Hewlett Packard Enterprise

# HPE Enterprise Maps

Software Version: 3.10
Windows and Linux Operating System

## Taxonomy Editor User Guide

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# Contents

# Chapter 1: Taxonomy Editor Guide

Welcome to the *Taxonomy Editor User Guide*. This guide describes how to use Taxonomy Editor as part of HPE Enterprise Maps (HPE EM).

This guide contains the following chapters:

# Chapter 2: Taxonomy Editor

HPE Enterprise Maps is a set of HPE EM Workbench features that enable you to manage taxonomies in HPE EM.

You can use Taxonomy Editor to create, modify, and delete taxonomies. You can also download taxonomies from, or upload them to, any number of HPE EM servers.

This chapter introduces Taxonomy Editor in the following sections:



# HPE EM Workbench Suite

HPE EM Workbench is a suite of editor tools enabling you to customize your deployment of HPE EM.

HPE EM Workbench consists of the following editor tools, distributed as a single Eclipse development platform:

- Customization Editor

  Customizes the underlying System Data Model (SDM) within HPE EM.
- Taxonomy Editor

  Customizes the taxonomies used to categorize artifacts in HPE EM.
- Assertion Editor

  Customizes the conditions applied by your business policies within HPE EM.
- Report Editor

  Customizes report definitions for use with HPE EM.

# Overview

Taxonomies are, in their simplest form, a visual representation of what your organization actually knows. A well-constructed, meaningful taxonomy enables users in your organization to quickly find the information they need to achieve their goals.

Taxonomy Editor enables you to organize and reorganize content easily, giving more flexibility for knowledge sharing in your organization

Use Taxonomy Editor to do the following:

1. **Create a Taxonomy Project.**

   For details, see the following sections:

- "Creating a Taxonomy Project" on page 17
- "Downloading Taxonomies from a Server" on page 18
- "Searching for Taxonomies" on page 18

2. **Create and Manage Taxonomies.**
   For details, see the following sections:
   - "Creating Taxonomies" on page 21
   - "Editing Taxonomies" on page 21
   - "Editing Categories" on page 22
   - "Deleting and Restoring Taxonomies" on page 24
   - "Comparing Taxonomy Files" on page 25
   - "Updating Taxonomies from the Server" on page 25
   - "Importing and Exporting Taxonomy Files" on page 25
3. **Publish taxonomies to an HPE EM server.**
   For details, see the following sections:
   - "Publishing Taxonomies" on page 27
   - "Deploying Taxonomies" on page 27
4. **Check local validity and manage conflicts.**
   For details, see "Conflicts and Validation Issues" on page 32.

# User Interface

The default perspective is split into a number of sections, with menu options across the top.

The platform perspective consists of the following views:

- **Project Explorer**
  The tree view of your taxonomy projects. For details, see "Project Explorer" on the next page.
- **Server Explorer**
  The view listing HPE EM server connections to the HPE EM Workbench. For details, see "Server Explorer" on page 11.
- **Editor**
  The view showing the components of the taxonomy. For details, see "Editor View" on page 11.

# Project Explorer

Project Explorer contains a hierarchical list of projects, the taxonomies in each project, and the categories and subcategories of each taxonomy, as shown in the following screenshot.

The Project Explorer contains additional context menu options enabling you to interact with a running HPE EM server. Right-click the project name or a particular assertion, and select **HPE EM** to view the options listed in the following tables.

### Project Context Menu Options

| Option | Function |
|---|---|
| Download Taxonomies | Import taxonomies from HPE EM. For details, see "Downloading Taxonomies from a Server" on page 18. |
| Upload to Server | Export taxonomies to the default HPE EM server. For details, see "Publishing Taxonomies" on page 27. |
| Update from Server | Update taxonomies from HPE EM. For details, see "Updating Taxonomies from the Server" on page 25. |
| Remove from Server | Delete taxonomies from HPE EM. For details, see "Deleting and Restoring Taxonomies" on page 24. |
| Upload To Other Server | Export taxonomies to a specified HPE EM server. |
| Build Extension | Create a taxonomy extension for HPE EM containing all the taxonomies in your project. For details, see "Building a Taxonomy Extension" on page 28. |

### Taxonomy Context Menu Options

| Option | Function |
|---|---|
| Upload to Server | Export a taxonomy to the default HPE EM server. For details, see "Publishing Taxonomies" on page 27. |
| Update from Server | Update a taxonomy from HPE EM. For details, see "Updating Taxonomies from the Server" on page 25. |
| Remove from Server | Delete the taxonomy from HPE EM. For details, see "Deleting and Restoring Taxonomies" on page 24. |
| Upload To Other Server | Export a taxonomy to a specified HPE EM server. |
| Validate Data Consistency | Check the validity of the taxonomies. For details, see "Conflicts and Validation Issues" on page 32. |
| Show Taxonomy Usage | Find the artifacts that use the taxonomy for categorization. For details, see "Conflicts and Validation Issues" on page 32. |
| Compare With Latest From Server | Compares the selected taxonomy with the latest version on the server. |

Taxonomy Context Menu Options, continued

| Option | Function |
|---|---|
| Build Extension | Create a taxonomy extension for HPE EM containing all the taxonomies in your project. For details, see "Building a Taxonomy Extension" on page 28. |

# Server Explorer

The Server Explorer displays the HPE EM servers connected to HPE EM Workbench. The functionality is shared by all the HPE EM Workbench editors.

Right-click a server in the Server Explorer to open the context menu described in the following table.

Server Explorer Context Menu Options

| Option | Function |
|---|---|
| New Server | Add a server for downloading assertions and taxonomies (Assertion Editor, Taxonomy Editor, and Customization Editor). |
| Remove Server | Delete a server from the Server Explorer. |
| Download Taxonomy | Download a taxonomy from a server (Taxonomy Editor and Customization Editor). |
| Download Assertion | Download assertions from a platform server (Assertion Editor). |
| Download Report | Download reports from a reporting server (Report Editor). |
| Properties | View and edit the server name, URL, username, and password. |

# Editor View

The Editor pane is the main feature of the Taxonomy Editor UI.

It has four tabs, described in the following sections:

- **Overview Tab**

  The Overview tab shows the components of the taxonomy.

  The first section is General Information, where you can view and edit the following properties:

  - **Name**

    Name for the taxonomy. The content of the `name` element in the taxonomy's XML representation.

  - **Taxonomy ID**

    Identifier for the taxonomy, with the preceding `uddi:`. The value of `tModelKey` attribute in the taxonomy's XML representation.

- **Description**

  Description of the taxonomy (optional).

The second section is Origin, which shows:

- **Resource URL**

  REST interface URL enabling the published taxonomy to be viewed on the server.

- **Value Display Format**

  These options allow changing how the value is presented.

- **Categories Tab**

  The Categories tab enables you to change the structure and properties of taxonomy categories.

  You can use the Categories tab to do the following:

  - "Adding a Category" on page 23
  - "Removing a Category" on page 23
  - "Copying a Category" on page 23
  - "Moving a Category" on page 24

- **Advanced Tab**

  The Advanced tab enables you to set properties used with UDDI.

  It is divided into the following sections:

  - **Compatibility**

    Enables you to select one or more of the main UDDI structures for the taxonomy. For example, businessEntity, businessService, bindingTemplate, and tModel.

    All structure types are selected by default which is the required setting if you want your taxonomy to integrate with UDDI Registry.

  - **Categorization**

    Enables you to select from the following taxonomy types:

    - **categorization**

      Tags the UDDI structure with additional information, such as identity, location, and description.

    - **categorizationGroup**

      Groups several categorizations into one logical category. For example, a `categorizationGroup` could be a geographical location comprised of two categorizations: longitude and latitude.

      The `categorizationGroup` option is disabled if the taxonomy has any categories.

    - **Identifiers**

      Reference published information in businessEntities and tModels.

    - **Relationships**

      Defines the relationship between two businessEntities in Publisher Assertions.

  - **Validation**

Sets whether or not the values in `keyedReferences` within the taxonomy are checked. The validation service can check the expected syntax of values. For example, a credit card number or an ISBN number.

Validation can be against Taxonomy Editor's internal validation service or against an external service.

To select an external validation service, do one of the following:

- Enter the endpoint URL.
- Leave `keyedReferences` unvalidated.

- **Reference**

  Enables you to add a reference to a key type.

- **Value Type**

  Enables you to Select a Value type for `keyValues`, using one of the following comparators:

  - **em-com.comparator.string**

    keyValues are treated as string values. The maximum length is 255 characters.

  - **em-com.comparator.numeric**

    keyValues are treated as decimal numbers. The value can have a maximum of 19 digits before the decimal point and a maximum of 6 digits after the decimal point.

  - **em-com.comparator.date**

    keyValues are treated as dates.

  - **custom**

    Endpoint URL of a custom comparator.

- **Source Tab**

  The Source tab enables you to view and directly edit the XML representation of the taxonomy.

# Chapter 3: Getting Started

This chapter describes the prerequisites for working with taxonomies in Taxonomy Editor. It contains the following sections:



# Installing HPE EM Workbench

HPE EM is an Eclipse development platform distributed as a zip file, `hpe-em-workbench-3.10-win64.zip`.

**Note:** HPE EM requires Java SE Development Kit (JDK) 1.8.0 (64 bit version only) or higher. You must include the path to this version of the JDK in the `JAVA_HOME` environment variable.

**To install Enterprise Maps as a new Eclipse platform**:

- Extract the archive to your required location, referred to in this document as WB_HOME.

  **Note:** The path must not be longer than 97 characters.

**To Start HPE EM:**

- Execute **WB_HOME/workbench/start.exe**.

The first time you start HPE EM Workbench, the welcome screen opens.

Select one of the options to open one of the editor tools, start a new editing project, or view the documentation set.

You can return to the welcome screen from any of the editor tools by selecting **Help > Welcome** from the menu options.

**Tip:** By default, HPE EM Workbench runs in 'normal' mode which prevents users from uploading system taxonomies (IDs start with `uddi:systinet.com:soa:model:taxonomies`) and the Report Editor `.rptlibrary` file to HPE EM servers. If you need to work with system taxonomies or want to upload the `.rptlibrary` file you can switch HPE EM Workbench into 'admin' mode.

**Caution:** Be extremely careful when working with system taxonomies, HPE EM uses some hard-coded values from system taxonomies. Changing or removing them may cause errors.

**To Switch HPE EM Workbench to Admin Mode**

1. Open `WB_HOME/configuration/config.ini` with a text editor.
2. Add `mode=admin` to `config.ini`.
3. Restart HPE EM Workbench.

**Tip:** HPE Enterprise Maps is memory-intensive. If you experience performance issues, HPE recommends increasing the memory allocation.

**To increase the memory allocation for HPE Enterprise Maps:**

1. Open `WB_HOME/workbench/start.ini` for editing.
2. Set these new values:
   - `-Xms128m`
   - `-Xmx1024m`
3. Save your changes.
4. Restart HPE EM Workbench.

**Tip:** HPE Enterprise Maps downloads from HPE EM may time out. If you experience issues, HPE recommends increasing the time out.

**To increase the time out for HPE Enterprise Maps:**

1. Open `WB_HOME/workbench/start.ini` (or `eclipse.ini` for stand-alone installation) for editing.
2. Set the new value:

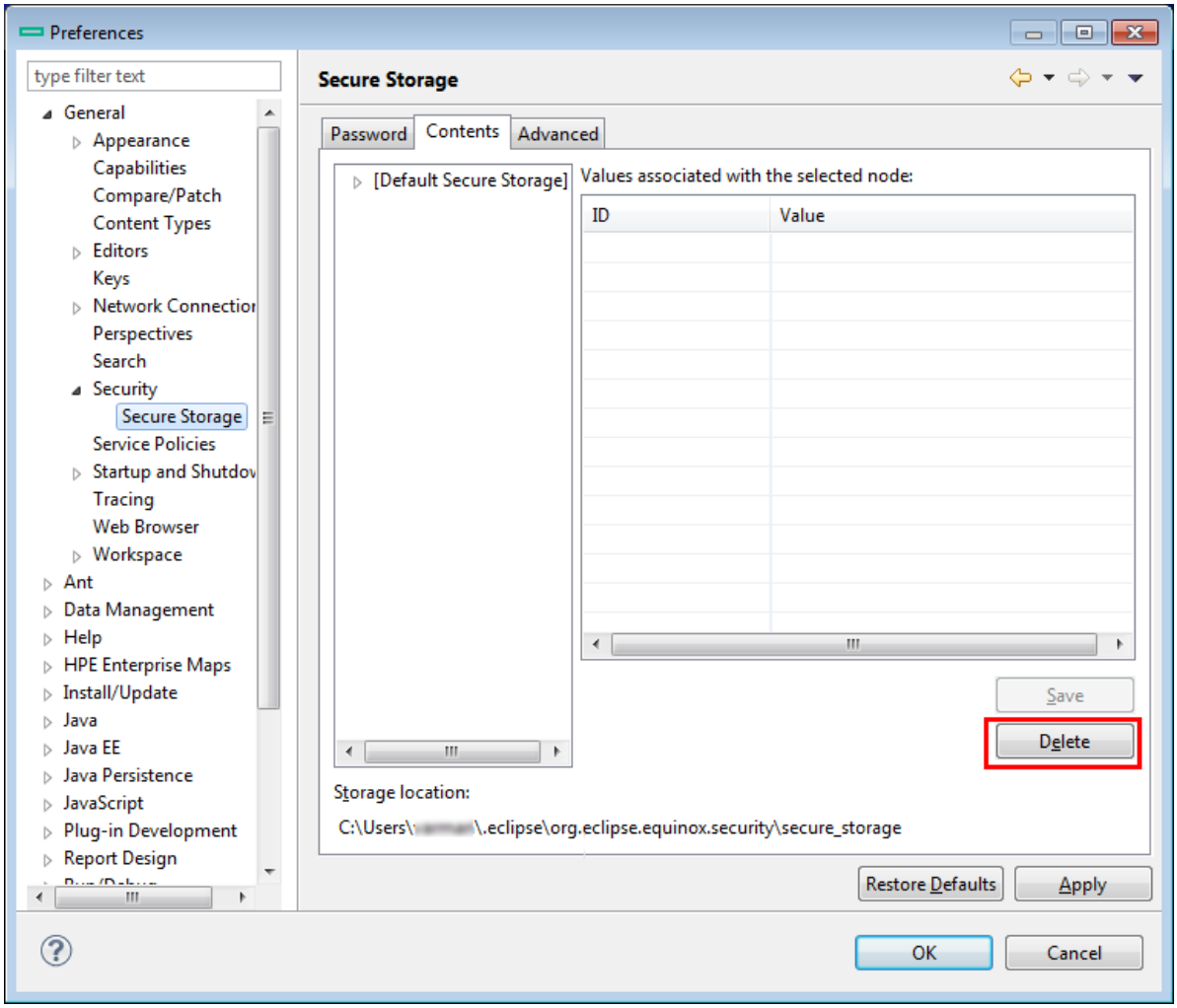
   `-Dorg.em.platform.rest.Client.timeout=200000`

   The value is in milliseconds with a default value of 120000 (2 minutes).
3. Save your changes.
4. Restart HPE EM Workbench.

**Tip:** HPE EM Workbench may fail to store saved credentials of servers. In such cases, HPE recommends clearing the secure storage.

**To reset the secure storage for Enterprise Maps server credentials:**

1. In Enterprise Maps, go to **Windows > Preferences > General > Security > Security Storage > Contents** tab.
2. Click root node **Default Secure Storage** and then click **Delete** button.




3. Restart the Workbench.

# SSL Configuration

By default, HPE EM Workbench trusts all HPE EM server certificates. You may want HPE EM Workbench to verify HPE EM certificates.

**To Verify HPE EM Server Certificates:**

- Add the following options to `WB_HOME/workbench/start.ini`:

```
-Dcom.hp.em.security.ssl.verifyCert=true
-Djavax.net.ssl.trustStore=USER_TRUSTSTORE
-Djavax.net.ssl.trustStorePassword=TRUSTSTORE_PASS
-Djavax.net.ssl.trustStoreType=TRUSTSTORE_FORMAT
```

If HPE EM is configured for 2-way SSL, you must provide HPE EM Workbench certificates to HPE EM.

**To Provide HPE EM Workbench Client Certificates to HPE EM:**

- Add the following options to `WB_HOME/workbench/start.ini`:

```
-Djavax.net.ssl.keyStore=USER_KEYSTORE
```

```
-Djavax.net.ssl.keyStorePassword=KEYSTORE_PASS
-Djavax.net.ssl.keyStoreType=KEYSTORE_FORMAT
```

# Creating a Taxonomy Project

To work with taxonomies, you need a Taxonomy Project. You can create any number of Taxonomy Projects to help organize your work.

**To Create a Taxonomy Project:**

1. Do one of the following:
   - In the HPE EM Workbench Welcome page, click **Create Taxonomy Project**.
   - Click **New** to open the Select a Wizard window, and select **HPE EM > Taxonomy Project**.
   - From the menu, select **File > New > Taxonomy Project**.
   - Press **Alt+Shift+N**, and then press **R**, to open the Select a Wizard window. Then select **HPE EM>Taxonomy Project**.

   The New Taxonomy Project dialog box opens.
2. In the New Taxonomy Project dialog box, enter the following parameters:

| Parameter | Definition |
|---|---|
| Project Name | The name of your assertion project. |
| Taxonomy ID Prefix | The URN prefix to apply to all taxonomies in the project. |
| Create from Existing Extension | Select this option if you want to create a new project from a previous taxonomy extension. If selected, input the path or browse for the location of the taxonomyn extension. |
| Use Default Location | If selected, Taxonomy Editor stores the project in your default workspace. If unselected, input the path or browse for an alternative workspace. |

3. Click **Next** to select or create a server.

   **Note:** If no servers are currently defined, the dialog box continues to step 5.
4. Do one of the following:
   - Select **Create a New Server**, and click **Next**.

     Continue to step 5.
   - Select **Use an Existing Server**, select the server from the list and input its credentials, and then click **Next**.

     Continue to step 6.
5. In the New Server dialog box, add the required parameters, and then click **Next**.
6. Select the taxonomies to download from the server. Optionally, select **Show System Taxonomies** to

view system taxonomies for selection.

7. Click **Finish**.

# Customizing Taxonomy Editor

Some settings are customizable in Taxonomy Editor.

**To Change Taxonomy Editor Preferences:**

1. Select **Window > Preferences**.

   The Preferences dialog box opens.
2. In the tree menu, select **HPE EM > Taxonomy Editor**.
3. You can change the following:
   - **Default taxonomy namespace**

     The default namespace setting is 5.5.This defines taxonomy compatibility level with other UDDI products.

   - **Data consistency**

     Select **Validate before publishing taxonomies** to validate changes before publishing them to the server

# Downloading Taxonomies from a Server

Initially, Taxonomy Editor does not contain any taxonomies. To edit HPE EM taxonomies, you must download them from a server.

**To Download Taxonomies from a Server:**

1. In Server Explorer, right-click the server containing the taxonomies you need to open its context menu, and select **Download Taxonomies**.

   The Download Taxonomies wizard opens.
2. Select the taxonomies to download and click **Next**.

   The Choose Location dialog box opens.
3. Select the project to add the taxonomies to, and then click **Finish**.

Taxonomy Editor displays the download progress. When the download is complete, the taxonomies are visible in Project Explorer.

# Searching for Taxonomies

This section describes the search facilities provided by Taxonomy Editor.

Quick Find is the easiest way to find a taxonomy.

**To use Quick Find:**

1. Do one of the following:
   - Click **Search**, and then select **Quick Jump**.
   - Press **Ctrl+J**.

   The Find Taxonomy dialog box opens. For details, see "Find Taxonomy Dialog" on page 38.
2. In the input field, enter a search string.
3. Click **View Menu**, and then select one of the following options:
   - **Show in the tree without opening detail**

     Shows the taxonomy in the tree but does not open its details page.
   - **Case-sensitive**

     Enables a case-sensitive or case-insensitive search.
4. In the `in project` field, select in which project to search for the taxonomy.

   Taxonomies that match your search criteria are displayed in the Matching taxonomies pane.
5. Select the required taxonomy and click **Open taxonomy**.

The taxonomy opens in the Editor pane.

For a more detailed search, you can use Advanced Search to do the following:

- Search for a specific property type.
- Search according to a specific value of a property.
- Search different text strings: full text, regular expression, or whole word.

**To Use Advanced Search:**

1. Do one of the following:
   - Select **Search>Search**.
   - Press **Ctrl+H**.

   The Search dialog box opens.
2. Select the **Taxonomy Search** tab to open the dialog box. For details, see "Search Taxonomy Dialog" on page 38.
3. In the `Containing text` field, do one of the following:
   - Enter the text to search.
   - Select text used in a previous search by using the drop-down list.
4. In `Search only in`, choose the taxonomy properties or categories to search.
5. In `Search controls`, select one or more of the following:
   - **Case-sensitive**

     To perform a case-sensitive search.
   - **Whole words only**

     To search for whole word matches.

- **Regular expression**
  To search using regular expressions.

6. In Scope, select one of the following:
   - **Workspace**
     To search the Eclipse workspace.
   - **Selected resources**
     To search all entities selected in Project Explorer.
   - **Working set**
     To customized resources from Project Explorer.
7. Click **Choose**.
   The Select Working Sets wizard opens.
   Do one of the following:
   - Select from existing working sets.
   - Create new working sets.
8. Click **Search**.
   The results are displayed in the Search view of the UI.

# Chapter 4: Managing Taxonomies

This chapter describes how to work with taxonomies, as detailed in the following sections:



# Creating Taxonomies

In "Creating a Taxonomy Project" on page 17, you created a Taxonomy Project and looked at how to download taxonomies. The following section describes how to create new taxonomies.

**To Create a New Taxonomy:**

1. Do one of the following:
   - Click **New** to open the Select a Wizard dialog box, and select **HPE EM > Taxonomy**, and then click **Next**.
   - Select **File > New > Taxonomy**.
   - Press **Alt+Shift+N** to open the context menu, and then select **Taxonomy**.

     The New Taxonomy wizard opens.
2. In the New Taxonomy wizard, enter the required parameters.

   **Note: Note**: A default Taxonomy ID and Filename are assigned according to the Taxonomy Name entered. The `Source Folder` is assigned by default, according to whether there is an active extension project. You can change these parameters to meet your requirements.
3. Click **Finish** to create the taxonomy.

   The taxonomy is now visible in Project Explorer and the Taxonomy Editor opens.
4. Open the Categories tab and add the categories you need. For details, see "Editing Categories" on the next page.
5. Open the Advanced tab and enter the required parameters, as described in "Editor View" on page 11.

# Editing Taxonomies

A taxonomy can be modified in the following ways:

# Editing Taxonomy Properties

**To Edit Taxonomy Properties:**

1. Double-click the taxonomy in Project Explorer to open the Editor view.
2. Edit properties as required in the tabs of the Editor view. For details, see "Editor View" on page 11.
3. Click **Save**.

The changed status of the taxonomy is displayed in Project Explorer.

# Refreshing Taxonomies to Reflect External Changes

If you want the Editor to reflect changes made outside Taxonomy Editor, you can refresh the taxonomy.

To refresh a taxonomy, do one of the following:

- Right-click the individual taxonomies or the project in Project Explorer to open the context menu, and then select **Refresh**.
- Select the individual taxonomies or the project in Project Explorer, and then press **F5**.

The selected taxonomies are then updated to reflect external changes.

# Copying Taxonomies

You can copy or move taxonomies from one project to another using cut, copy, or paste.

**To Copy or Move a Taxonomy to a Different Project:**

1. Right-click the taxonomy in Project Explorer and select **Copy** or **Cut**.
2. Right-click the project to which you want to copy or move the taxonomies and select **Paste**.

   The taxonomies are then either copied or moved to the other project.

A pasted taxonomy has the status:

- **New**

  If a taxonomy of that name is new to that location.
- **Modified**

  If an existing taxonomy is overwritten.

# Editing Categories

A taxonomy can be modified in the following ways:

# Adding a Category

**To Add a New Category to a Taxonomy:**

1. Open the required taxonomy in the Editor pane and click the **Categories** tab.
2. Do one of the following:
   - Click **Add Next** to add a new category at the same level.
   - Click **Add Child** to add a new sub-category.

   The New Category wizard opens.
3. Enter the category properties, as follows:
   - **Name**

     Name for the category. This represents the value of the `keyName` attribute in the taxonomy's XML representation.
   - **Value**

     Identifier for the category. This represents the value of the `keyValue` attribute in the taxonomy's XML representation.
   - **Disabled**

     Select this check box to make sure the category *cannot* be used in an artifact.
4. Click **Finish**.

   The new category is displayed in **Category Structure**.

# Removing a Category

**To Remove a Category:**

1. Open the required taxonomy in the Editor pane and click the **Categories** tab.
2. Right-click the category in the Category Structure pane to open its context menu, and select **Delete**.

The deleted category is no longer visible in the Category Structure pane.

# Copying a Category

**To Copy a Category:**

1. Open the required taxonomy in the Editor pane and click the **Categories** tab.
2. Right-click the required source category in the Category Structure pane to open its context menu, and then select **Copy** or **Cut**.

3. Right-click the required destination category in the Category Structure pane to open its context menu.
4. Do one of the following:
   - Select **Paste** to add the category as a sub-category.
   - Select **Paste as Sibling** to add the category at the same level.

## Moving a Category

**To Move a Category:**

1. Open the required taxonomy in the Editor pane and click the **Categories** tab.
2. Select the required category in the Category Structure pane.
3. Do one of the following:
   - Click **Up**, to move a category up.
   - Click **Down**, to move a category down.
   - Click **Unindent**, to move a category to the left.
   - Click **Indent**, to move a category to the right.

**Note: Note**: To move multiple categories at the same time, you must select categories that are consecutive.

# Deleting and Restoring Taxonomies

You can also delete taxonomies and restore them from your local history.

**To Delete a Local Taxonomy:**

1. Right-click the taxonomy in Project Explorer to open its context menu, and then select **Delete**.
2. Confirm deletion of the taxonomy when prompted.

**To Restore a Deleted Taxonomy:**

1. Right-click the project in Project Explorer to open its context menu and select **Restore from Local History**.

   The Restore from Local History dialog box opens.
2. Select the check box of the required taxonomy and click **Restore**.
3. Download the published taxonomy from the server, as described in “Downloading Taxonomies from a Server”.

**To Delete a Taxonomy from the Server:**

1. Right-click the taxonomy in Project Explorer to open its context menu and select **HPE EM > Remove from Server**.
2. Choose if you also want to delete the local copy.
3. Confirm deletion of the taxonomy when prompted.

**Note: Note**: Taxonomy Editor automatically performs a data consistency check before removing the taxonomy from the server. For details, see “Conflict With Server”.

# Comparing Taxonomy Files

If you are importing or exporting taxonomies between servers, it is essential to compare taxonomies to keep track of changes.

Taxonomy Editor enables you to compare the following taxonomies:

- Local taxonomy against the server taxonomy.
- Server taxonomy against a local history taxonomy.

**To Compare Taxonomies:**

Right-click the taxonomies you want to compare in Project Explorer to open a context menu, and then select one of the following:

- **Compare With > Each Other**
- **HPE EM > Compare with the latest on server**
- **Compare With > Local History**

The results are displayed in the Compare view.

# Updating Taxonomies from the Server

If the most current version of a taxonomy exists on a server, you can update your local copy to reflect any changes.

**To Update a Local Taxonomy:**

- Right-click the taxonomy in Project Explorer to open the context menu, and then select **HPE EM > Update from Server**.

  **Note**: Confirmation is required to overwrite existing taxonomies.

# Importing and Exporting Taxonomy Files

You can import and export taxonomies between your projects and your local file system.

**To Import a Taxonomy from your File System:**

1. In Project Explorer, right-click the taxonomy project to which you want to import taxonomies to open its context menu, and then select **Import > Taxonomy**.

   The Import Taxonomies wizard opens. For details, see "Import Taxonomies" on page 37.
2. Browse for the folder from which you want to export taxonomies in the `Folder` field.

   The selected folder is displayed in the left pane.
3. Click the check box of the chosen folder.

   Compatible file types are displayed in the right pane.

4. Click the check box of the files you want to import and, and then browse for the required import folder in the `Into folder` field.
5. Click **Finish**.
6. Publish the taxonomies to an HPE EM repository, as described in "Publishing Taxonomies" on page 27.

**Tip: Tip**: When importing a taxonomy from a file whose file name already exists in the local folder, Taxonomy Editor asks if you want to overwrite the taxonomy. If you click **Yes** or **Yes To All**, the current taxonomy is updated by attributes and *categories* from the XML file and its status is changed to modified.

**To Export a Taxonomy:**

1. Right-click the taxonomy in Project Explorer to open its context menu, and then select **Export** to open the Export wizard. For details, see "Export Taxonomies Wizard" on page 37.
2. Select the required file type and click **Next** to open the corresponding wizard.
3. Browse for the required destination and enter the required parameters.
4. Select whether to overwrite existing files.
5. Click **Finish**.

**Note: Note**: You can export a taxonomy to any file type supported by Eclipse. For example:

- XML file
- JAR archive
- EAR-deployable or JAR-deployable archiv

# Chapter 5: Deploying Taxonomies

This chapter explains how to deploy a set of taxonomies as an Extension Project.

You can publish individual taxonomies as described in "Publishing Taxonomies" below.

Alternatively, create a taxonomy extension and deploy it as described in the following sections:



# Publishing Taxonomies

Publishing is the process of updating changes to an HPE EM server.

**To Publish a Taxonomy:**

- Right-click the taxonomy in the Project Explorer to open its context menu, and then select **HPE EM> Upload to Server**. Multiple taxonomies may be selected by holding **CTRL** and selecting them.

  The taxonomy is published to the defined HPE EM server.

**Caution: Caution**: You cannot publish a System taxonomy to a remote repository.

The status of a taxonomy after publishing updates as described in the following table.

Taxonomy Status After Publication

| Status | Description | Impact |
|---|---|---|
| UP-TO-DATE | Local and server versions are identical. | Publication was successful, including any modifications. |
| NEW ? | Local version of the taxonomy has not been published to the server. | Publication was unsuccessful and the status is unchanged. Possibly due to one of the following:<br>• Exception error.<br>• Breach of server data integrity. |
| MODIFIED > | Changes have been made to a local version of a taxonomy after it has been published. | |
| SYSTEM  | Taxonomies automatically generated by HPE EM. For system use only. | Changes to these taxonomies cannot be published. |

# Building a Taxonomy Extension

After publishing taxonomies, you can create a Taxonomy Extension.

**To Build a Taxonomy Extension:**

1. Right-click the taxonomy project in Project Explorer to open its context menu, and expand **HPE EM > Build Extension** to open the location browser.
2. Enter a name for the extension project and browse for the location you want to save the project to, and click **Save**.

   All taxonomies from the selected taxonomy project are copied to the Taxonomy Extension.

# Applying Extensions

You can extend HPE EM by adding libraries or JSPs to the deployed EAR files, by modifying the data model, by configuring the appearance of the UI, and by importing prepackaged data.

Extensions to HPE EM come from the following sources:

- **Customization Editor**

  Typical extensions created by Customization Editor contain modifications to the data model and artifact appearance, and possibly data required by the customization (taxonomies). They may also contain new web components, which may include custom JSP and Java code.

  If your extension contains new artifact types, HPE EM does not create default ACLs for them. Set default ACLs for the new artifact types in HPE EM.
- **Assertion Editor, Report Editor, and Taxonomy Editor**

  These extensions contain assertion, reporting, and taxonomy data only. They do not involve changes to the data model.

The Setup Tool opens the EAR files, applies the extensions, and then repacks the EAR files.

Apply extensions according to one of the following scenarios:

- "Single-Step Scenario " on the next page

  The Setup Tool performs all the processes involved in applying extensions, including any database alterations, as a single step.
- "Decoupled DB Scenario " on page 30

  Database SQL scripts are run manually. The Setup Tool performs the other processes as individual steps that are executable on demand. This scenario is useful in organizations where the user applying extensions does not have the right to alter the database, which is done by a database administrator.

  **Caution:** In some specific circumstances (underscores and numbers in property names), extension application may fail because HPE EM cannot create short enough database table names (31 character maximum for most databases).

  The error in `setup.log` resembles the following:

  ```
  [java] --- Nested Exception ---
  ```

```
[java] java.lang.RuntimeException: cannot reduce length of identifier
  'ry_c_es_Artifact02s_c_priEspPty01Group_c_priEspPty01',
  rename identifier elements or improve the squeezing algorithm
[java] at com.em.platform.rdbms.design.decomposition.naming.impl.
  BlizzardNameProviderImpl.getUniqueLimitedLengthName(
      BlizzardNameProviderImpl.java:432)
[java] at com.em.platform.rdbms.design.decomposition.naming.impl.
  BlizzardNameProviderImpl.filterTableName(BlizzardNameProviderImpl.java:374)
```

If you do not require backward compatibility with these older versions, you can change the table naming algorithm.

**To change the table naming algorithm:**

1. Open `EM_HOME/lib/pl-repository-old.jar#META-INF/rdbPlatformContext.xml` with a text editor.
2. In the `rdb-nameProvider` bean element, edit the following property element:

   **<property name="platform250Compatible" value="false"/>**
3. Save `rdbPlatformContext.xml`

**Caution:** This solution only impacts properties with multiple cardinality. If the problem persists, then review the property naming conventions in your extension.

# Single-Step Scenario

Follow this scenario if you have permission to alter the database used for HPE EM.

**To apply extensions to HPE EM in a single step:**

1. Make sure that all extensions are in the following directory:

   `EM_HOME/extensions`

   The Setup Tool automatically applies all extensions in that directory.

   If you are applying extensions to another server, substitute the relevant home directory for `EM_HOME`
2. Stop the server.
3. Start the Setup Tool by executing the following command:

   **EM_HOME/bin/setup.bat(sh)**
4. Select the **Apply Extensions** scenario, and click **Next**.

   The Setup Tool automatically validates the step by connecting to the server, copying the extensions, and merging the SDM configuration.
5. Click **Next** for each of the validation steps and the setup execution.

   This process takes some time.
6. Click **Finish** to end the process.
7. Deploy the EAR file:

   The Setup Tool deploys the EAR file automatically.

   If you need to deploy the EAR file to JBoss manually, see Redeploying the EAR File.
8. Restart the server.

**Caution:** Applying an extension that modifies the SDM model may drop your full text indices.

`EM_HOME/log/setup.log` contains the following line in these cases:

```
Could not apply alteration scripts, application will continue with slower DB
drop/create/restore scenario. ... .
```

In these cases, reapply full text indices.

# Decoupled DB Scenario

Follow this scenario if the user who applies extensions does not have permission to modify the database.

**To apply extensions and modify the database separately:**

1. Make sure that all extensions are in the following directory:

   `EM_HOME/extensions`

   The Setup Tool automatically applies all extensions in that directory.
2. Stop the server.
3. Start the Setup Tool by executing the following command:

   **EM_HOME/bin/setup -a**.
4. Select the **Apply Extensions** scenario, and click **Next**.
5. Click **Next**, to execute the extension application, and exit the Setup Tool.
6. Provide the scripts from `EM_HOME/sql` to the database administrator.

   The database administrator can use `all.sql` to execute the scripts that drop and recreate the database schema.
7. Execute the Setup Tool in command-line mode to finish the extension application:

   **EM_HOME/bin/setup -c**
8. Redeploy the EAR file:

   The Setup Tool deploys the EAR file automatically.

   If you need to deploy the EAR file to JBoss manually, see Redeploying the EAR File.

# Redeploying the EAR File

After using the Setup Tool to apply extensions or updates, you must redeploy the EAR file to the application server. For JBoss, you can do this using the Setup Tool.

**To Redeploy the EAR file to JBoss:**

1. Stop the application server.
2. Start the Setup Tool by executing the following command:

   **EM_HOME/bin/setup.bat(sh)**
3. Select the **Advanced** scenario, and click **Next**.
4. Scroll down, select **Deployment**, and then click **Next**.

   When the Setup Tool validates the existence of the JBoss Deployment folder, click **Next**.

5. Click **Finish** to close the Setup Tool.
6. Restart the application server.

# Chapter 6: Conflicts and Validation Issues

Editing taxonomies can result in validation and conflict issues, as described in the following sections:

- "Local Validity" below
- "Server Conflicts" below
- "Repair Action" below

# Local Validity

By default, the validity of local taxonomies is constantly checked as you modify them.. Invalid taxonomies are marked in Project Explorer and the associated errors are listed in the Problems view.

To disable validation, from the menu, deselect **Build automatically**.

# Server Conflicts

A local taxonomy and the version on a server can come into conflict either when the version on the server is changed or when changes to the local version affect artifacts on the server.

Conflicts are displayed when you try to publish the taxonomy. An error message is displayed, stating that the taxonomy could not be published.

To help prevent conflicts, you can do the following:

- Right-click the taxonomy in Project Explorer to open its context menu, and then select one of the following:
  - **HPE EM > Show Taxonomy Usage**

    All artifacts categorized by the taxonomy are displayed in the Taxonomy Usage view.
  - Right-click the taxonomy in Project Explorer to open its context menu, and then select **HPE EM > Validate Data Consistency**

    Conflicts are displayed in the Validation Results view.

# Repair Action

The Data Consistency Check reports artifacts that use categories which no longer exist in the taxonomy project.

Taxonomy Editor features a Repair Action which enables you to resolve these inconsistencies.

**To Repair an Inconsistency:**

1. In the Validation Results view, expand the problem category, and right-click an artifact to open its context menu, then select one of the following:

- **Remove Referenced Category From Artifact**
- **Change Category**

2. Re-run validation.

**Note: Note**: Some conflicts relate to the validity of policy and lifecycle data (non-standard artifacts). The repair actions cannot resolve these conflicts.

# Chapter 7: Example: Creating and Publishing a Department Taxonomy

In this example, you create and deploy a new taxonomy containing the identities of departments in your organization.

Before proceeding, you must do the following:

- Define your HPE EM server.
- Update the local taxonomies, as described in "Updating Taxonomies from the Server" on page 25.

**To Create a Department Taxonomy:**

1. Create a new taxonomy, entering `Departments` as the Taxonomy Name.
   For details of the procedure, see "Creating Taxonomies" on page 21.
2. Open the Editor for the Departments taxonomy and select the **Categories** tab.
3. Add the following categories:
   - HR
   - IT
   - Payroll
   - Finance
   - Sales
   - Development
   - QA

   For details of the procedure, see "Adding a Category" on page 23.
4. Press **Ctrl+S** to save the taxonomy.
   The Departments taxonomy is now visible in Project Explorer.
5. Right-click the Departments taxonomy to open its context menu, and then select one of the following:
   - **HPE EM > Publish Taxonomy**
     To publish the taxonomy to the defined HPE EM server.
   - **HPE EM > Publish To Other Server**
     To publish the taxonomy to a different server.

# Appendix A: Keyboard Shortcuts

| Shortcut | Action | Context |
|---|---|---|
| **Ctrl+Alt+S** | Add HPE EM server. | Global |
| **Ctrl+N** | New taxonomy. | Global |
| **Alt+A, Insert** | Add next category. | Categories tab |
| **Alt+C** | Add child category. | Categories tab |
| **Alt+U, Ctrl+ArrowUp** | Move category up. | Categories tab |
| **Alt+D, Ctrl+ArrowDown** | Move category down. | Categories tab |
| **Alt+E, Ctrl+ArrowLeft** | Move category left (unindent). | Categories tab |
| **Alt+I, Ctrl+ArrowRight** | Move category right (indent). | Categories tab |
| **F2** | Navigate to Category Name field. | Categories tab |
| **Esc** | Ignore changes in current test field and switch to Category Structure | Categories tab |
| **Ctrl+PgDn** | Switch to next editor tab. | Taxonomy Editor |
| **Ctrl+PgUp** | Switch to previous editor tab. | Taxonomy Editor |
| **F12** | Activate Editor. | Global |
| **Ctrl+W, Ctrl+F4** | Close current editor. | Global |
| **Ctrl+Shift+W, Ctrl+Shift+F4** | Close all editors. | Global |
| **Ctrl+F6** | Go to next editor. | Global |
| **Ctrl+Shift+F6** | Go to previous editor. | Global |
| **Ctrl+Shift+E** | Switch to editor. | Global |
| **Ctrl+J** | Quick find taxonomy. | Global |
| **Ctrl+H** | Search taxonomy or category. | Global |
| **Alt+Shift+W** | Show editing resource in Taxonomy Editor. | Global |
| **F5** | Refresh items. | Global |
| **Ctrl+S** | Save changes for active editor. | Global |

| Shortcut | Action | Context |
|---|---|---|
| **Ctrl+Shift+S** | Save changes for all editors. | Global |
| **Ctrl+C, Ctrl+Insert** | Copy | Global |
| **Ctrl+X, Shift+Delete** | Cut | Global |
| **Delete** | Delete | Global |
| **Ctrl+V, shift+Insert** | Paste | Global |
| **Ctrl+Shift+L** | Show key assist | Global |

# Appendix B: Dialog Boxes Reference

Each Taxonomy Editor input dialog is described in the following sections:



## Import Taxonomies

Select taxonomy files to import into your taxonomy project:

| Parameter | Definition |
|---|---|
| Folder | Browse for the source folder containing the taxonomy files you want to import. |
| Left Pane | Select the source folder containing the taxonomy files you want to import. |
| Right Pane | Select the individual taxonomy files you want to import. |
| Into Folder | Browse for the destination folder into which you want to import the selected taxonomies. |

## Export Taxonomies Wizard

Select a destination for the taxonomies you wish to export:

| Parameter | Definition |
|---|---|
| Select an export destination | Enter text to filter your search. |
| Tree View | Select File System as your destination folder. |

Select the taxonomies you want to export, then browse for the destination directory:

| Parameter | Definition |
|---|---|
| Left Pane | Select the project from which you want to export taxonomies. |
| Right Pane | Select the individual taxonomies you want to export. |
| To Directory | Browse for and select the directory into which you want to export the selected taxonomies. |

# Find Taxonomy Dialog

A quick search for matching taxonomies:

| Parameter | Definition |
|---|---|
| Top Field | Enter text to filter your search results. |
| Matching Taxonomies | A list of taxonomies matching your search request. |
| In Project | Select the project in which you want to search for taxonomies. |

# Search Taxonomy Dialog

An advanced search for matching taxonomies:

| Parameter | Definition |
|---|---|
| Containing Text | Enter text to search or use the drop-down menu to select a previous search parameter. |
| Working Set | Browse for and select a working set as a scope for your search. |

# Appendix C: Troubleshooting

| Case | Indications | Resolution | Type | Severity |
|---|---|---|---|---|
| A taxonomy was changed on the remote server while you were modifying your local version. | Your local taxonomy is CONFLICTING. The local version cannot be published and its modifications are kept. | To replace the local taxonomy with the server version, use the taxonomy context action **HPE EM > Update Taxonomy**. You might want to first copy your local version to a temporary location. | Conflict | Error |
| A taxonomy was published that has the same file name as a new taxonomy you are trying to publish to the remote server. | Taxonomy is CONFLICTING. The local version cannot be published. Changes to the local taxonomy and server remain in Project Explorer. | To replace the local taxonomy with the remote server version, use the taxonomy context action **HPE EM > Update Taxonomy**. You might want to first make a backup copy your local version. | Conflict | Error |
| The taxonomy you have created has the same ID as an existing taxonomy on the remote server | The local taxonomy cannot be published. Changes to the local taxonomy and server remain in Project Explorer. The Validation Results include a node giving the taxonomy ID. | Change the ID of the new taxonomy. | Validation Results | Error |
| You have changed the ID of a taxonomy used by artifacts. | The local taxonomy cannot be published and remains MODIFIED. The Validation Results list artifacts that use the taxonomy. | To restore the original taxonomy, use the taxonomy context action **HPE EM > Update Taxonomy**. | Validation Results | Error |
| A category that you modified is used by other artifacts. | The local taxonomy cannot be published and remains MODIFIED. Validation Results lists artifacts that use the category. | To restore the original taxonomy, use the taxonomy context action **HPE EM > Update Taxonomy**. | Validation Results | Error |
| A new taxonomy ID is identical to that of another | An error message for this taxonomy is shown. | Change taxonomy ID to another value. | Local Inconsistency | Error |

| Case | Indications | Resolution | Type | Severity |
|---|---|---|---|---|
| local taxonomy. | | | | |
| Taxonomy ID format is invalid. | A warning message for this taxonomy is shown. | Change taxonomy ID to valid format. | Local Inconsistency | Warning |
| Category value is duplicated by another category in the same taxonomy. | An error message for this taxonomy is shown. | Change the category value. | Local Inconsistency | Error |
| Taxonomy file name contains invalid character for REST URL. | An error message for this taxonomy is shown. | Change file name so that it does not contain invalid character. | Local Inconsistency | Error |