'Use selected classification for manual imports' option is enabled in the Hierarchy Builder configuration.

2. In the 'Upload and insert image(s)' dialog, select the desired importer configuration from the dropdown menu.

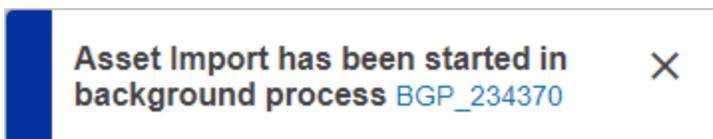


The Upload button is activated only upon choosing the asset for importing.

Note: An asset importer configuration can be specified in the component's configuration, meaning it will not need to be selected upon import.



3. Next, click **Choose File** and select a file to import.
4. Click **Open** once the selection is made. Multiple files can be added by repeating this step. Additionally, these files can be removed by clicking the red 'X' icon.
5. Click **Upload** to initiate the import. A dialog will appear, providing a link to the background process.



Important: Ensure that the Asset Importer configuration allows for the selection of classification folders *when importing assets manually*, otherwise the import will ignore which node this action was performed on and follow the Hierarchy Builder configuration instead. For more information, see the **Hierarchy Builder** section of the **Asset Import** documentation.

Configuring the Asset Import Action in Web UI

Upload Asset Parameters

- **<Select an option>** (default): No predefined asset import configuration will be used for the import, the end-user will be presented with a dialog to choose one of the available asset import configurations
- **Use asset import configuration (NEW):** Allows the Web UI designer to specify an asset import configuration to use for the Upload Asset Action.

Upload Asset Action Properties [go to parent](#)

Component Description This action can be added to a FolderScreen or AssetFolderScreen. It lets the user upload and create an asset in the current classification for the screen e.g. when the screen is shown because a classification is selected in tree for instance. PLEASE NOTE: this control does NOT make it possible to determine asset-id (uses auto-id), name (taken from uploaded file) or object type (determined by mime-type of uploaded file - when possible). In addition it does per default NOT use the vendor system for asset classifications

Custom Icon	<input type="text"/>	<input type="button" value="..."/> <input type="button" value="Reset"/>
Button Label	<input type="text" value="i18n.stibo.UploadAssetAction.Label"/>	
Process Description	<input type="text" value="{Configuration} ({ItemCount} files)"/>	
Context Help	<input type="text" value="i18n.stibo.UploadAssetAction.ToolTip"/>	
Upload Asset Parameters	<input type="text" value="Upload Asset Parameters"/>	<input type="button" value="Edit..."/>
Use Asset Import Configuration	<input type="text" value="<Select an option>"/> <input style="background-color: #007bff; color: white;" type="text" value="Upload Asset Parameters"/>	

Note: If an existing Web UI configuration uses the Upload Asset Parameter and the asset importer is enabled, the Upload Asset Parameter should reset to the default option in the dropdown menu.

If no asset import configuration is selected (the default '<Select an option>' is displayed), the end user will be asked to choose one of the existing asset import configurations during the import as well with the desired file(s) for import.

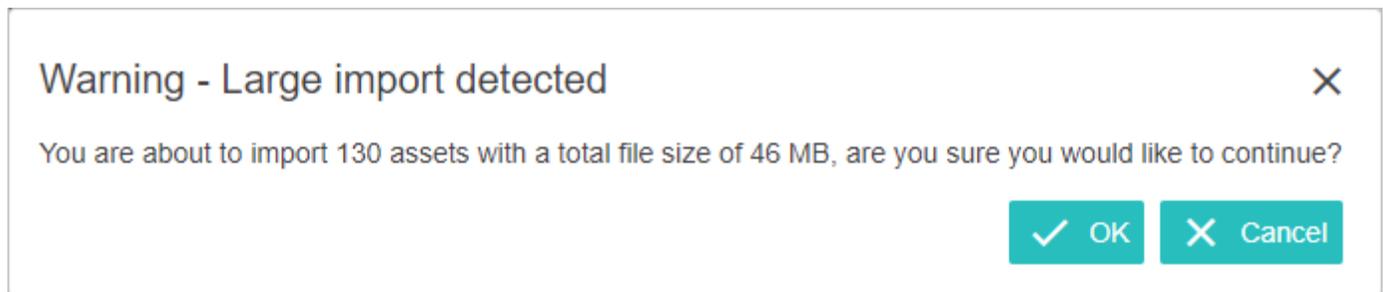
Asset Import Post File Selection

This section describes the file selection and confirmation regardless how files and folders have been selected via Web UI via Asset Import Action.

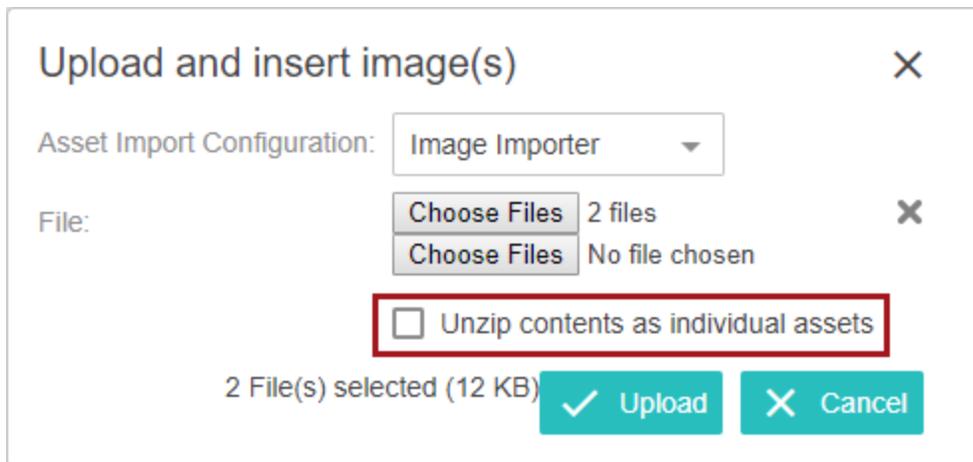
File selection check

A preliminary check based on the files and folder selection executed on the client side will be performed to inform of specific scenarios:

- If the threshold of 100 files or the total import size exceeds more than 100MB, a warning will be displayed informing the user about the magnitude of the import, asking for confirmation to continue the import process



- If a ZIP file is included in the file selection, allow the user to select if its contents should be imported as separate assets or if the ZIP file should be handled as one asset file to be imported



Unzip contents as individual assets:

- Unchecked (default) will import the ZIP file as one asset into STEP
- Checked will extract all of the contents of each ZIP file into a temporary folder on the file server and import each of the containing files separately as asset into STEP

Replace Asset Content

Replace Asset Content behaves similar to the asset import as described in other sections, with the main exception that it does not make sense to execute certain parts of the asset import configuration since the operation will be executed on an existing asset in STEP. Therefore, the Hierarchy Builder and Asset Matcher steps should be neglected during the replace asset content procedure.

Configuring the Replace Asset Content in Web UI

When configured on an Asset Representation or Referenced Asset Representation component, the Replace Asset Content button () will appear on the asset thumbnail. When clicked, this button allows users to replace the content of a given asset. An asset import configuration must be specified so that its rules can be applied against the new content.

For more information on enabling replacement of asset content in the Web UI using the Asset Representation component (for display of assets on the asset object), see the **Asset Representation** section of the **Web User Interfaces** documentation.

For more information on enabling replacement of asset content in the Web UI using the Referenced Asset Representation component (for display of assets on an object that references the asset object), see the **Referenced Asset Representation** section of the **Web User Interfaces** documentation.

Asset Importer Migration Guide

The purpose of this guide is instruct users on how to migrate configurations to use the Asset Importer for implementations that previously used the Enhanced Image and Document Importer add-on component.

The original Enhanced Image and Document Importer (EIDI) was designed around an Inbound Integration Endpoint (IIEP) solution, and was configured entirely within one IIEP. By contrast, the more advanced Asset Importer can be configured to function with both IIEPs and Web UI, and exists independently from both interfaces.

Before the migration is performed, ensure that the initial setup steps have been performed. For more information, see the **Asset Importer Initial Setup** section of the documentation.

A basic understanding of how to configure Asset Importer is necessary to complete this migration. For more information, see the **Asset Importer Configuration Overview** section of the documentation.

Note that a small number of EIDI features are not available in Asset Importer. These features include:

- The Folder Builder and Metadata Builder options of the Hierarchy Builder
- The Metadata Matcher option of the Asset Matcher
- The ExtraFile option for Meta File and Zip Metafile configurations

Important: These migration instructions only apply to those that used the standard EIDI configuration options for and no custom extensions.

Because the configuration process varies between the two, this guide will follow the logic of an Asset Importer configuration, starting with importer configuration itself and the IIEP after.

Asset Importer Configuration

Step-by-step configuration instructions for the asset importer configuration are detailed below. Note that the asset importer configuration steps correspond with those found on the 'Configure Processing Engine' step of the (EIDI) IIEP configuration wizard.

1. **Identify Config** - Create an ID, Name, and an (optional) description for the configuration.
2. **Import Validator** - The fields for this wizard step and its EIDI counterpart are nearly identical. The format is slightly different, but it otherwise provides the same options.

EIDI configuration:

Change Standard Import Validator Configuration

Import Validator: Standard Import Validator

Max Dimensions (pixels): 10

Min Dimensions (pixels): 1

Valid Color Spaces: RGB

Valid Mime Types: image/jpeg

DPI: 1-10

Max File Size: 10MB

OK Cancel

Asset Importer configuration:

New Asset Import Configuration

Steps

1. Identify Config
- 2. Import Validator**
3. Hierarchy Builder
4. Asset Matcher
5. Content Importer
6. Metadata Importer
7. Product Linker
8. Approver
9. Auto Purger
10. Workflow Handler
11. Business Rules

Import Validator

Import Validator: Import Validator

Width Dimension (Pixels): 1 Min 10 Max

Height Dimension (Pixels): 1 Min 10 Max

Valid Color Spaces: RGB color - 24 bit

Valid MIME Types: image/jpeg

DPI: 1 Min 10 Max

Max File Size (MB): 10

Back Next Finish Cancel

Note: With Asset Importer the min / max dimensions can differ between width and height.

3. **Hierarchy Builder** - The 'File Name Hierarchy Builder' is the only configuration option available for Asset Importer (outside of custom extensions).

When migrating your EIDI configuration note that an additional option is available: 'Use Selected Classification For Manual Imports.' If this box is checked the asset hierarchy root selection made on this step will be overwritten by a classification hierarchy selected during manual import (via Web UI).

EIDI configuration:

The dialog box is titled "Change File Name Hierarchy Builder Configuration". It features a dropdown menu for "Hierarchy Builder" set to "File Name Hierarchy Builder". Below this, there is a text input field for "Asset Hierarchy Root" containing "9 (20138)" and a browse button "...". Another text input field for "The number of folder levels that should be created" contains the value "1". At the bottom right, there are "OK" and "Cancel" buttons.

Asset Importer configuration:

The dialog box is titled "New Asset Import Configuration" and has a "Steps" sidebar on the left with 11 items. Item 3, "Hierarchy Builder", is highlighted. The main area is titled "Hierarchy Builder" and contains a dropdown menu for "Hierarchy Builder" set to "File Name Hierarchy Builder". Below this are fields for "Asset Hierarchy Root *" (value: "9 (20138)"), "Use Selected Classification For Manual Imports" (checked), and "Number Of Folder Levels To Be Created *" (value: "1"). A note states: "Zero (0) places assets directly in the hierarchy, while any higher value will result in a pattern of sub folders where the assets will be placed in." At the bottom right, it says "* Mandatory Fields". At the bottom, there are "Back", "Next", "Finish", and "Cancel" buttons.

- Asset Matcher** - The 'Asset Matcher' is the only configuration option available for Asset Importer (outside of custom extensions).

Though organized in a different order, most of the parameters are identical between the two.

An important difference to note is that the 'Allow Create Asset' and 'Multiple Match Handling' parameters found in the EIDI configuration are handled by a single parameter for Asset Importer: 'Multiple Matches Found.' The 'Yes' / 'New' and 'No' / 'Error' combinations of the two EIDI options can be replicated by the 'Create new asset' and 'Error on record' Asset Importer options, respectively.

EIDI configuration:

Change Standard Asset Matcher Configuration

Asset Matcher: Standard Asset Matcher

File Name Match Expression: (.*)\.*

Match By: AssetName

Asset Hierarchy Root: 9 (20138)

Match Template: \$1

ID Template: \$1

Name Template: \$1

Allow Create Asset: Yes

Multiple Match Handling: New

OK Cancel

Asset Importer configuration:

New Asset Import Configuration

Steps

1. Identify Config
2. Import Validator
3. Hierarchy Builder
- 4. Asset Matcher**
5. Content Importer
6. Metadata Importer
7. Product Linker
8. Approver
9. Auto Purger
10. Workflow Handler
11. Business Rules

Asset Matcher

Asset Matcher: Asset Matcher

Asset Matcher Hierarchy Root *: 9 (20138)

Match on *: Asset Name

File Name Match Expression *: (.*)\.*

Match Template *: \$1

ID Template:

Name Template: \$1

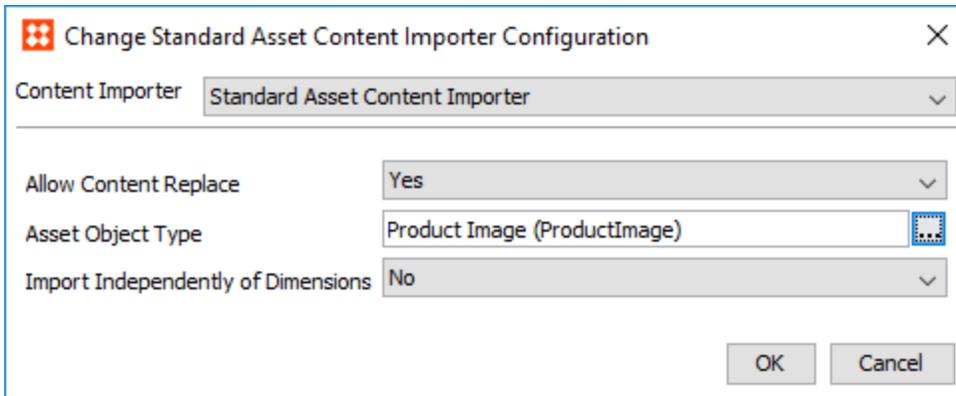
Multiple Matches Found: Create new asset

Back Next Finish Cancel

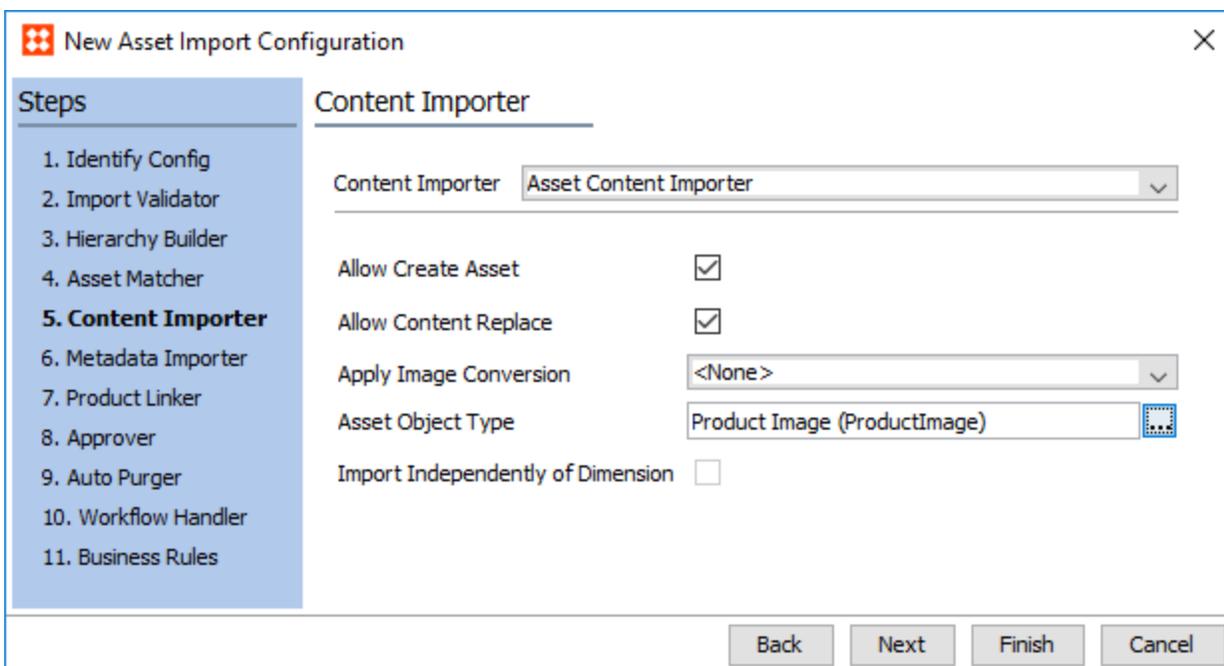
5. **Content Importer** - The fields for this wizard step and its EIDI counterpart are nearly identical. The only difference is that two new options are available: 'Allow Create Content' and 'Apply Image Conversion.'

Important: Asset Importer cannot create new assets unless the 'Allow Create Content' box is checked.

EIDI configuration:

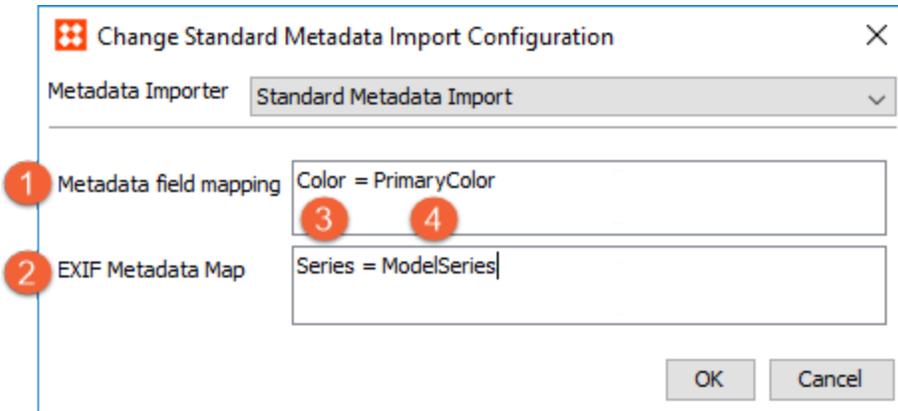


Asset Importer configuration:

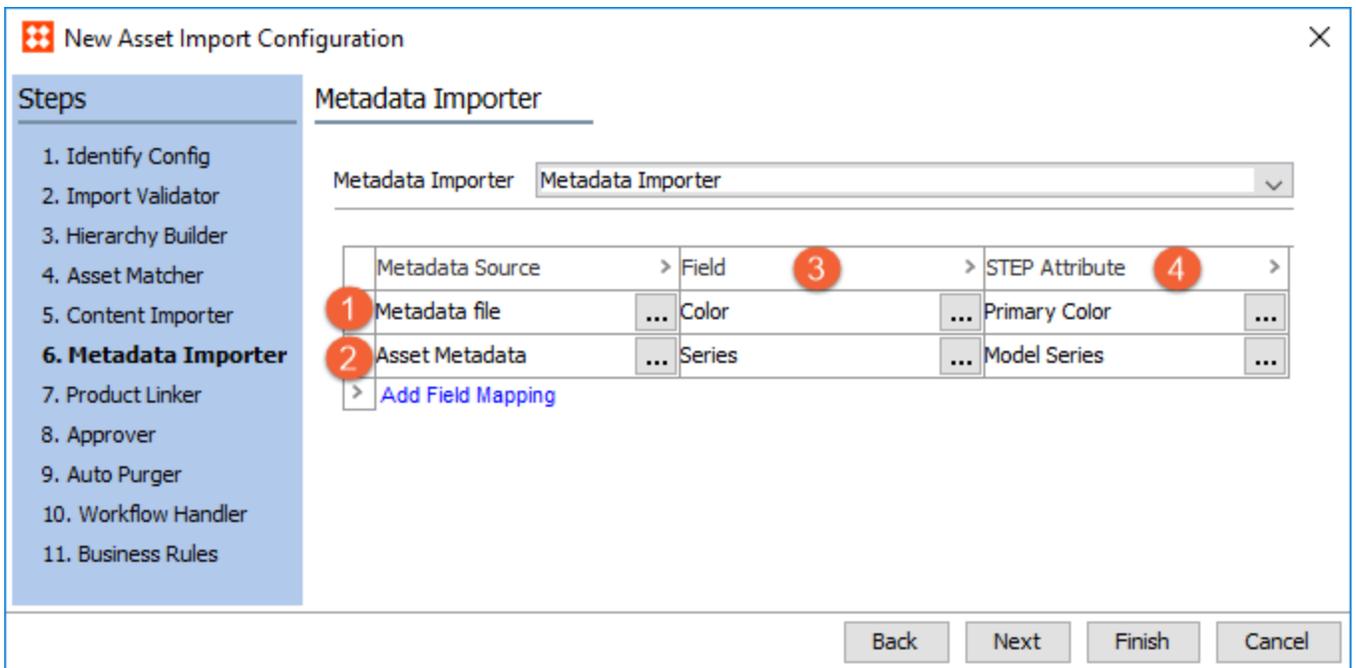


6. **Metadata Importer** - Though formatted completely differently, this step has nearly identical options in both wizards. The below points / images illustrate how the parameters correspond between the two wizards:
- The 'Metadata field mapping' parameter from the EIDI wizard corresponds to the Metadata Source option 'Metadata file' (1).
 - The 'EXIF Metadata Map' EIDI parameter corresponds to the Metadata Source option 'Asset Metadata' (this parameter also supports XMP data) (2).
 - The 'Field' and 'STEP Attribute' parameters in the Asset Importer wizard correspond to the '[Column / Property] = [STEP metadata attribute ID]' (3 & 4).

EIDI configuration:



Asset Importer configuration:



7. **Product Linker** - As this is an optional step for both configurations, the 'No Product Link' option is available in both wizards.

The EIDI's 'Product Name Match Linker' configuration corresponds to the 'Asset Filename Linker', and offers identical configuration options.

EIDI configuration:

Change No Product Link Configuration

Product Linker: Product Name Match Linker

File Name Match Expression: (.*)\.*

Match By: Key

Unique Key: Key 1

Match Template: \$1

Match Below Product: Apparel (18200)

Reference Type (ID): Primary Image

Allow Multiple Products: No

OK Cancel

Asset Importer configuration:

New Asset Import Configuration

Steps

1. Identify Config
2. Import Validator
3. Hierarchy Builder
4. Asset Matcher
5. Content Importer
6. Metadata Importer
- 7. Product Linker**
8. Approver
9. Auto Purger
10. Workflow Handler
11. Business Rules

Product Linker

Product Linker: Asset Filename Linker

File Name Match Expression *: (.*)\.*

Match On *: Key

Key: Key 1

Match Template *: \$1

Match Below Product Root *: Apparel (18200)

Reference Type *: Primary Product Image

Allow Multiple Products:

* Mandatory Fields

Back Next Finish Cancel

The EIDI's 'Metadata Product Matcher' configuration corresponds to the 'Metadata Product Linker', and offers nearly identical configuration options. The EIDI's 'Unique Key' and 'Default Unique Key' parameters were merged into the 'Key' parameter.

EIDI configuration:

Change No Product Link Configuration

Product Linker: Metadata Product Matcher

Match Metadata Field: Product

Match By: Key

Unique Key Field: Key 1

Default Unique Key:

Match Below Product: Apparel (18200)

Default Reference Type: Primary Product

Reference Type Metadata Field: ID

Allow Multiple Products: No

OK Cancel

Asset Importer configuration:

New Asset Import Configuration

Steps

1. Identify Config
2. Import Validator
3. Hierarchy Builder
4. Asset Matcher
5. Content Importer
6. Metadata Importer
- 7. Product Linker**
8. Approver
9. Auto Purger
10. Workflow Handler
11. Business Rules

Product Linker

Product Linker: Metadata Product Linker

Match Metadata Field *: Product

Match On *: Key

Key: Key 1

Match Below Product Root *: Apparel (18200)

Reference Type Field *: ID

Default Reference Type *: Primary Product Image

Allow Multiple Products:

* Mandatory Fields

Back Next Finish Cancel

8. **Approver** - The Approver step is identical between both interfaces.
9. **Auto Purger** - The Auto Purger step is identical between both interfaces.

10. **Workflow Handler** - The Workflow Handler step offers the same options for both configurations, but has slightly different parameter names.

- 'Product Asset Workflow (ID)' corresponds to 'Product Workflow'
- 'Asset update event' corresponds to 'Asset Update Workflow.State'
- 'Product update event' corresponds to 'Product Update Workflow.State.'

EIDI configuration:

The dialog box is titled "Change Standard Asset Workflow Handler Configuration". It features a dropdown menu for "Workflow Handler" set to "Standard Asset Workflow Handler". Below this are five text input fields:

- New Asset Workflow (ID): SampleWorkflow
- Updated Asset Workflow (ID): SampleWorkflow
- Product Asset Workflow (ID): SalesItemCreation
- Asset update event: SampleWorkflow.Review
- Product update event: SalesItemCreation.Review

At the bottom right, there are "OK" and "Cancel" buttons.

Asset Importer configuration:

The dialog box is titled "New Asset Import Configuration". On the left, a "Steps" sidebar lists 11 steps, with "10. Workflow Handler" highlighted. The main area is titled "Workflow Handler" and contains a dropdown menu for "Workflow Handler" set to "Asset Workflow Handler". Below this are five text input fields:

- New Asset Workflow: Workflow with Parallels (SampleWorkflow) ...
- Updated Asset Workflow: Workflow with Parallels (SampleWorkflow) ...
- Asset Update Workflow.State: SampleWorkflow.Review
- Product Workflow: m Creation - original (SalesItemCreation) ...
- Product Update Workflow.State: SalesItemCreation.Review

At the bottom, there are "Back", "Next", "Finish", and "Cancel" buttons.

11. **Business Rules** - The Business Rules step is identical between both interfaces.

Inbound Integration Endpoint Configuration

Once the Asset Importer configuration has been created it can be used as the processing engine for an IIEP. To complete the migration, see the step-by-step configuration instructions for the IIEP detailed below.

1. **Identify Endpoint** - Does not require adjustments.
2. **Choose Receiver** - This should already be configured with a Hotfolder receiver, and therefore does not require any adjustments.
3. **Configure Endpoint** - This should already be configured with an Asset Importer processing engine, and therefore does not require any adjustments.
4. **Configure PreProcessor** - This should already be set to 'No pre-processing', and therefore does not require any adjustments.
5. **Configure Processing Engine** - As the core of the Asset Importer solution now resides within its own configuration, this step only contains those original configuration options specific to an IIEP solution: 'Receiver' and 'SubFolder Override.'

Before configuring these two options, ensure that the relevant Asset Importer configuration is selected.

Configure Processing Engine : Configuration



- **Handle content as** - This parameter is nearly identical to the original Receiver configuration, and provides the same four receiver options (albeit renamed): 'Files', 'Meta File', 'Zip File', and 'Zip Metafile.'
 - **Files** - Exactly the same as the EIDI option 'File Receiver.'
 - **Meta File** - A few options differ between the two interfaces. To begin, the 'Image Root' parameter is no longer necessary, and is not included in the Asset Importer configuration. Additionally, the 'Metafile Error Handling' parameter is the same except that the 'ExtraFiles' option is not available for Asset Importer. The Asset Importer 'Column Delimiter' parameter is required field that specifies what character should be used to separate each of the columns in the metadata file.

See below images for how the parameters correspond between the two interfaces:

EIDI configuration:

Change File Receiver Configuration

Receiver: Metafile Receiver

Images Root Folder:

1 Metafile Error Handling: None

2 File Name Field: Filename

OK Cancel

Asset Importer configuration:

Handle content as: Metafile

1 Metafile Error Handling *: Report missing files

2 Filename Column Header *: Filename

Column Delimiter *: ,

- **Zip File** - Exactly the same as the EIDI option 'ZIP Receiver.'
- **Zip Metafile** - A few options differ between the two interfaces. To begin, the Asset Importer's 'Metafile Error Handling' parameter is the same except that the 'ExtraFiles' option is not available for Asset Importer. The Asset Importer 'Column Delimiter' parameter is required field that specifies what character should be used to separate each of the columns in the metadata file.

See below images for how the parameters correspond between the two interfaces:

EIDI configuration:

Change File Receiver Configuration

Receiver: Zip with Metafile Receiver

1 The filename plus .csv or .txt extension: assetfiles.csv

2 Metafile Error Handling: MissingFiles

3 File Name Field: Filename

OK Cancel

Asset Importer configuration:

Handle content as

1 Name of metafile within ZIP file *

2 Metafile Error Handling *

3 Filename Column Header *

Column Delimiter *

- **Override configuration options for subfolders** - The same options exist between both interfaces, but are arranged slightly differently.

See below images for how the parameters correspond between the two interfaces:

EIDI configuration:

Change Folder Overrides

Folder Plugin Override 1

Folder	Configuration Step	Configure
2 JPEG	3 Import Validator	4 Change Standard Import Validator Configuration

Asset Importer configuration:

Inbound Integration Endpoint Wizard

Steps

1. Identify Endpoint
2. Choose Receiver
3. Configure Endpoint
4. Configure PreProcessor
5. **Configure Processing Engine**
 - 5.1. **Configuration**
6. Configure PostProcessor
7. Schedule Endpoint
8. Configure Error Reporter

Configure Processing Engine : Configuration

Asset Importer Configuration

Handle content as

Override configuration options for subfolders:

Folder	Configuration Step	Configuration
2 JPEG	3 Import Validator	4 Override parameters
<input type="button" value="Add Folder Override"/> 1		

- 6. **Schedule Endpoint** - Does not require adjustments.

Important: Consider the time zone of the application server compared to that of the workbench (the client) where the schedule is created or viewed. When scheduling a job, the local time zone is displayed in the workbench, but the time zone of the server is used to run the background process. Although displayed, the time zone of the client is not included in the instruction to the server to run the job. This can cause confusion about when the job will run since the scheduled time is not automatically converted to accommodate potential differences in time zones.

7. **Configure Error Reporter** - The Log Handler and Notification Handler configurations do not apply in Asset Importer and are instead handled by the default IIEP Error Reporter.

For more information on configuring IIEPs for Asset Importer, see the **Asset Importer Inbound Integration Endpoint Configuration** section of the **Asset Importer** documentation.

Manual Asset Importer

Import Images and Documents wizard is used to import assets. Images are the most frequently imported asset, however, it is possible to import any electronic file using the same procedures as the ones used for images.

We recommend that users of the Import Images and Documents wizard have the following skills:

- An understanding of the basic concepts of STEP, of maintaining attributes and their values, and of creating and maintaining products, classifications or entities.
- Knowledge of the STEP system equivalent to basic STEP training
- Thorough knowledge of the files that are imported.
- Knowledge of dimensions and dimension points and whether or not you require assets to be dependent on dimensions, and how you would use such a set-up.
- Knowledge of MIME types and asset object types.
- Knowledge of asset reference types and its validity.

Also, ensure that your system is set up to accept appropriate file formats for imports of assets, and ensure that each of these formats is assigned an appropriate icon.

Preparing to Import Assets

Before starting the import process, be aware of the following:

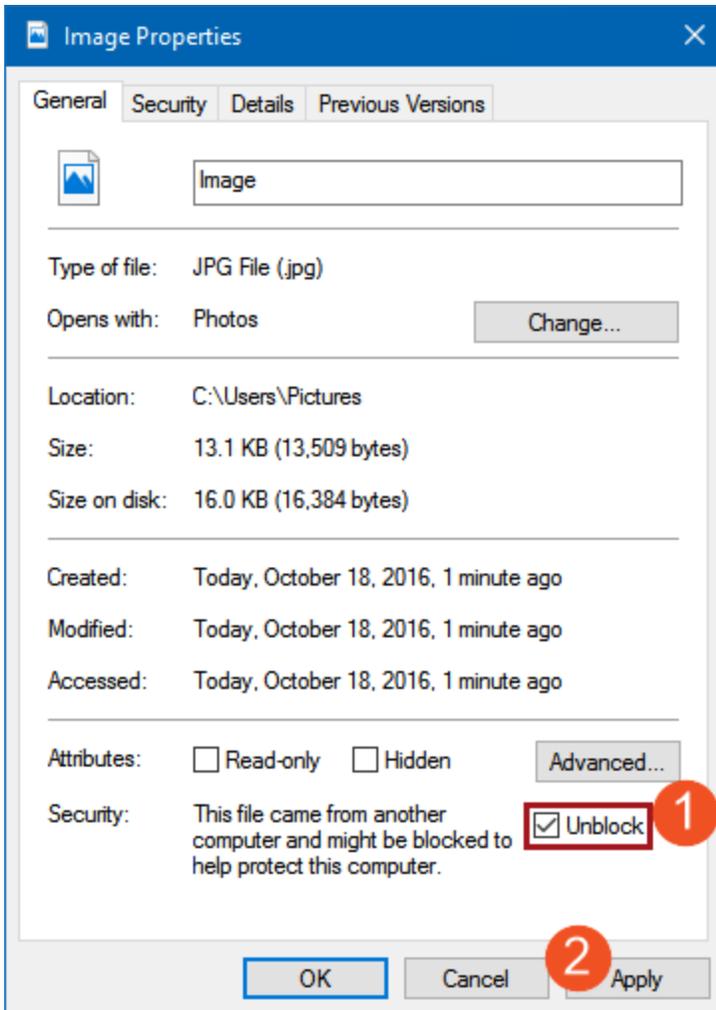
- You can load assets and use either the file name as ID or use an automatically generated number. In either case, the file name is used as the name of the asset in STEP.

Note: Asset IDs have a maximum length of 40 bytes, and names have a maximum of 80 bytes.

- Do not to use special characters or spaces in asset IDs or names.
- Although you can upload images of almost any file format, print publications in the system accept only TIFF or EPS file formats. You can upload other formats for non-print applications.
- You should check all images for accuracy and suitability before uploading them to STEP. This includes file size, resolution, one clipping path maximum, compression type, actual image size at 100 percent, if there are embedded low-res TIFF or EPS images, and so on.
- If you have a Photoshop image that has text in it, you must outline that text. You cannot have text with font calls within an image. For Illustrator files, you can also outline the text. If you choose not to do so, you must select the option to embed the font(s) within the EPS file.
- To ensure a smooth upload of images of different file types, you are strongly advised to use extensions to the image file names that match the file type, for example, .TIFF or .EPS.
- Avoid having assets in STEP that have different IDs but the same name. Technically, IDs must be unique, but names do not have to be unique. However, having different images with the same name can be confusing with the exception of country- or market-specific assets. In this case, you can import assets with the same ID and name into different contexts.
- Depending on your system security, downloaded images may be blocked. Blocked files will generate an asset creation failure when imported.

Unblocking Downloaded Image Files

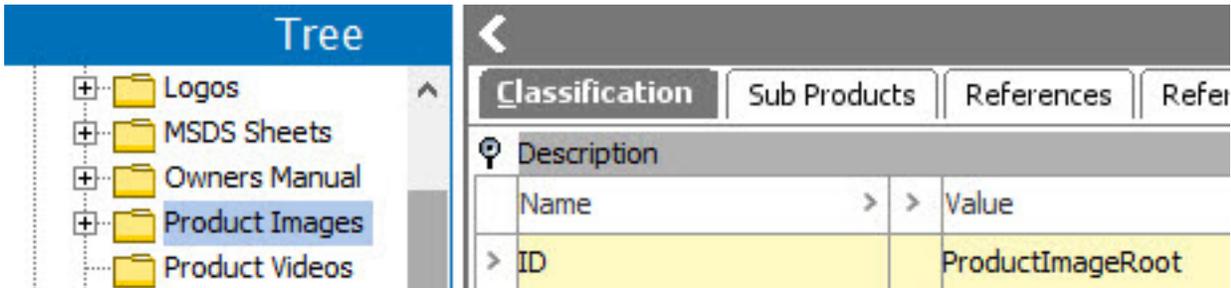
1. Right-click on the image, and select **Properties**.
2. In the Image Properties dialog, under Security, ensure that the **Unblock** checkbox is selected.
3. Select **Apply** to save the change.



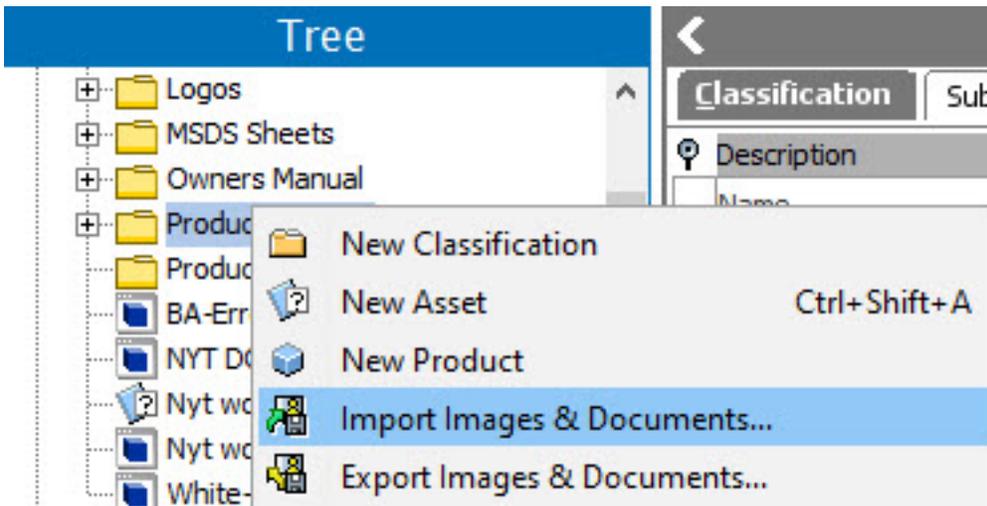
Import Images and Documents Wizard

Import of Images and Documents can be initiated in different ways.

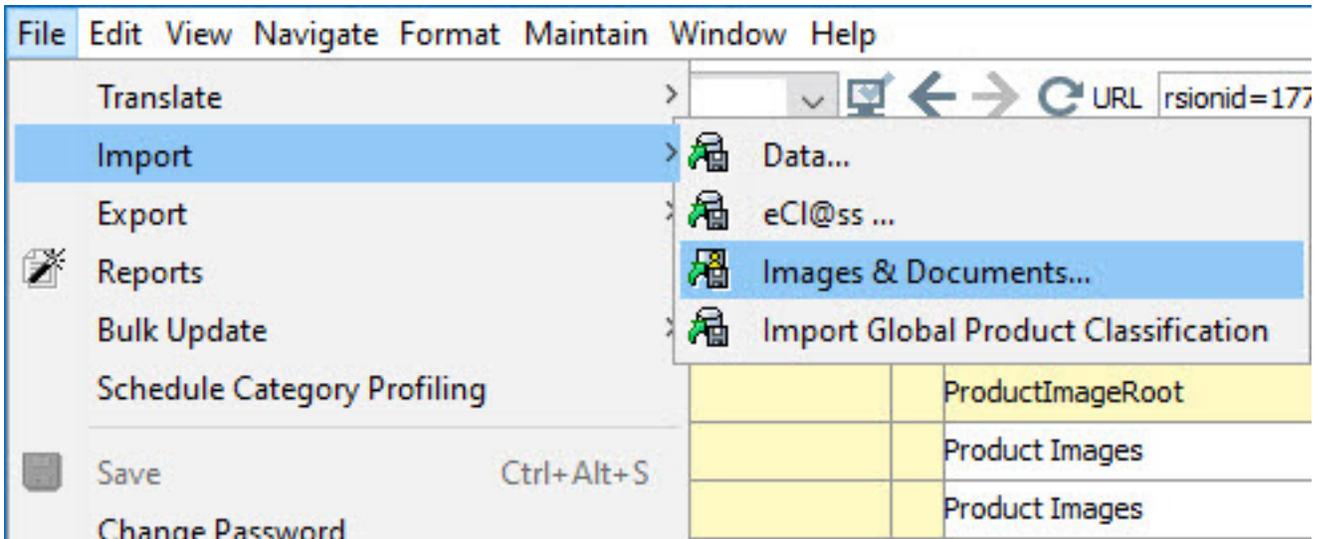
1. Determine the location of the assets that you want to import.
2. In **Tree > Classification** hierarchy, select the folder that will house the imported asset files.



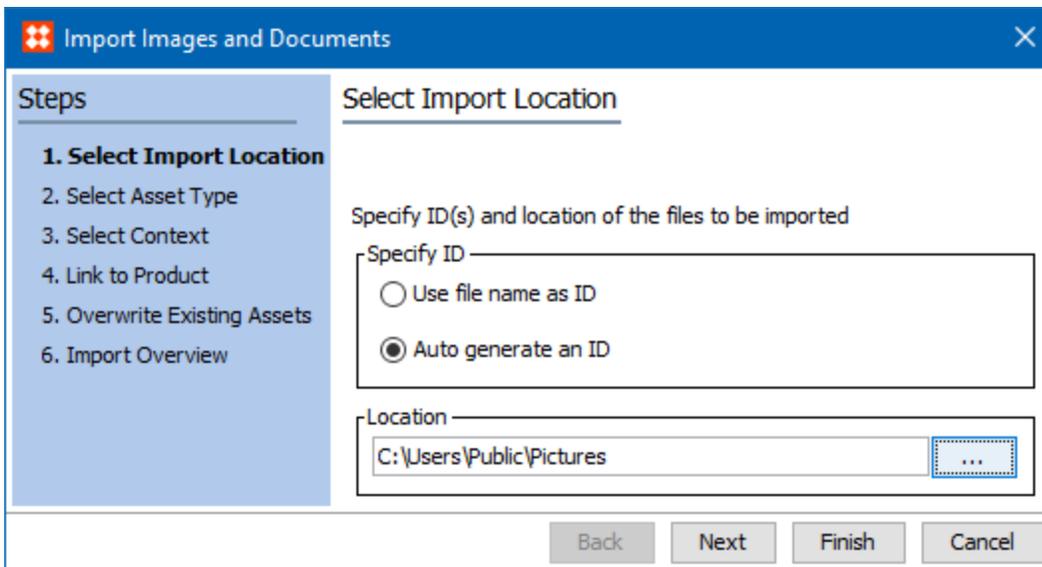
3. Choose one of the following options to start the wizard:
 - Either right-click the classification folder and select **Import Images & Documents** from the menu.



- Or from the **File** menu, point to **Import**, and then select **Images & Documents**.



4. The **Import Images and Document** wizard opens. The wizard guides you through the required steps. Not all steps are necessary for every import. Often you can skip the later steps and proceed to the end to launch the import process.



- **Select Import Location** allows you to determine the asset ID and choose the location of the objects to import.
- **Select Asset Type** allows you to set the asset object type to be used.
- **Select Context** allows you to set dimension dependencies.
- **Link To Product** allows you to create reference links between the imported assets and existing objects.
- **Overwrite Existing Assets** allows you to determine if the imported assets replace existing assets.
- **Import Overview** allows you to review a sampling of the assets to be imported.

5. The 'Asset Import Process' starts after clicking on **Finish** button in 'Import Images and Document' wizard. For more information on the asset import process, see the **Manual Asset Importer** topic in the **Digital Assets** documentation.

Select Import Location

In 'Select Import Location' screen, you specify where the file or folder is located that contains the assets to be uploaded into STEP. This is also where you specify whether or not the asset file name should be used as the asset's ID in STEP (as well as the name).

1. For **Specify ID**, select to use the asset's file name as the asset's ID in STEP or auto generate the STEP ID.

Note: By default, "Auto generate an ID" is selected and once the Asset is imported, an automated ID is specified as an ID whereas the name will be the Asset file name itself.

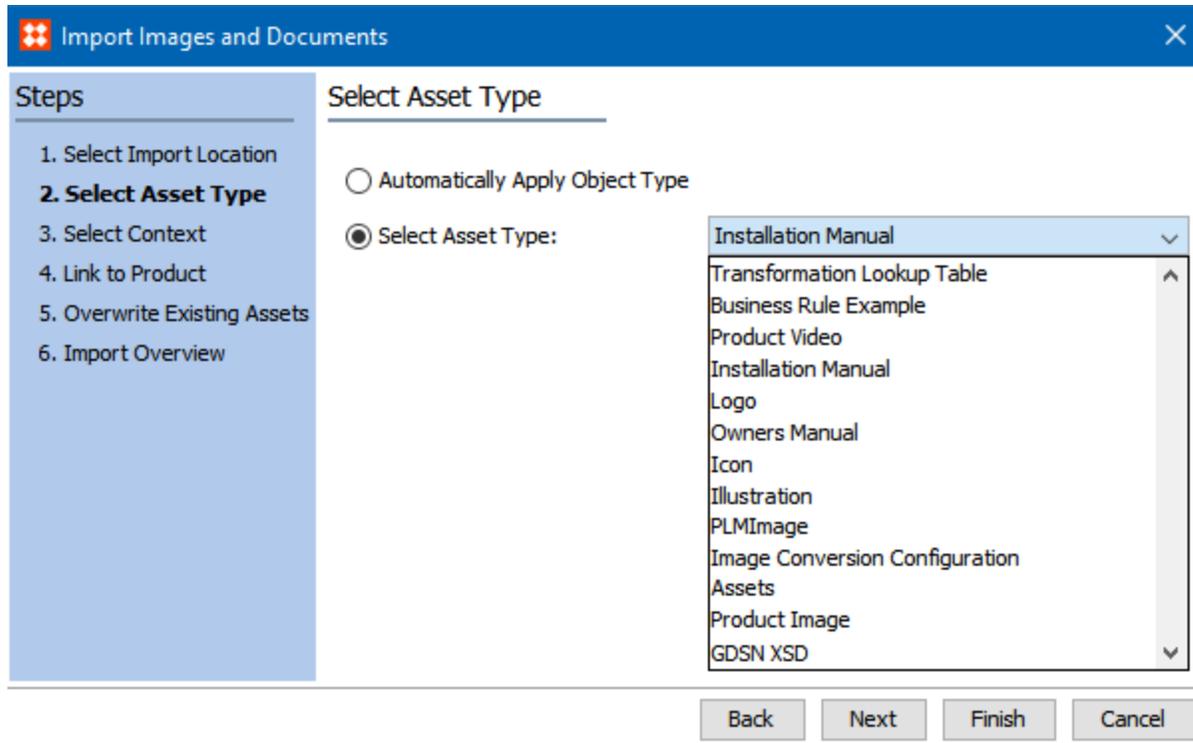
When selecting your ID specifications:

- When 'Use file name as ID' option is selected, we can avoid duplicate of assets of same name being uploaded to STEP.
 - When 'Auto generate an ID' is selected, we cannot identify the duplicate assets being uploaded since the same asset will be present in STEP but with a different STEP ID.
2. For **Location**, click the ellipsis button (...) and use the file browser to navigate to the location of the assets that will be uploaded. You can upload multiple assets by selecting a folder and not just an individual asset. All assets in the selected folder, and any assets in any child folders to the selected folder are uploaded. All assets within the selected folder are loaded to the location you specified before starting the wizard.
 3. Click **Next** to continue.

Note: The user will be able to select an asset which is either in the local desktop or in a network to which the local desktop has access.

Select Asset Type

In the Select Asset Type step, specify to manually apply an asset type to a specific object type, or if the system will determine the object type of each asset.



1. Choose an option to determine how the object type is assigned:
 - **Automatically Apply Object Type** assigns a STEP object type automatically based on the MIME types allowed. For more information, see **MIME Types** in the **System Setup / Super User Guide** documentation.
 - **Select Asset Type** allows you to manually apply the selected object type to all imported assets. The list of available asset types is determined by your system setup.

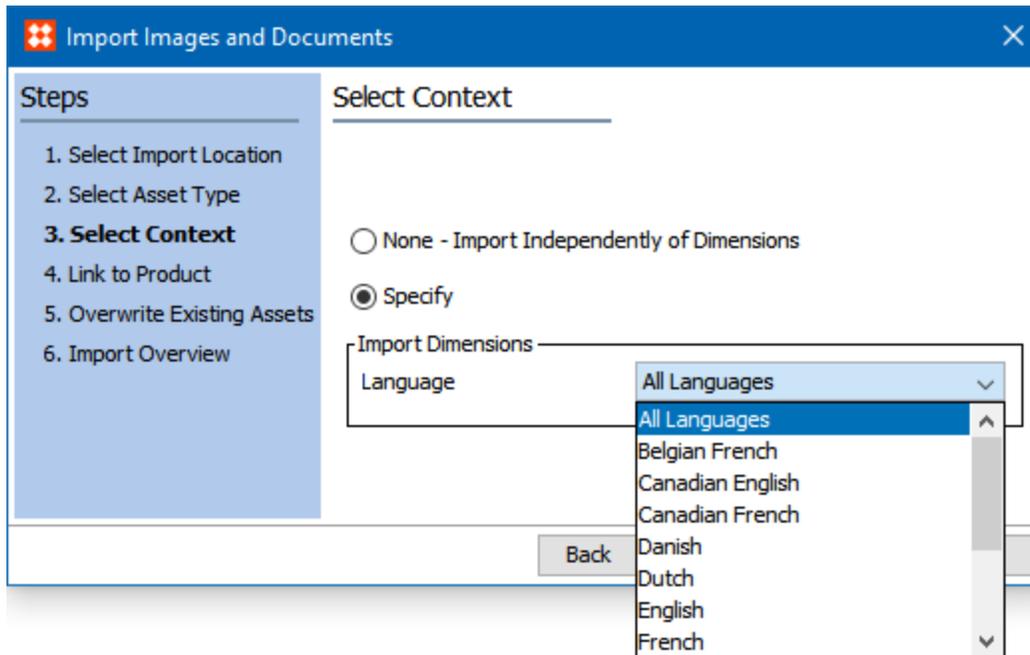
Object types are supposed to be created under the Object Types and Structures > Assets in the System Setup Tree and only these object types will be available for the user to select under the dropdown list as shown in the above screenshot. For more details on how to create or maintain an Object type, see the **Object Maintenance in Tree** topic of the **Getting Started** documentation.

Note: STEP Workbench may be configured to automatically recognize the file type. However, selecting the Asset Type ensures the item can be assigned to your product successfully.

2. Click **Next** to continue or click **Finish** to start the import process without specifying any further parameters.

Select Context

In 'Import Images and Documents' wizard, step '3. Select Context' you to specify any dimension dependencies. This is useful when loading illustrations that are essentially the same but are, for example, language or country specific. You might also specify a context when publishing a catalog that includes illustrations with embedded texts, which requires different language versions of the illustration.



- Determine if dimensions should be considered for assets being imported:
 - None - Import Independently of Dimensions** means the assets are loaded in a global context.
 - Specify** allows you to select the one or more dimensions from the list in the **Import Dimensions** area.

Note: Common setup for assets is to use the language dimension. The available options are based on your system setup which may allow selection of more than one dimension.

Dimensions should be set up in the System Setup tab, so that the same is available in the dropdown list. To know more on how to set up Dimensions, see the **Contexts** topic in the **System Setup / Super User Guide** documentation.

- Click **Next** to continue or click **Finish** to start the import process without specifying any further parameters.

Creating Context-Sensitive Assets

To load an asset which is dependent on a country dimension, for example, when your system is only set up to have the language dimension for assets, you can upload that image for a context using a specific country. From the asset's right-click menu, use the **Create Local Content of Asset** and then use the **Replace Asset Content** option. This is done on an individual basis. It keeps the image IDs the same, and all the links from modules and/or products are maintained to the appropriate version of the image.

When an asset has been replaced, a major revision will be created with the changed image. The major revision enables the option to revert to an older revision of the asset.

Using context-sensitive assets in STEP'n'design

Loading context-sensitive assets using the same asset ID allows publication swaps in STEP'n'design, for example, to swap both product data and language-relevant images.

When an asset is imported for the first time with language dependency, then the asset will be available only for the context in which it was imported. When the same asset is viewed in a different context, then the message will show which says "Asset has no content". Similarly, the System Properties flipper in the right pane will show no attribute values which eventually means that the asset is empty.

Link To Product

In 'Import Images and Documents' wizard, step '4. Link To Product' you can specify a link to product via a number of matching options.

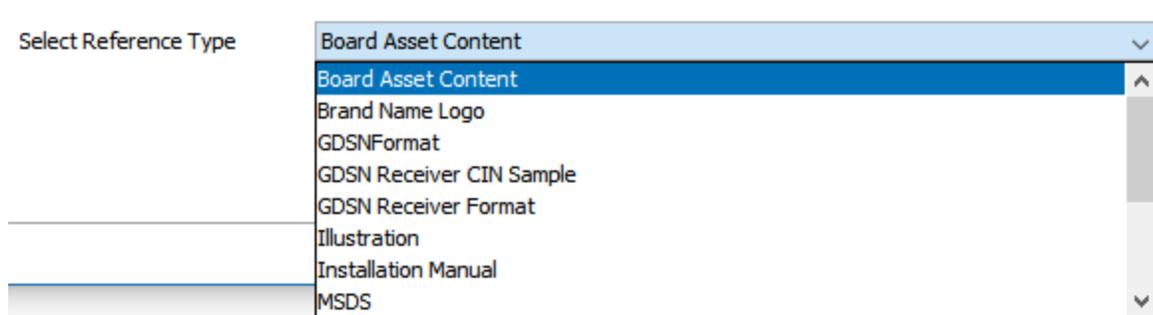
1. Check **Link to Product** to create links and then select an option to determine the required reference / link type. All other fields of this STEP are activated only when Link to Product option is checked.
 - **Match on Full Name** means the system attempts to match the file name of the asset (minus the extension) to a STEP ID. For all successful matches, a link is created.
 - **Enter a Delimiter** allows you to add one or more delimiter characters in order to find a match between STEP ID and the asset file name. This field is enabled only when selecting one of the option 'Match Before Delimiters', 'Match After Delimiters' or 'Match the First Characters After the Delimiters.'

Note: Leaving Link to Product unchecked means no references / links are created.

2. Determine the how to use the delimiter by choosing one of the following options:
 - **Match Before Delimiters** If the asset's file name is 17268_AS-56, and the delimiter is set to the underscore character (_), then the system tries to find the product with the ID of 17268.
 - **Match After Delimiters** If the asset's file name is UK_177628, and the delimiter is set to the underscore character (_), then the system tries to find the product with the ID of 177628.
 - **Match the First Characters After the Delimiter** If the asset's file name is UK_9014514-ASH, and the delimiter is set to the underscore character (_), and the number of characters to match is set to 7, then the system tries to find the product with the ID of 9014514.

- **Match Between Position** Enter the start and end character positions to use for making the match to the STEP ID. If the asset's file name is UK_447628ASP, and the starting position is set to 4 and the ending position is set to 11, then the system tries to find the product with the ID of 447628AS.
 - **Match Between Delimiter** Enter the start and end delimiters to use for making the match to the STEP ID. If the asset's file name is UK_44762877_EAS, and the starting delimiter is set to an underscore (_), and the ending delimiter is also set to the underscore, then the system tries to find the product with the ID of 44762877.
4. **Select Reference Type** to determine a single reference type to use for the link between the asset and the object. The content of the list varies depending on the system setup. All assets loaded in this session use the same selected reference type.

For more information on creating a reference types, see the **Reference and Link Types** topic of the **System Setup / Super User Guide** documentation.



5. Click **Next** to continue or click **Finish** to start the import process without specifying any further parameters.

Creating Additional Reference Links

When more references are required, use one of the following ways to create them:

- Manually link any asset to any existing object via any existing reference type in STEP on the asset's References tab.
- Create a STEPXML file to create links between assets and products and load that file via the Data Import Manager wizard.
- Create a tab delimited or Excel file that holds the object ID and the asset ID, and create multiple reference links and load that file via the Data Import Manager wizard.

For more information on the Data Import Manager wizard, see the **Creating a Data Import** documentation.

Overwrite Existing Assets

In 'Import Images and Document' wizard, step '5. Overwrite Existing Assets' allows you to specify how replacement of assets on import should be handled.

- Overwrite Existing Assets** replaces assets that already exist in STEP with assets being imported. Selecting to overwrite enables the following options:

 - Allow other type** enables replacing assets when the file extension of the imported asset does not match extension of the asset in the database. This option is unchecked by default.

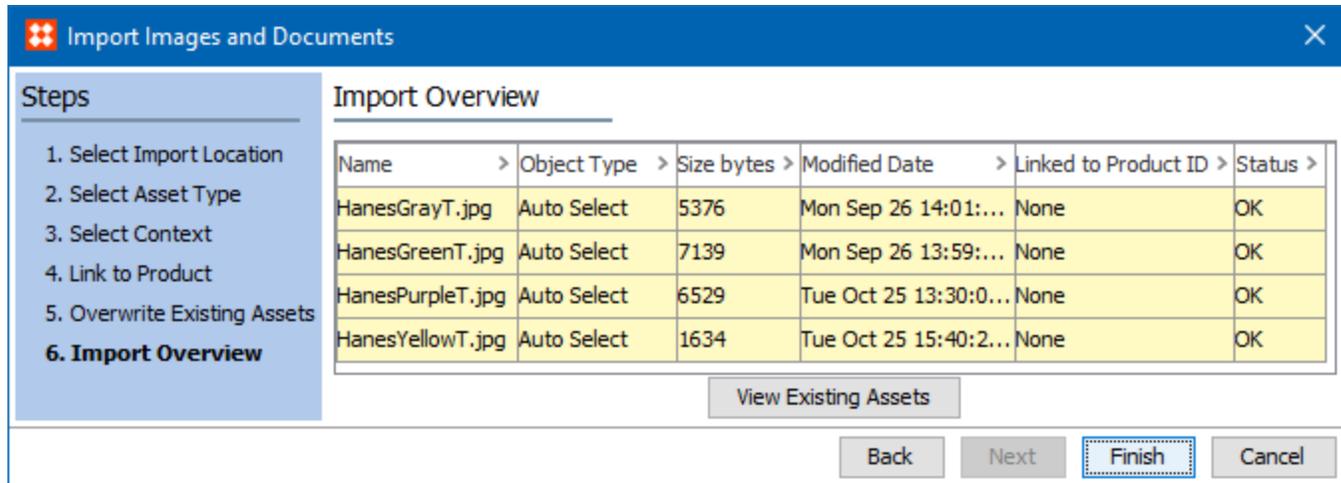
Example: An image with ID: Art123 exists in the database as png image. An image is being imported with name Art123.jpg. The image will be replaced if Allow other type is checked, else it will be ignored.
 - in selected classification** means existing assets are only overwritten when they are located in the originally selected classification folder.

If 'Assets' is a selected classification, while importing an image Art123.jpg with replacement option, then process searches for an image Art123 only in classification 'Assets.'
 - in all classifications where ID match filename, regardless of classification** means existing assets are overwritten wherever they are found in STEP.

While importing an image Art123.jpg with replacement option, then process searches for an image Art123 in all classification available.
- Show Resolution Warnings** determines the minimum resolution requirement of the imported assets. All assets are imported, but if the resolution of an image is lower than specified, a warning is reported.
- Click **Next** to continue.

Import Overview

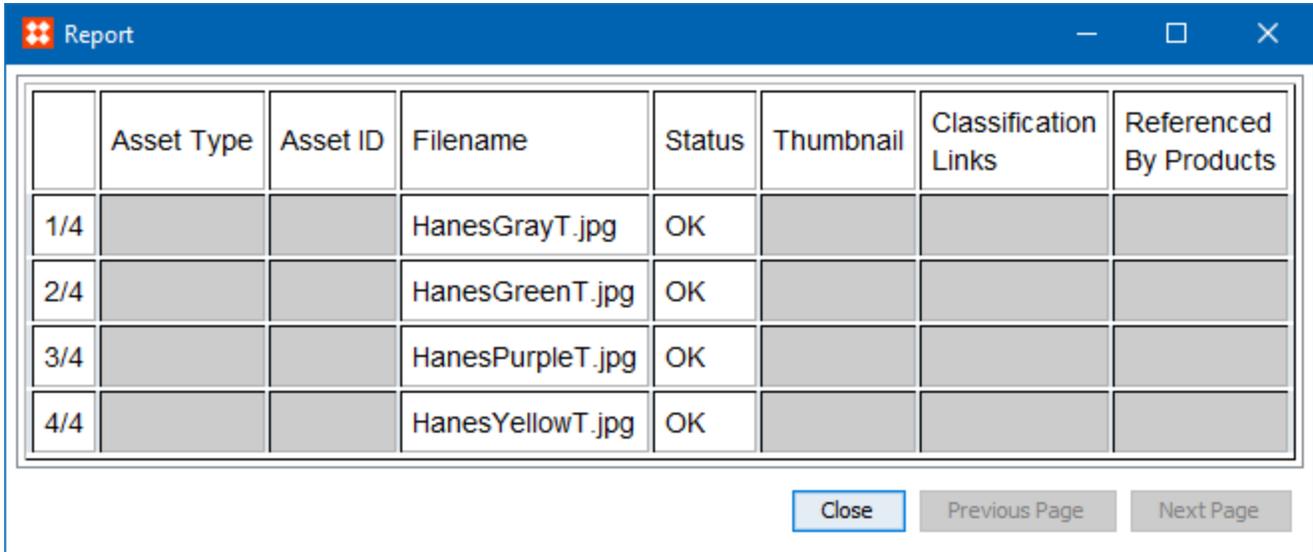
In 'Import Images and Documents' wizard, step '6. Import Overview' you can review some of the assets that you are about to load - provided that you selected a folder and not an individual file.



1. Review a sample of the assets to be imported. Depending on the number of assets found in the selected folder, not all will be displayed. When importing only a few, all are displayed.

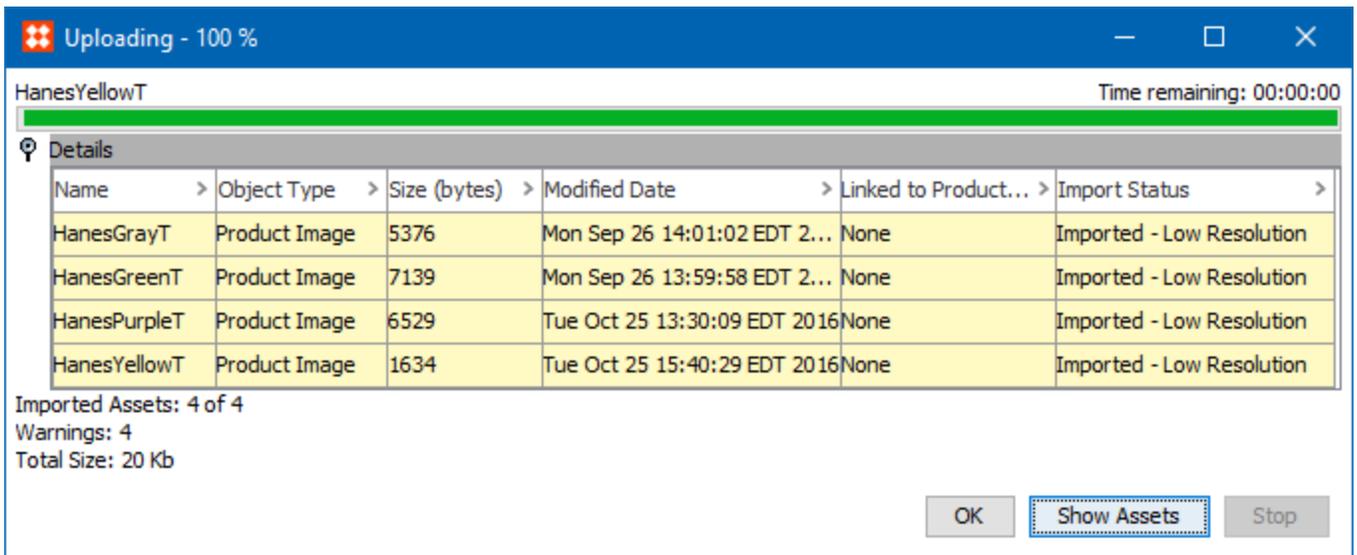
The Import Overview shows you the following information about the file about to be imported:

- Name
 - Object type
 - Size bytes
 - Modified Date
 - Linked to Product ID: File Name / Product ID is displayed if a match exists. "None" is displayed when no match is found.
 - Status = Skipping when the image already exists and you selected not to overwrite; or Overwriting when you chose to overwrite existing images and an image with the same name exists
2. Click the **View Existing Assets** button to view any existing assets that may be overwritten. Click **Close** to close the report window.



Note: If there are more than 20 assets that are being imported, then the Next Page and Previous Page buttons are activated. By default there are totally 20 images that are shown in one page and the remaining in the next page.

3. If necessary, use the **Back** button to correct any errors displayed.
4. Click **Finish** to start the asset import process.
5. The **Import Status** window displays the progress of the import. As each asset is loaded, the screen updates with the percentage complete and the number of warnings.



- Click the **Details** flipper to view the status of and any warning for each imported asset.
- Click **Show Assets**, to see a multi-view display of the imported assets and their location in the hierarchy.

- Click **Stop** to halt the import process.
- Click **OK** to close the import process dialog.

Storing Assets Externally

Storing assets within STEP can greatly increase the database size. As the database grows, the time to back up the database also grows. Deleting assets from STEP does not automatically recalculate the database size, which means the backup continues to take the same amount of time. Updating the database size after asset deletion requires that the database be compressed and then restored. An effective way to avoid this whole scenario is to store assets outside of STEP, while continuing to allow them to be displayed in and exported from STEP.

Important: Assets stored outside of STEP are not supported by Stibo Systems. Storing assets externally increases your responsibility for managing the assets, as well as the management and maintenance of the selected external system.

Details about the options for storing assets externally are defined in the following sections:

- External Digital Asset Management (DAM) - where a URL is used to retrieve the asset content
- External File Structure (EFS) - where a unique file name is used to retrieve the asset content

For both of these methods, configuration asset files (such as transformation lookup tables and export configurations) will be stored within STEP.

Regardless of the method used to store assets, either in STEP or externally, assets must be linked into at least one classification, can be referenced by products and entities, can be approved, and can be imported and exported. For more information about using assets within STEP, see the **Digital Assets** topic.

External Digital Asset Management (DAM)

An external digital asset management (DAM) system stores the actual digital asset files (binary data for images, videos, etc.), while the asset object and the metadata are stored within STEP. The 'Scene7 Adapter' functionality provides the integration necessary to display the assets stored outside of STEP within the workbench or Web UI. URLs are used to retrieve the image versions, such as thumbnail and full-size, and dynamically display them in STEP. 'Scene7 Adapter' does not define how assets are managed in the external DAM, nor does it define how asset placeholders are created in STEP. For information on DAM systems, search the web.

STEP can integrate with multiple external DAMs at the same time. When more than one DAM is configured, it is good practice to uniquely identify assets across all DAMs to ensure the correct asset is retrieved by STEP. You can provide information about where the asset is stored by setting the External Identifier to include the identity of the DAM system that holds the asset.

For details on setting up and using the 'Scene7 Adapter' component, start with the **Initial Setup for an External DAM** topic.

Choosing an External DAM System

While 'Scene7' is included in the name of the component, the functionality allows integration with any DAM system that meets these criteria:

- Binary image data is accessed via HTTP(S).
- Various renderings of the asset share the same base URL and ID.

Pipelines and Renderings

The following concepts play a large role in asset management and should be understood:

- Pipelines define how STEP sizes an image based on its use. The sizes are optimized for the intended use, such as thumbnail, web, or full size. Although the same asset is displayed in each scenario, the pipeline determines the size. For more information, see the **Image Conversion** topic.
- Renderings in the external DAM system are essentially the same concept as STEP pipelines; however, the available pipeline options in STEP may not exactly match the rendering options in the DAM.

For example, consider an asset with the ID '123-456' that is rendered as thumbnail, web, and full size from the external DAM system.

Accessing each size requires the use of the following URLs:

- <http://mydam/assets/123-456/thumbnail>
- <http://mydam/assets/123-456/web>
- <http://mydam/assets/123-456/original>

The 'Scene7 Adapter' component can be used to display these renderings in STEP since the base URL (<http://mydam/assets/>) can be combined with the asset ID (123-456) and static text (thumbnail, web, or original) to generate a complete URL for a STEP pipeline.

Important: If the URL for each size uses a different asset 'ID', the component will not be effective in retrieving the various sizes.

If the external DAM in use does not use a single ID for assets (each variation has its own ID), or if assets cannot be accessed via HTTP(S) (where instead a SOAP client or some other transport method is required), contact your Stibo Systems account manager or your partner manager for additional information.

The DAM configuration must define a template for each pipeline used in a Web UI component or in the workbench, including pipelines for special scenarios outside of the standard pipelines available.

Setup Considerations

Prior to setting up an integration with an external DAM, answers to the following questions should be defined:

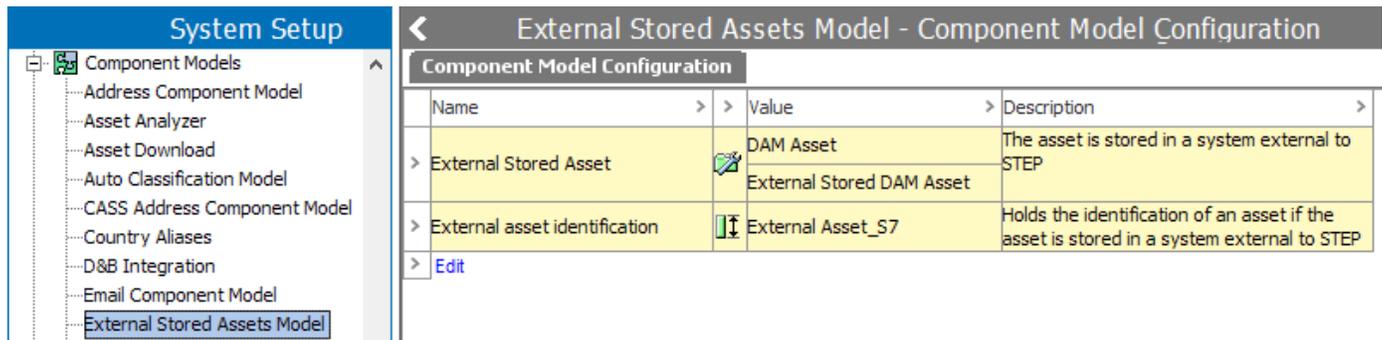
1. Where should the asset be mastered? (In STEP? In the DAM? Elsewhere?)
2. Where should the usage of the asset be mastered? (In STEP via references? In the DAM?)
3. How are deletes handled?
4. How are updates handled?
5. How is information about the existence of an asset transferred between various systems?
6. How are assets identified in STEP compared to the DAM?
7. How does STEP access the binary asset content, in order to display it to the user?

For assistance in answering these questions, contact your Stibo Systems account manager or your partner manager.

Initial Setup for an External DAM

Using 'Scene7 Adapter' requires the following one-time setup steps, including creating required elements and configuring the component model.

Review your System Setup tab to determine if the component model setup has already been completed. The selections in the Value column on your system are not required to match the ones in the image below.



This topic covers each of the items required to fully set up an external DAM:

- Enable the 'Scene7 Adapter' license
- Create the required elements
- Configure the External Stored Assets Component Model
- Set the Configuration Properties
- Set up the DAM asset creation method

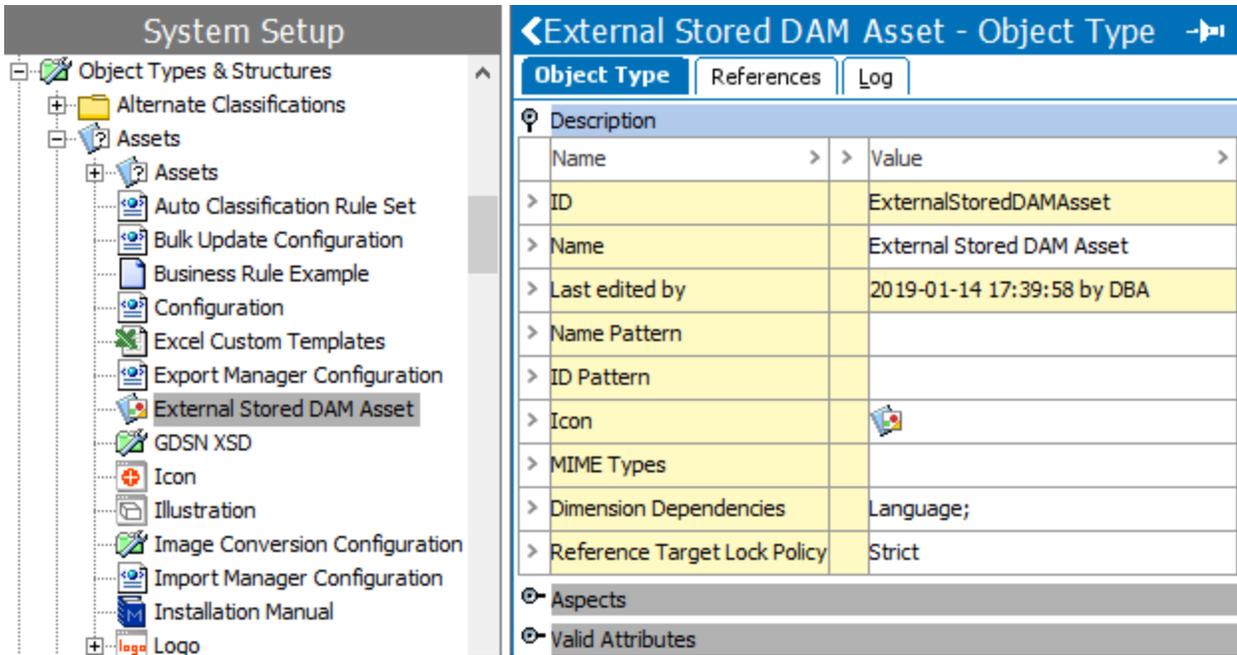
Prerequisite

Although the 'Scene7 Adapter' functionality is part of baseline, you must contact a Stibo Systems representative to activate the functionality via the X.Adapter.Scene7 license. Contact your account manager to begin the process of enabling a license or licenses for your system. When activated, the 'External Stored Assets Model' is displayed within the Component Models node in System Setup.

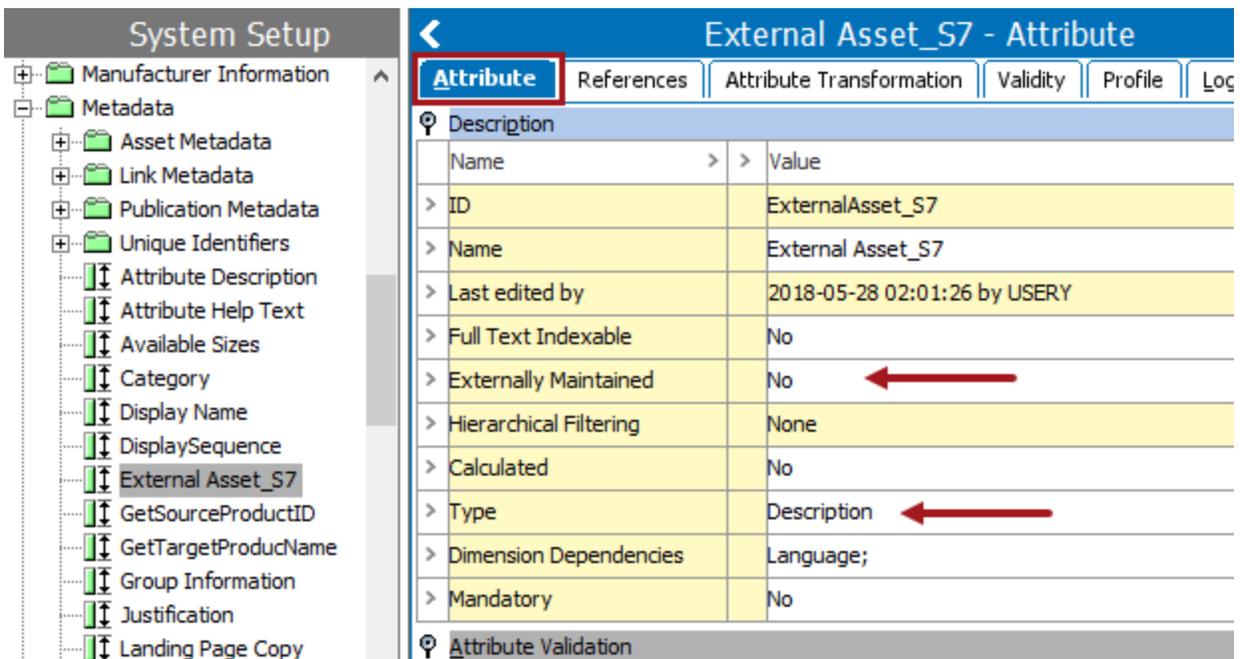
Create the Required Elements

Create one or more object types, a description attribute, and a classification for the externally stored assets.

1. In System Setup, create one or more asset object types to identify assets stored externally, as defined in the **Creating an Object Type** topic in the **System Setup / Super User Guide** documentation.



- In System Setup, create a description attribute to hold the location of the externally stored asset, as defined in the **Creating Attributes** topic of **System Setup / Super User Guide** documentation.
 - On the Attribute tab, set the Externally Maintained parameter to No.



- On the Validity tab, under the Valid for Asset Types, check the external asset object type(s) created above.

System Setup

- Manufacturer Information
- Metadata
 - Asset Metadata
 - Link Metadata
 - Publication Metadata
 - Unique Identifiers
 - Attribute Description
 - Attribute Help Text
 - Available Sizes
 - Category
 - Display Name
 - DisplaySequence
 - External Asset_S7**

External Asset_S7 - Validity

- Attribute
- References
- Attribute Transformation
- Validity**
- Profile

- Valid for Product Types
- Valid for Classification Types
- Valid for Asset Types
- All
 - Assets
 - Configuration
 - Excel Custom Templates
 - Export Manager Configuration
 - External Stored DAM Asset ←

- The attribute is displayed under the Description flipper on the defined object types.

Tree

- Assets
- Classifications
- Configurations
- eClass 10
- eClass 9.1
- ETIM7 Article Groups
- ETIM Article Groups
- Excel Custom Template
- Index Words
- Media Asset Management
 - External Images
 - 359337
 - 364368
- Merchandising Hierarchy
- Suppliers
- UNSPSC21

138204 rev.0.1 - Images & Documents

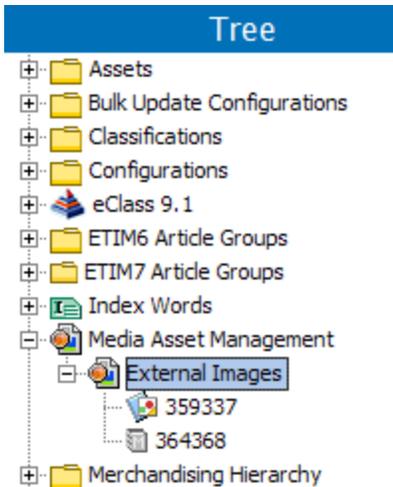
- Images & Documents
- References
- Referenced By
- Status
- State Log
- Tasks

Description

Name	Value
ID	138204
Name	138204
Object Type	External Stored DAM Asset
Revision	0.1 Last edited by USERJ on Mon Feb 18 16:20:47 EST ...
Approved	✘ Never Been Approved
Translation	Not Translated
Path	Classification 1 root/Media Asset Management/External...
External Asset_S7	abc ←

System Properties:
No System Properties

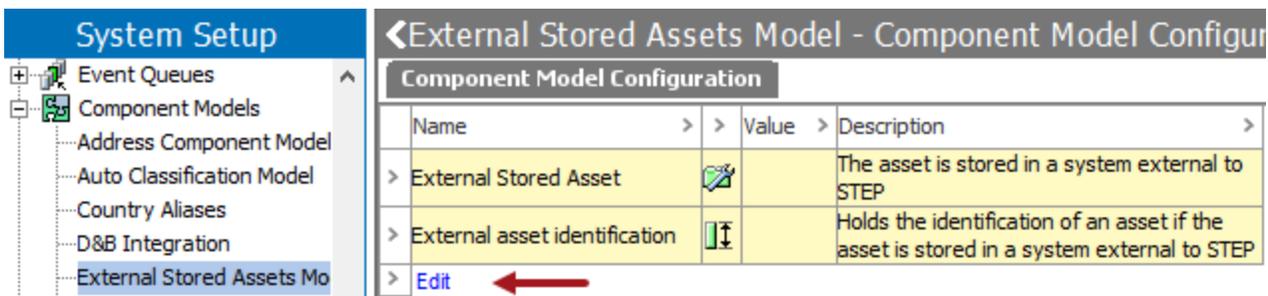
- In Tree, create a classification hierarchy to store metadata of the external assets in STEP, as defined in the **Classifications** topic in the **Getting Started / User Guide** documentation.



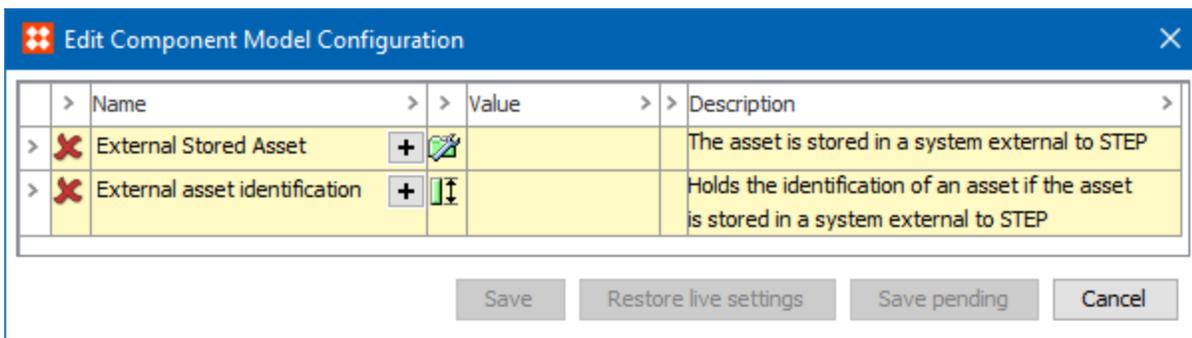
Configure the External Stored Assets Component Model

Set the newly created external asset object type and attribute in the component model.

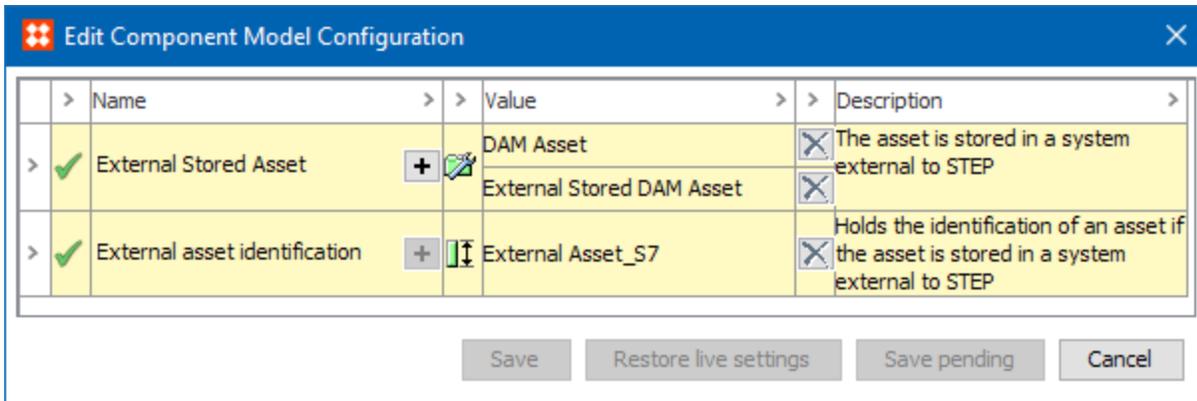
1. In System Setup, open the Component Models node, select the External Stored Assets Model node, and click the **Edit** link to open the editor.



2. Double click the plus button (+) to display a dialog to assign the required objects to the model.



- External Stored Asset: Choose the asset object type(s) that represent assets outside of STEP.
 - External asset identification: Choose the attribute that holds the ID for the external assets.
3. Make any required corrections:



- The plus button (+) remains active for parameters that allow multiple selections, such as the External Stored Asset parameter above. Select another object if required.
- Double click the delete button (X) to remove a selection.
- The first column shows the status of the parameter. A green check (✓) means the configuration has no errors; a red X (✗) means additional setup is required.
- Click the 'Save pending' button to save your work while error(s) exists.
- Click the 'Save' button to save a configuration once it has no errors.
- Click the 'Restore live settings' button to undo the changes made to a previously error-free, saved configuration.
- Click the 'Cancel' button to undo all changes made in this dialog.

Set the Configuration Properties

The sharedconfig.properties file must be configured with templates that define how the assets can be accessed. For example, consider the value in the sample 'External Stored Attribute' shown below:

Asset Attributes	
Name	Value
External Stored Asset	abc handleID://1302970_F.jpg?lang=de

The attribute value matches the following property:

```
Scene7DownloadContentPlugin.CanHandle0 = handleID://([A-Z0-9_-]*)\.*?lang=([a-zA-Z][a-zL])
```

And uses the following property to extract the thumbnail used in the workbench:

```
Scene7DownloadContentPlugin.CanHandle0.DownloadURL.thumbnail = https://asset.accord.com/media10/isa/160267/c1/-/$2/$1/PIM?x=100&y=100
```

The result is the following final URL:

```
https://asset.accord.com/media10/isa/160267/c1/-/de/1302970_F/PIM?x=100&y=100
```

Prerequisites

1. Before updating the sharedconfig.properties file on the STEP application server, determine the template type (s) required:

- **DownloadURL** is used for image download from the STEP application server, where the external identification attribute value is used to create cache files.

Important: When asset content is updated in the DAM system, the external identification attribute value should also be updated.

Images are cached on application server, and the 'Disable auto-cleanup of thumbnail cache' option should be set to 'No' for best performance. For details, see the **Image and Document Settings** topic within the **System Setup / Super User Guide** documentation.

- **ExternalURL** is used for image download directly from the client (no-caching). If an ExternalURL is not defined, images are downloaded from application server instead of from the client.
- **ExternalLocation** is used for DTD and must return a relative path to an image file.

The template type is included in several of the properties created below. The '[TEMPLATE_TYPE]' portion of the properties must be replaced with the appropriate template type option: DownloadURL, ExternalURL, or ExternalLocation.

2. Determine the required image sizes: original, web, thumbnail, or smallThumbnail.
3. Review the **External Identification Template** topic for details on creating a template.
4. Optionally, determine if multiple pattern matches are needed for the 'CanHandle' properties, and add a digit (0 to 9) as necessary. Multiple pattern matches can be implemented when more than one DAM system is used or when different URL structures are used based on MIME types, among other scenarios.

For example, the following shows two entries for the regular expressions that should be used to locate assets:

```
Scene7DownloadContentPlugin.CanHandle0 = ^sc7:/// (.*)$
```

```
Scene7DownloadContentPlugin.CanHandle1 = sc7:// (.*)
```

If only one regular expression is required, no digit is necessary, as shown below:

```
Scene7DownloadContentPlugin.CanHandle = ^sc7:/// (.*)$
```

5. Verify that the STEP Application Server can connect to the DAM server.

Create Template Properties

The sharedconfig.properties file requires several case-sensitive entries to successfully integrate with an external DAM.

1. On the STEP application server, edit the sharedconfig.properties file.
2. Create a new section within the file to hold the following required case-sensitive properties, and add the following properties.

Use the following example entries but replace all 'placeholder' text including the brackets (*[PLACEHOLDER]*) with your own template types and regular expression. See the image below for an example set of properties.

Important: Verify the `BASE_URL_FOR_DAM` correctly uses **HTTP** or **HTTPS**, based on the DAM system.

- **Scene7DownloadContentPlugin.Activated**

When 'true,' this property completes activation of the 'Scene7 Adapter' component, as shown in the following entry and the image below:

```
Scene7DownloadContentPlugin.Activated=[true or false]
```

- **Scene7DownloadContentPlugin.CanHandle**

When set, this property defines the location of the external assets, as shown in the following entry and the image below:

```
Scene7DownloadContentPlugin.CanHandle= [REG_EXP]
```

- **Scene7DownloadContentPlugin.CanHandle.[TEMPLATE_TYPE].original**

When set, this property defines the location of the original external assets that will be used by the defined template type, as shown in the following entry and the image below:

```
Scene7DownloadContentPlugin.CanHandle.[TEMPLATE_TYPE].original  
= [BASE_URL_FOR_DAM]/[REG_EXP_GROUP_FOR_ASSETID]
```

- **Scene7DownloadContentPlugin.CanHandle.[TEMPLATE_TYPE].web**

When set, this property defines the location of the web (low resolution) external assets that will be used by the defined template type, as shown in the following entry and the image below:

```
Scene7DownloadContentPlugin.CanHandle.[TEMPLATE_TYPE].web  
= [BASE_URL_FOR_DAM]/[REG_EXP_GROUP_FOR_ASSETID]/web/
```

- **Scene7DownloadContentPlugin.CanHandle.[TEMPLATE_TYPE].thumbnail**

When set, this property defines the location of the thumbnail external assets that will be used by the defined template type, as shown in the following entry and the image below:

```
Scene7DownloadContentPlugin.CanHandle.[TEMPLATE_TYPE].thumbnail = [BASE_  
URL_FOR_DAM]/[REG_EXP_GROUP_FOR_ASSETID]/Thumbnail/
```

- **Scene7DownloadContentPlugin.CanHandle.[TEMPLATE_TYPE].smallThumbnail**

When set, this property defines the location of the small thumbnail external assets that will be used by the defined template type, as shown in the following entry and the image below:

```
Scene7DownloadContentPlugin.CanHandle.[TEMPLATE_TYPE].smallThumbnail =  
[BASE_URL_FOR_DAM]/[REG_EXP_GROUP_FOR_ASSETID]/smallThumbnail/
```

- If more than one 'CanHandle' is required, use an integer to ensure the 'CanHandle' entries are unique, and verify the external definitions also use the appropriate 'CanHandle' value. For example, two separate 'CanHandle' entries (CanHandle0 and CanHandle1) are shown in the following entry (but are not used in the image below):

```
Scene7DownloadContentPlugin.CanHandle0.[TEMPLATE_TYPE].original = [BASE_  
URL_FOR_DAM]/[REG_EXP_GROUP_FOR_ASSETID]]
```

```
Scene7DownloadContentPlugin.CanHandle1.[TEMPLATE_TYPE].original = [BASE_  
URL_FOR_DAM]/[REG_EXP_GROUP_FOR_ASSETID]]
```

Important: In the example below, STEP assumes that the External Identification value defined on each DAM asset is a fully qualified URL, and attempts to extract the External Asset ID from the URL component.

```

#-----#
# External DAM Settings
#-----#

Scene7DownloadContentPlugin.Activated=true
Scene7DownloadContentPlugin.CanHandle= ^http://(.*)/(.*)/(.*)$
Scene7DownloadContentPlugin.CanHandle.DownloadURL.original= http://mydam/assets/$3
Scene7DownloadContentPlugin.CanHandle.DownloadURL.web= http://mydam/assets/$3/web/
Scene7DownloadContentPlugin.CanHandle.DownloadURL.thumbnail= http://mydam/assets/$3/Thumbnail/
Scene7DownloadContentPlugin.CanHandle.DownloadURL.smallThumbnail= http://mydam/assets/$3/smallThumbnail/

```

Important: Additional properties that can be used in the case of proxy servers, from the Start Page, log in to the Administration Portal and search for 'Scene7' on the Configuration tab. For more information, see the **Configuration** topic in the **Administration Portal** documentation.

3. Restart the STEP server to apply the sharedconfig.properties file changes.

Setting Up the DAM Asset Creation Method

External DAM placeholder assets (those with the object type defined in the component model) can be created in a variety of ways, and the most likely are listed below. Additional configuration may be required, as defined in the documentation outside of this section.

Note: Methods used to create assets with binary content are not applicable for creating a DAM asset because DAM assets are only placeholders in STEP and the binary content is held outside of STEP.

- Manually - see the **Maintaining Assets** topic in the **Getting Started / User Guide** documentation.
- Import Manager - see the **Creating a Data Import** topic in the **Import Manager** section of the **Data Exchange** documentation.
- IIEP using the REST Receiver - see the **Creating an Inbound Integration Endpoint** topic and the **REST Receiver** topic in the **IIEP** section of the **Data Exchange** documentation.
- Web UI - see the **Asset Importer in Web UI** topic in the **Web User Interfaces / Web UI Setup and User Guide** documentation.
- SOAP API - click the **STEP API Documentation** button on the STEP Start Page.

External Identification Template

The 'Scene7 Adapter' functionality constructs URLs to access external asset data with the value extracted from the external identification attribute defined on the asset stub. A regular expression can be assigned to the 'CanHandle' properties in the sharedconfig.properties file to extract the value from the external identification attribute as needed. For details on the properties, see the **Set the Configuration Properties** section of the **Initial Setup for an External DAM** topic.

The goal is to define the template in a way that makes the configuration scalable and capable of handling future requirements. The value template and the Regular Expression play an important role if multiple 'CanHandle' definitions are required. For more information, see the **Regular Expression** section of the **Resource Materials** online help.

For example, the following template is used as the external identification value on DAM Assets:

```
<assetID>/<AssetRevision or timestamp>
```

The value is composed of two components: the ID of the asset as defined in the external system and a revision value for thumbnail caching. The components are separated by a forward slash (/).

On an asset, the value using the above template would be:

```
123-456-789/v1.0
```

For the 'CanHandle' property for external integration, the following Regular Expression is used to extract the ID and the version/timestamp from the above template in two groups. Then the URLs are composed to fetch assets from the external system.

```
^(.*?)/(.*?)$
```

The above expression extracts assetID and version/timestamp as groups 1 and 2, which can be used in URL compositions as \$1 and \$2, respectively.

Assuming the sharedconfig.properties setting is:

```
Scene7DownloadContentPlugin.CanHandle.ExternalLocation.thumbnail =  
http://mydam/assets/$1/Thumbnail/
```

A thumbnail URL for the example will be composed as:

```
http://mydam/assets/123-456-789/Thumbnail/
```

External File Structure (EFS)

To reduce the size of the database significantly, assets can be stored in an external file system (EFS) on the STEP application server rather than in the STEP database itself.

Although asset storage is set to be the file system, when no content is found for an asset in the file system, the asset content is fetched from the STEP database. This makes it possible to migrate assets from the database to the file system without users experiencing missing asset content during the migration process.

No noticeable application performance degradation is registered in the various asset scenarios by storing assets in the file system compared to database storage.

Important: Management of the EFS (including maintenance and back up) is the responsibility of the customer and is not supported by Stibo Systems.

EFS File Names

The files and directory structure of the digital assets should be considered as a strictly internal part of the STEP system, should only be manipulated via the STEP server application, and should never be touched manually. Because modifications to assets within the EFS can jeopardize asset look-up and asset versions, a hashing algorithm is used for storing the files, making it impossible to identify the digital assets in the file structure from the file names.

The file name used for EFS assets is composed of a hashed STEP ID, a STEP Unique ID (UID), and a checksum. The UID includes dimension dependency and revision number data. The result is a file name similar to the following example:

```
98491cf212354426fede22b5b390d86dd5c9cd82_FS_0idk6sae3-0mtniy1-0vq55rb9yneo0_af1fd43d254f6ae1c0db702e17911ccd31e4e743.jpg
```

The EFS uses a fixed three-level folder structure, calculated using the first six characters of the hashed STEP ID. Continuing with the sample file name above, and assuming an external file root location of 'L:/ExternalFileSystem,' the path and file name would be as follows:

```
L:/ExternalFileSystem/98/49/1c/98491cf212354426fede22b5b390d86dd5c9cd82_FS_0idk6sae3-0mtniy1-0vq55rb9yneo0_af1fd43d254f6ae1c0db702e17911ccd31e4e743.jpg
```

The asset content is stored using a 'write once' algorithm, which means that STEP never updates the content of the EFS file even if new asset content is uploaded to the asset. Instead, a new file is created in the EFS with the new content and the old content file is left untouched.

Dimension Dependent Assets

The EFS supports the situation where assets are declared as dependent on one or more dimension points. The unique ID used for each asset stored in the EFS includes information about dimension dependency. When separate assets exist based on a dimension, a separate UID is generated to store the assets in the EFS.

For example, an asset exists in STEP, and the file is stored in the EFS. A new asset is added to STEP with the same ID as the existing asset but while in a different context. This results in an additional file to be sent to the EFS.

The calculated UID of the newly uploaded asset includes the dimension dependency. Since the hashed STEP ID of the asset is the same as the existing asset, the new asset is placed in the same folder structure as a 'sibling' to the existing asset.

Asset Revisions

If an asset's content is updated, a new revision number is generated in STEP, and an additional file is generated in the EFS. The UID includes the revision number, and since the hashed STEP ID is the same as the former revision, the new file is saved as a 'sibling' to the existing file in the same folder structure.

Setting Up and Using an EFS

For additional information on setting up and using an EFS, see the following topics:

- Initial Setup for an External File Structure
- Maintaining an External File Structure

Once an EFS is configured, Asset Push can be used to make the required assets available to downstream systems, as defined in the **Asset Push** topic.

Initial Setup for an External File Structure

Using an External File Structure (EFS) requires the following one-time setup steps, including creating required elements.

This topic covers each of the items required to fully set up an EFS:

- Determine the storage location
- Configure the EFS
- Migrate assets to the EFS
- Purge old asset revisions

After the initial setup is complete, see the **Maintaining an External File Structure** topic for information about verifying the state of the assets and database maintenance.

Determine the Storage Location

Consider your own data model when reviewing the following scenarios that require access to assets to determine the best location for mounting the EFS storage.

Important: The EFS storage must be accessible by the STEP application server via NFS on Linux or CIFS on Windows.

- **Importing assets** - Assets imported to the EFS either use a hotfolder on the STEP application server or the image file is uploaded from a client application. In both cases, STEP application server picks up and processes the image file by the creating a placeholder in the database and by generating the thumbnail and preview as JPG files stored in the image cache on the workarea disk partition, before saving the original image file to the asset file system storage.

The STEP application server benefits from having the asset file system storage mounted on the server itself.

- **Editing assets** - Editing the image file for assets already in the system are read from the EFS and a new image file is saved to the EFS upon completion. That means that the existing image file on the asset file system storage will never change.

The operation is handled by the STEP application server, and the STEP application server benefits from having the asset file system storage mounted on the server itself.

- **Asset Push** - Asset Push is used to export assets. When an image file is imported to STEP or when an existing asset in STEP is updated / edited, an event is triggered on the Asset Push Event Queue. The Asset Push queue processes the event and converts and exports the asset content as a file into the file system for low resolution Asset Push images. Existing image files with the same ID as the one being exported are overwritten so only the most current version is stored. While the Asset Push process can run anywhere, the extraction of the asset content and the conversion of the image data takes place on the STEP application server and is handed over to the Asset Push process wherever it is running.

The STEP application server benefits from having the asset file system storage mounted on the server itself.

Configure the EFS

The following settings must be made prior to using an EFS.

1. On the STEP application server, edit the sharedconfig.properties file and create a new section within the file to hold the case-sensitive **FileSystemStorage.Root** property, following the example below.

Replace the 'placeholder' text and the brackets (*[PLACEHOLDER]*) with your own data.

FileSystemStorage.Root = *[asset_storage_root]*

For example:

```
FileSystemStorage.Root = L:/ExternalFileSystem
```

2. Restart the application server to apply the changes to the sharedconfig.properties file.
3. In workbench, on System Setup tab, click on the Users & Groups node to display the System Settings tab in the editor.
4. Open the Image & Document Settings flipper, and set the **Store assets and DTP documents in** property to 'File System.' For more information, see the **Image and Document Settings** topic in the **System Setup / Super User Guide** documentation.

Migrate Assets to the EFS

Migrating existing assets from the database to the EFS storage can be time consuming and must be planned carefully. The operation uses a background process and depending on the number of assets, the migration can run from a few hours to several days.

Important: Assets do not all have to be migrated to the EFS at once. Instead, the process can be set to run based on selected classification nodes.

After a complete migration of assets to the EFS, only 'special' assets, such as configuration files, transformation lookup tables, etc., will be held within STEP.

Prerequisite

Determine if a dedicated queue should be used to control the load on the system.

By default, the migration background process will run on the MISC queue, which is also used to run a variety of background processes. This means that the MISC queue will be processing work for other STEP activities in addition to the migration of assets to the EFS. For more information, see the **Default Configuration for Background Process Queues** topic in the **System Setup / Super User Guide** documentation.

Creating a dedicated queue allows the asset migration to run in parallel with other background processes.

Perform the following steps if a dedicated queue is desired.

1. On the STEP application server, edit the sharedconfig.properties file and in the EFS section, add the case-sensitive **BackgroundProcess.ProcessType.MigrateAssets.Queue** property, following the example below.

Replace the 'placeholder' text and the brackets (*[PLACEHOLDER]*) with your own data.

BackgroundProcess.ProcessType.MigrateAssets.Queue = [my_queue]

For example:

```
BackgroundProcess.ProcessType.MigrateAssets.Queue = AssetMigration
```

2. In the sharedconfig.properties file EFS section, add the case-sensitive **BackgroundProcess.Queue.[my_queue].Size** property, following the example below. Setting the queue size allows the background process to migrate assets in parallel, effectively splitting the migration job into minor parts by selecting sub-classifications in the image hierarchy.

Important: Do not set the queue size higher than the number of threads that the application server can handle. You must allow room for normal STEP operations to continue during the migration.

Replace the 'placeholder' text and the brackets (*[PLACEHOLDER]*) with your own data.

BackgroundProcess.Queue.[my_queue].Size = [size]

For example:

```
BackgroundProcess.Queue.AssetMigration.Size = 3
```

In this example, a size of 3 means that a three migration jobs can run at the same time on each application server configured for handling background processing. If two application servers are in use, a total of 6 background migration jobs can run in parallel.

3. Restart the application server to apply the changes to the properties file.

Start the migration process

Migrating asset moves the newest revision of an asset to the EFS.

1. In workbench, on Tree, select one or more asset classification nodes.
2. On the File menu, click the **Migrate assets/DTP documents to the file system** option.
3. On the starting process dialog, click the **Go to process** button to monitor the background process. On the BG Processes tab, check under the **Migrate assets/DTP documents to the file system** node.

Purge old asset revisions

Since the migration process only moves the top revision of an asset to the EFS, the remaining versions should be purged manually.

For detailed instructions, see the **Manually Purging Multiple Revisions** section of the **Maintaining Revisions** topic in **System Setup / Super User Guide** documentation.

Maintaining an External File Structure

Once the external file structure (EFS) setup is complete, as defined in the **Initial Setup for an External File Structure** topic, maintenance tasks can be performed from within workbench.

The following maintenance actions are available:

- Integrity check
- Backup

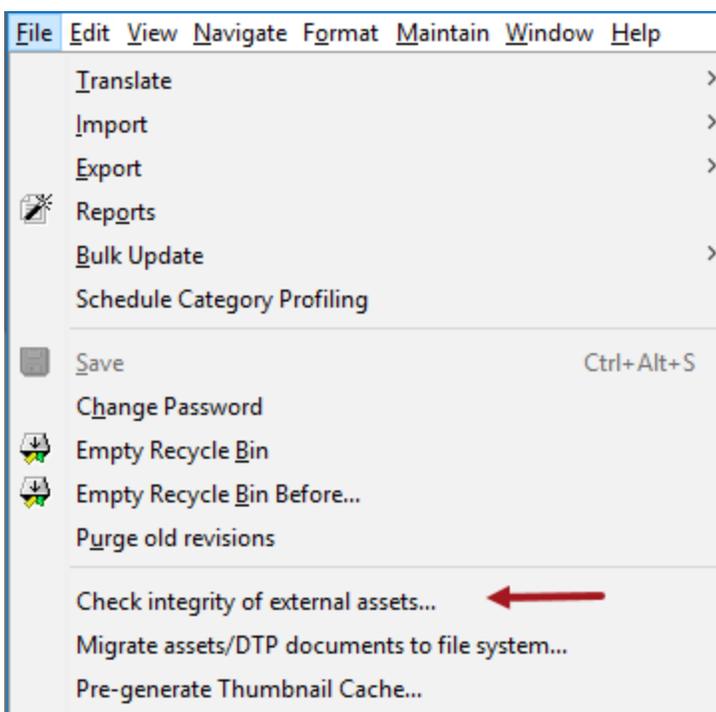
Integrity Check

Checking the integrity of an EFS from workbench involves two parts:

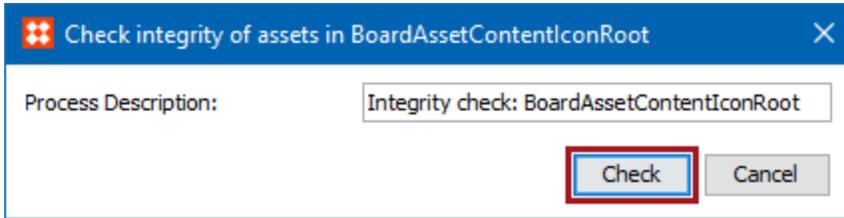
- Forward check determines if an asset in the selected classification node in STEP is missing the image file in the EFS. The assets with missing image files are added to a collection.
- Backward check determines if any image file in the EFS is missing a matching asset in STEP. All assets in the EFS are compared to all revisions of the STEP entry, not just those in the selected classification folder. The images not recognized by STEP are listed in a flat text file.

Use the following steps to run the integrity check and correct the problems when necessary.

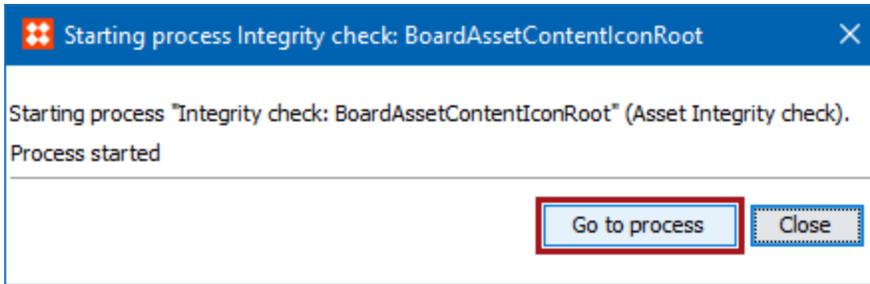
1. In workbench, in the Tree, select one or more asset classification folders.
2. On the File menu, click the **Check integrity of external assets** option.



3. On the 'Check integrity of assets in' dialog, click the **Check** button.

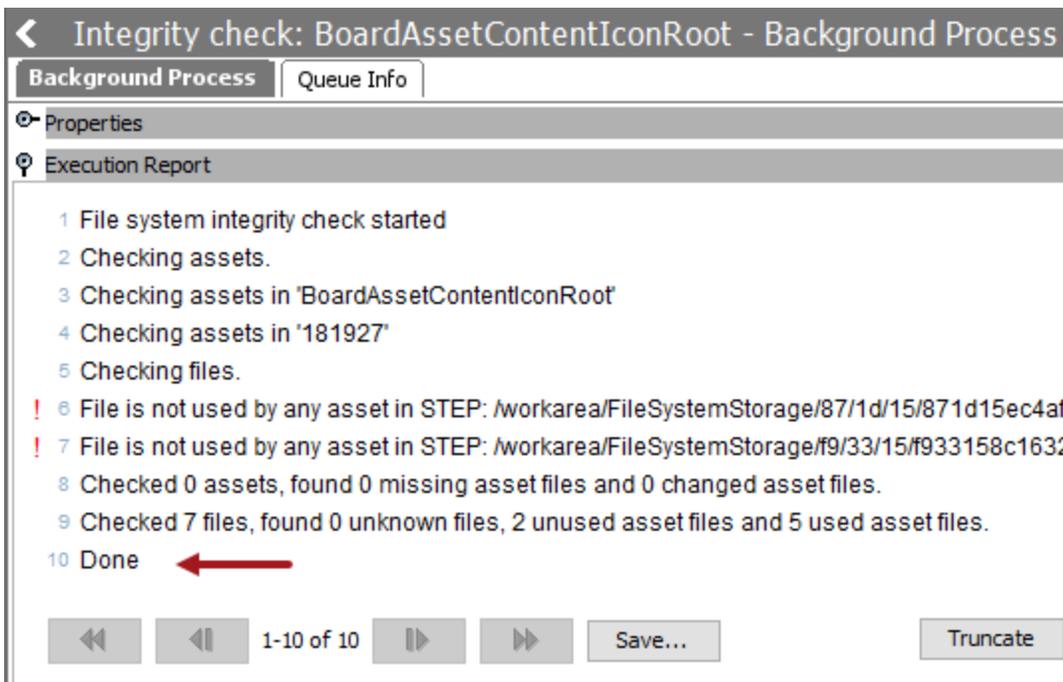


- On the starting process dialog, click the **Go to process** button to monitor the background process. On the BG Processes tab, monitor the status of the background process under the 'Asset Integrity check' node.



- Verify that the Execution Report flipper shows that the Integrity Check has completed. The last row of the report is 'Done.'

Note: Any file found in the external structure that is not recognized as a STEP asset is reported in the Execution Report as an 'unknown' file. These files are not included in the unused.txt file.



6. Open the Result flipper and if the **Error collection** parameter includes a URL link, complete the following steps:
 - Click the URL link to open the error collection and click the Tree tab to display the collection.
 - Expand the collection.
 - Select an asset, right-click and select **Replace asset content** option.
 - Browse to the location of the asset, and select it to replace the asset.
 - Repeat for all assets in the collection.

← Integrity check: Tool Kits - Background Process

Background Process		Queue Info
⊖ Properties		
⊖ Execution Report		
⊕ Result		
Checked assets	6	
Missing asset files	1	
Changed asset files	0	
Checked files	5	
Unknown files	0	
Unused asset files	0	
Used asset files	5	
Error collection	step://collection?id=BGP_288829-Error+assets	



7. On the Result flipper, if the **Download list of unused asset files** parameter includes the 'unused.txt' flat text file, open the file to review the external assets not currently being used by any revision in STEP. No action is required for the items in this file as these are not necessarily errors to be corrected.

The following scenarios can cause entries in this file:

- A purge of assets in STEP, so the references to the EFS were deleted, but the EFS image files remain.
- An asset is imported to STEP that overwrites an existing asset. The new asset is placed in the EFS, and the asset that it replaces is no longer used.

Integrity check: BoardAssetContentIconRoot - Background Process

Background Process Queue Info

Properties

Execution Report

Result

Checked assets	0
Missing asset files	0
Changed asset files	0
Checked files	7
Unknown files	0
Unused asset files	2
Used asset files	5
Download list of unused asset files	unused.txt  

Backup

When storing assets in the STEP database, backup consistency is guaranteed using Oracle RMAN for backing up all production data. When assets are stored in an EFS, the backup procedure is more complicated because data needs to be secured in the database as well as the image files in the EFS, and the two backups must synced as closely as possible. While it is difficult to synchronize the two backups, restore an EFS backup that is slightly newer than the database backup to guarantee that image files referred from the database will also exist in the EFS.

Important: A benefit of an EFS is that backup procedure performance on the database is faster when assets are stored outside the STEP database (as opposed to storing assets inside the STEP database).

The write-once algorithm used by the EFS allows the EFS backup procedure to be optimized by backing up only new files. With the 'write-once' method, files are not modified, instead, every change to an asset generates a new image file in the asset file system storage.