Cloud Assessment

Software Version: 1.01

Windows and Linux Operating System

Customization Editor

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Chapter 1: Customization Editor Guide

Welcome to the *Customization Editor User Guide*. This guide explains how to use Customization Editor as part of Micro Focus Cloud Assessment (Cloud Assessment).

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- Getting Started , on page 17

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Chapter 2: Customization Editor

Cloud Assessment Customization Editor is a set of Micro Focus Cloud Assessment Workbench features that enable you to edit the underlying System Data Model (SDM) configuration of an installation of Cloud Assessment.

In Cloud Assessment 1.01, Web GUI customization is decoupled from SDM customization. Having applied an SDM extension, Cloud Assessment administrators must configure the UI visibility of artifacts/properties in the web GUI using the **Administration > Customize** menu. This is no longer part of the Micro Focus Cloud Assessment Workbench tool set. For more details refer to the Administration Guide UI Customization chapter.

This chapter introduces Customization Editor in the following sections:

Cloud Assessment Workbench Suite

Cloud Assessment Workbench is a suite of editor tools enabling you to customize your deployment of Cloud Assessment.

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

- **Customization Editor**

  Customizes the underlying System Data Model (SDM) within Cloud Assessment.
- **Taxonomy Editor**

  Customizes the taxonomies used to categorize artifacts in Cloud Assessment.
- **Assertion Editor**

  Customizes the conditions applied by your business policies within Cloud Assessment.
- **Report Editor**

  Customizes report definitions for use with Cloud Assessment.

Overview

Micro Focus Cloud Assessment is distributed with a preconfigured data model. For typical deployment scenarios, the model should be customized to fit an organization-specific environment.

Micro Focus Cloud Assessment Customization Editor provides a mechanism to customize the model, implement those changes, and keep them isolated in a so-called extension package that can then be re-applied during a re-installation or upgrade of Micro Focus Cloud Assessment.

To customize Micro Focus Cloud Assessment, follow this process:

1. Create an extension project.

   For details, see Creating an Extension Project , on page 19.
2. Modify the data model.

   For details, see the following:

   - *Manipulating Artifact Types , on page 23*
   - *Modifying the Properties of an Artifact Type , on page 24*
   - *Creating and Using Components , on page 30*
   - *Modifying Taxonomies , on page 32*
3. Deploy the customization to Micro Focus Cloud Assessment.

   For details, see *Deploying Extensions*.

   Be very careful when modifying artifacts that already have instances in the repository. For example, a new installation already contains the person artifact *administrator*. Removing properties from an artifact type with instances, or adding a new required property without a default value, may cause instability in Cloud Assessment. Customization Editor should prevent this if the Micro Focus Cloud Assessment server is running during modification.

User Interface

The default **Extension** perspective is split into a number of sections with menu options across the top. , as shown in “Customization Editor UI”.
Customization Editor UI

The perspective consists of the following elements:

- **Project Explorer**

  The tree view of the SDM configuration represented by your project.

  For details, see Extension Explorer , on the next page.
- **Server Explorer**

  The view listing Cloud Assessment server connections to Micro Focus Cloud Assessment Workbench.

  For details see, Server Explorer , on page 13.
- **Editor Views**

  The main area of the perspective contains editor views of project elements. You can open multiple editors. The functionality of each editor varies depending on the project element.

  For details, see Views , on page 38.
- **Information Views**

  Messages and search results open their own views.

  For details, see Views , on page 38.
- **Menu Items**

  The standard Eclipse menu options plus additional Micro Focus Cloud Assessment Workbench options.

For details about the additional options for Customization Editor, see Menu Options , on page 12.

Extension Explorer

The Extension Explorer, as shown in“Extension Explorer View”, represents a tree view of the extension project that you are currently working with. It includes all the elements from extensions that it depends on as well.

Extension Explorer View

The tree is split into the extension root and five branches representing different elements of your extension.

Double-click an item in the tree to open the relevant editor, ot to open or close a branch.

For details about each editor, see Views , on page 38.

Right-click an element to open a context menu that contains options for the element.

Each element and its contextual functionality is described in the following sections:

- Extension Name , below
- Artifact Types , below
- SDM Details , on the next page
- User Interface , on the previous page
- Taxonomies , on page 16
- Project Editor , on page 41

Extension Name

The extension name is the root element of the project.

The context menu contains the option to **Build Extension**, which creates a jar file that contains your extension. This extension is ready to import to Cloud Assessment.

For deployment details, see Deploying Extensions , on page 33.

Artifact Types

The Artifact Types branch contains the artifact types organized into a hierarchical structure reflecting the System Data Model (SDM). Each element within **Artifact Types** is a type of artifact or artifact package.

> **CAUTION:**
> Cloud Assessment separates the SDM into two models, public and system. Customization Editor hides system artifacts, preventing you from modifying them.

> **TIP:**
> An artifact package is an artifact type that serves as a group of other artifacts. They do not have instances in the repository and just serve to organize a hierarchy of artifact types in the SDM.

For details, see Artifacts , on page 14

The context menu for the Artifact Types branch contains the following functionality:

- **New Artifact Type** or **Package**

  Creates an artifact type as described in Creating an Artifact Type or Package , on page 23.
- **Open Artifact Type** or **Package**

  Opens the artifact editor for the selected element with the name of the element as the editor title.

  For details, see Artifact Editor , on page 38
- **Deprecate Artifact Type or Package**

  Deactivates the artifact type in the extension project and hides it in the Cloud Assessment UI.
- **Undeprecate Artifact Type** or **Package**

  Reactivates a deprecated artifact type in the extension project.
- **Delete Artifact Type** or **Package**

  Removes the artifact type from the extension project.

SDM Details

The SDM Details branch contains two element types described in the following sections:

- Property Descriptors , below
- Property Groups , on page 15

  Micro Focus Cloud Assessment separates the SDM into two models, public and system. Customization Editor shows properties and property groups used by system artifacts, but prevents you from modifying them.

Property Descriptors

Property descriptors are the attributes of artifact types.

For details, see Properties , on page 14.

In the Extension Explorer, properties are divided into the following branches:

- Primitive Property Descriptors
- Relationship Property Descriptors
- Taxonomy Property Descriptors

Each property type branch contains one context menu option: New Property.

For details, see Creating a Property , on page 28.

Each property type branch contains a list of the properties of that type.

The context menu for properties contains the following options:

- **Open Property**

  Opens the property editor for the selected element with the name of the element as the editor title.

  For details, see “Property Editor , on page 43”.
- **Deprecate Property**

Deactivates the property in the extension project and hides it in the Micro Focus Cloud Assessment UI.

- **Undeprecate Property**

  Reactivates the deprecated property in the extension project.
- **Delete Property**

  Removes the property from the extension project.
- **Find Usage**

  Opens a search view displaying all the artifacts and property groups containing this property.

  For details, see Search View , on page 46.

Property Groups

Property groups are sets of properties that can be added collectively to an artifact type.

For details, see Property Groups , on page 15.

The context menu of the Property Group branch contains one option: New Property Group.

For details, see Creating a Property Group , on page 29.

The context menu for each property group contains the following options:

- **Open Property Group**

  Opens the property group editor for the selected element with the name of the element as the editor title.

  For details, see Property Group Editor , on page 45.
- **Delete Property Group**

  Removes the property group from the extension project.
- **Find Usage**

  Opens a search view displaying all the artifacts that contain this property group.

  For details, see Search View , on page 46.

Menu Options

The menus in Micro Focus Cloud Assessment Workbench are standard Eclipse menus, with the addition of specific functionality for Micro Focus Cloud Assessment Workbench editors.

The additional menu options for Customization Editor include:

- **File > New > Micro Focus Extension Project**

  Create a new project, as described in Creating an Extension Project , on page 19.
- **File > New > Artifact Type**

  Create an artifact type, as described in Creating an Artifact Type or Package , on page 23.
- **File > New > Artifact Package**

  Create an artifact package, as described in Creating an Artifact Type or Package , on page 23.
- **File > New > Property**

Create a property, as described in Creating a Property , on page 28.

- **File > New > Property Group**

  Create a property group, as described in Creating a Property Group , on page 29.
- **File > New > Component**

  Create a component, as described in Creating a Component , on page 30.
- **File > New > Task**

  Create a task, as described in Creating a Task , on page 30.
- **Navigate > Go To > Open Artifact**

  Open an artifact editor, as described in Artifact Editor , on page 38.

  The keyboard shortcut **Ctrl+Alt+A** also performs this function.
- **Navigate > Go To > Open Property**

  Open a property editor, as described in Property Editor , on page 43.

  The keyboard shortcut **Ctrl+Alt+P** also performs this function.
- **Navigate > Go To > Open Property Group**

  Open a property group editor, as described in Property Group Editor , on page 45.

  The keyboard shortcut **Ctrl+Alt+R** also performs this function.
- **Search > Search**

  Open a search dialog box, as described in Searching the Extension , on page 22.
- **Help > Dynamic Help**

  Access context-sensitive help, directing you to the relevant section of this document based on the active view in Customization Editor.

Server Explorer

The Server Explorer displays the Cloud Assessment servers connected to Workbench. , as shown in “Server Explorer View”. The functionality is shared by all the Micro Focus Cloud Assessment Workbench editors.

Server Explorer View

Right-click a server in the Server Explorer to open the context menu described in the “Server Explorer Context Menu Options” table below.

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	Download a taxonomy from a platform server (Taxonomy Editor and Customization

Option	Function
Taxonomy	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.

SDM Elements

Customization Editor manages four types of entities in the SDM configuration of Cloud Assessment.

These entity types are described in the following sections:

- Artifacts , below
- Properties , below
- Property Groups , on the next page
- Taxonomies , on page 16

Artifacts

Artifacts are the basic building blocks of SOA. Every entity in the repository is an instance of an artifact. Each type of artifact is defined by an artifact type in the SDM. Artifact types are further categorized into artifact packages. These packages are abstract artifact types that do not have instances in the repository but instead define groups of artifacts.

You can explore artifact types and packages in the Artifact Types branch of the Extension Explorer.

For details, see "Artifact Types , on page 10".

For artifact type procedures, see *Manipulating Artifact Types , on page 23*.

Properties

Properties are the attributes of artifacts, the labels that distinguish one instance of an artifact from another. For example, all artifact instances have the *name* property, but every artifact has a different name.

There are three categories of property:

- **Primitive Properties**

  The basic labels for artifacts such as name and description.

  Basic properties are of the following types:

Property Type	Description
addressPropertyType	A full postal address.
booleanPropertyType	True or false.
categoryBagPropertyType	A taxonomic categorization.
dailyIntervalPropertyType	A time period with a start and end day, for example Monday to Friday.
dateTimePropertyType	A specific date and time.
doublePropertyType	A double precision floating point number.
encryptedPasswordPropertyType	An encrypted password.
identifierBagPropertyType	A taxonomic identification.
integerPropertyType	An integer number.
nameUrlPairPropertyType	A URL with an optional name assigned.
nameValuePairPropertyType	A name and value pair.
plainTextPropertyType	One-line text, suitable for properties such as name.
textareaPropertyType	Multi-line text, suitable for properties such as description.

- **Relationship Properties**

  The nature and direction of a relationship with another artifact such as ImplementationOf.
- **Taxonomy Properties**

  The categories used to define an artifact based on taxonomies such as the High category in the Failure Impact taxonomy.

You can explore properties in the SDM Details branch of the Extension Explorer.

For details, see “SDM Details”.

For property procedures, see *Modifying the Properties of an Artifact Type , on page 24*.

Property Groups

You can organize properties into groups, and add them to artifacts collectively instead of individually. For example, you can organize name, address, and telephone number into a contact details property group. Then, whenever a new artifact type is created that represents a person, the group can be added to it instead of the individual properties.

You can explore property groups in the SDM Details branch of the Extension Explorer.

For details, see “SDM Details”.

For property group procedures, see *Modifying the Properties of an Artifact Type , on page 24*.

Taxonomies

Taxonomies are categorization groups, each of which contain a set of values within a single category. For example, office location can be a taxonomic group containing a set of values representing each office in an organization.

You can explore taxonomies in the Taxonomies branch of the Extension Explorer.

For details, see “Taxonomies”.

For taxonomy procedures, see *Modifying Taxonomies , on page 32*.

Chapter 3: Getting Started

You can use Customization Editor to create extensions to the core Micro Focus configuration. The core configuration itself is not modified. Instead, Cloud Assessment includes a utility for adding extensions to the configuration.

This chapter contains the following sections:

Installing Cloud Assessment Workbench

Cloud Assessment is an Eclipse development platform distributed as a zip file, `microfocus-cloudassessment-workbench-1.01-win64.zip`.

> **NOTE:**
> Cloud Assessment 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.

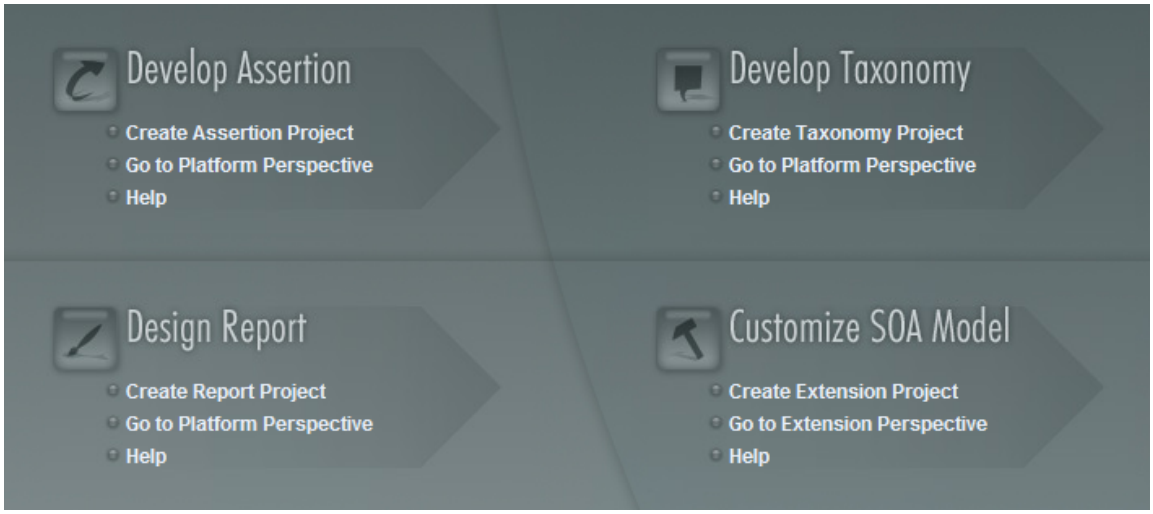
(missing or bad snippet)

To Start Cloud Assessment:

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

The first time you start Micro Focus Cloud Assessment Workbench, the welcome screen opens.

Screenshot: Workbench Welcome Screen



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, Micro Focus Cloud Assessment 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 Micro Focus Cloud Assessment servers. If you need to work with system taxonomies or want to upload the `.rptlibrary` file you can switch Micro Focus Cloud Assessment Workbench into 'admin' mode.

> **CAUTION:**
> Be extremely careful when working with system taxonomies, Micro Focus Cloud Assessment uses some hard-coded values from system taxonomies. Changing or removing them may cause errors.

To Switch Micro Focus Cloud Assessment Workbench to Admin Mode

1. Open `WB_HOME/configuration/config.ini` with a text editor.
2. Add `mode=admin` to `config.ini`.
3. Restart Micro Focus Cloud Assessment Workbench.

> **TIP:**
> Micro Focus Cloud Assessment is memory-intensive. If you experience performance issues, Micro Focus recommends increasing the memory allocation.

To increase the memory allocation for Micro Focus Cloud Assessment:

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

> **TIP:**
> Micro Focus Cloud Assessment downloads from Micro Focus Cloud Assessment may time out. If you experience issues, Micro Focus recommends increasing the time out.

To increase the time out for Micro Focus Cloud Assessment:

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

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

   The value is in milliseconds with a default value of 120000 (2 minutes).
3. Save your changes.
4. Restart Micro Focus Cloud Assessment Workbench.

> **TIP:**
> Workbench may fail to store saved credentials of servers. In such cases, Micro Focus recommends clearing the secure storage.

To reset the secure storage for Cloud Assessment server credentials:

1. In Cloud Assessment, 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, Micro Focus Cloud Assessment Workbench trusts all Micro Focus Cloud Assessment server certificates. You may want Micro Focus Cloud Assessment Workbench to verify Micro Focus Cloud Assessment certificates.

To Verify Micro Focus Cloud Assessment Server Certificates:

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

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

If Micro Focus Cloud Assessment is configured for 2-way SSL, you must provide Micro Focus Cloud Assessment Workbench certificates to Micro Focus Cloud Assessment.

To Provide Micro Focus Cloud Assessment Workbench Client Certificates to Micro Focus Cloud Assessment:

- 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 an Extension Project

The first step in customizing your Cloud Assessment installation is to create an extension project in the Customization Editor. This is the workspace where you make all your modifications.

The symbol ⩾ supports the separation of projects based on their type. The following extension project types are supported:

- **model**

  Extensions for changes to the data model.
- **code**

Extensions for custom components.

- **mixed**

  Combined model and code extensions.

Micro Focus Software recommends separating extensions into separate types because Cloud Assessment does not guarantee backward compatibility for the Java API. This may make it difficult to migrate custom components to newer versions.

model extensions are easily migrated by opening them in the latest version of Customization Editor, building a new extension and redeploying them.

To create an extension project:

1. In the menu, select **File > New > Project**.

   The New Project wizard opens.
2. Expand **Cloud Assessment Extension Project**, and click **Next**.
3. In the New Extension Project dialog box, specify how to connect to Cloud Assessment to manage extensions (connect to remote Cloud Assessment installation or Cloud Assessment running on local computer)

   For parameter descriptions, see New Extension Project: Specify Cloud Assessment Server Installation , on page 50.

   > **NOTE:**
   > Creating an extension project based on a remote installation of Cloud Assessment, is not available in Production installation mode.

4. Click **Next** and follow one of the below steps:
   a. If you connect to remote Cloud Assessment installation, select or create a server. If no servers are configured currently, continue to Step 6.
   b. If you connect to the Cloud Assessment running on local computer, specify the Cloud Assessment server installation parameters and then click **Next** to go to Step 7.

      For parameter descriptions, see New Extension Project: Specify Cloud Assessment Server Installation , on page 50.
5. Do one of the following:
   - Select **Create a New Server**, and then click **Next**.

     Continue to Step 6.
   - Select **Use an Existing Server**, select the server from the list and input its credentials, and then click **Next**.

     Continue to Step 7.
6. In the New Server dialog box, add the parameters you want, and then click **Next**.

   For parameter descriptions, see New Extension Project: New Server , on page 51.
7. Do one of the following:
   - Select **Create a New Extension Project from Scratch** to create an empty extension containing no elements at all.

     Click **Next**.
   - Select **Edit an Existing Extension** to open an existing extension for modification.

Select an extension from the extension folder, or use **Add Extension** to select one from another location.

Click **Next** to continue to Step 10.

- Select **Create a New Extension from an Existing One** to use an existing extension as the basis of a new one.

  Select an extension from the extension folder or use **Add Extension** to select one from another location.

  Click **Next**.

  If you use this option, you must remove the existing extension from the extensions folder before you deploy the new modified extension.

8. In the Create Extension or Project dialog box, add the parameters you want, and then click **Next**.

   For parameter descriptions, see New Project: Create a New Extension , on page 51.
9. In the Add Dependencies dialog box, optionally select or add extensions to depend on, and then click **Next**.
10. In the Cloud Assessment Extension Project dialog box, add the parameters you want, and then select available projects to reference.

    Adding referenced projects enables you to use assertions or taxonomies from the referenced projects without the need to copy them manually to the extension project.
11. Click **Finish** to open the project.

In the Platform perspective, the Project Explorer now displays a view of your extension that contains not only the elements contained in your extension project but all the elements from any other extensions that your project depends on.

For details about the contents of your extension project, see Extension Explorer , on page 10.

Sharing an Extension Project

Cloud Assessment enables the sharing of an extension project in the CVS repository.

To share an extension project:

1. In Extension Explorer, right-click the project you need to open its context menu, and select **Team > Share Project** to open the **Share Project** dialog box. For details, see Share Project , on page 56.
2. Enter the required parameters and click **Finish**.

   The project is published to the CVS repository.

Referencing Other Cloud Assessment Workbench Projects

You can include assertions and taxonomies from an Assertion or Taxonomy Project in your current Extension Project.

To reference an Assertion or Taxonomy Project:

1. From the platform perspective, right-click your extension project and select **Properties** to open the **Preferences** dialog box, and then select **Project References** to view projects available to

reference.

2. Select the projects you want to reference and click **OK**.

   The assertions or taxonomies from the referenced project are copied to your extension project.

Saving Modifications

As you modify an entity in your extension project, the tab label of the entity editor is marked with an asterisk (*).

To save your changes to the project, select **File > Save** from the menu, or use keyboard shortcut **Ctrl+S**.

If you close an editor or the application with unsaved changes, you are prompted to save these changes.

Your modifications are made to your extension project and not to the configuration of Cloud Assessment. To deploy your customization to Cloud Assessment, see Deploying Extensions , on page 33.

Searching the Extension

The Customization Editor contains a customized search function, which enables you to find entities in your extension project.

To search your extension project:

1. From the menu, select **Search > Search**.

   The Search dialog box opens.

2. In the SDM Search tab of the Search dialog box, add the parameters for your search.

   For parameter descriptions, see Search , on page 56.

3. Click **Search**.

   The search results appear in the Search view.

   For details, see Search View , on page 46.

Chapter 4: Manipulating Artifact Types

You can use Customization Editor to create, modify, and delete artifact types and packages in your extension project. You can also change the format of artifact pages in the Cloud Assessment UI.

Cloud Assessment separates the SDM into two models, public and system. Customization Editor hides system artifacts, preventing you from modifying them.

For more details about artifact types and packages, see Artifacts , on page 14.

The chapter explains the following procedures:

Creating an Artifact Type or Package

Customization Editor enables you to create a new artifact type or package in your extension project.

To create an artifact type or package:

1. Do one of the following:
   - From the main menu, select **New > Artifact Type** or **Package**.
   - In the Extension Explorer, open the context menu of an artifact package branch and select **New Artifact Type** or **Package**.

   The New Artifact Type or New Artifact Package dialog box opens.
2. In the dialog box, add the artifact parameters you want.

   For parameter descriptions, see New Artifact: Create , on page 48.

   For localname naming conventions, see Localname Naming Rules , on page 58.
3. Do one of the following:
   - Click **Finish** to create the artifact type or package and exit the dialog box.
   - Click **Next** and continue to Step 4 to set database parameters.
4. In the dialog box, add the database parameters you want.

   For parameter descriptions, see New Artifact: Database Settings , on page 49.
5. Click **Finish** to create the artifact type or package.

Modifying the Attributes of an Artifact Type

Customization Editor enables you to edit the main attributes of artifact types.

To edit the attributes of an artifact type:

1. Open the artifact editor and select the **Overview** tab.
2. In the Overview tab, make any changes you want.

   You cannot change the local name of the artifact if the extension project is in production mode.

   For a description of the Overview tab, see Artifact Editor , on page 38.
3. Press **Ctrl+S** to save your changes.

Modifying the Properties of an Artifact Type

The main attributes of artifact types are properties. You can modify these properties, add them individually, or add them as a group within the artifact editor.

To add or modify the properties and property groups of an artifact type:

1. Open the artifact editor and select the **Properties** tab.
2. In the Properties tab, make any changes you want.

   For a description of the Properties tab, see Artifact Editor: Properties Tab , on page 39.
3. Press **Ctrl+S** to save your changes.

You can change the local name of the property descriptor defined in the current extension project.

To change the local name of a property descriptor:

1. From the tree menu of Extension Explorer, expand **SDM Details > Property Descriptors**.
2. Browse for the descriptor you want, and double-click to open the **Overview** view.
3. In the **Local Name** field, enter the parameters you require, and then save your changes.

You can also change the cardinality of an artifact defined in the current extension project.

> **NOTE:**
> You cannot change the local name of the property descriptor if the extension project is in production mode.

To change the cardinality of an artifact type:

1. Browse for the artifact you need and open the Editor view, and then switch to the **Properties** tab.
2. In the **Cardinality** field, click to open the drop-down menu, and select the cardinality you need.

   > **NOTE:**
   > For taxonomic properties, the cardinality affects the way the property displays in the Cloud Assessment UI.

   - Required taxonomic properties display as an **Add Category** function.
   - Optional taxonomic properties display as a drop-down menu.
   - Multiple taxonomic properties display as a list box.

   > **TIP:**
   > You cannot change the cardinality of an artifact if the extension project is in production mode.

You can also change the direction of relationship of a property descriptor which is defined in the current extension project.

To change the direction of a relationship property descriptor:

1. In Extension Explorer, expand **SDM Details > Property Descriptors > Relationship Property Descriptors** and double-click the descriptor you need to open its Editor view.
2. In the **Direction** field, click the link next to **Inverse Display Name** to toggle the relationship between **incoming** or **outgoing**, and then save your changes.

Micro Focus Cloud Assessment also enables you to modify the taxonomical properties of an artifact type.

To modify the taxonomical properties of an artifact:

1. In Extension Explorer, browse for the artifact you need and open its Editor view, and then switch to the **Properties** tab.
2. In the Properties window, click **New** to open the **New Property** dialog box, and select **Taxonomy Property**, and then click **Next**.

   The **New Taxonomy Property** dialog box opens. For details, see New Property: Taxonomy , on page 53.
3. Enter general parameters and in the **Taxonomy Name** field, do one of the following:
   - Click **Browse** to browse for and select from a list of available taxonomies.
   - Click **Create** to open the Create a New Taxonomy dialog box. For details, see New Taxonomy , on page 55.
4. Enter the parameters you want and click **Finish**.

   The created taxonomy is now visible in the **New Taxonomy Property** dialog box.
5. Click **Finish**.

Mapping an Artifact Type to a Registry

You can map artifacts in Cloud Assessment to registry entities in a UDDI registry.

The artifact types listed in “Predefined Registry Mapping” have predefined mappings to registry and cannot be amended.

Predefined Registry Mapping

SDM Artifact	UDDI Entity	Direction
Organizational Unit	BusinessEntity	Bi-directional
Business Service	tModel	Bi-directional
Implementation Artifacts	Business Service	Bi-directional
Endpoint	BindingTemplate	Bi-directional

The mapping of an artifact to a registry entity is illustrated in “Registry Mapping”.

Registry Mapping

To add or modify artifact type mappings to registry entities:

1. Open the artifact editor and select the **Registry Mapping** tab.
2. In the Registry Mapping tab, make any changes you want.

   For a description of the Registry Mapping tab, see Artifact Editor: Registry Mapping Tab , on page 40.

   For details on how to add an artifact mapping, see Adding a Registry Mapping for an Artifact Type , below

   For details on how to add a property mapping, see Adding a Registry Mapping for a Property , below.
3. Press **Ctrl+S** to save your changes.

Adding a Registry Mapping for an Artifact Type

You can map artifact types to registry entities.

To add an artifact mapping:

1. Open the Artifact Editor and select the **Registry Mapping** tab.
2. In the Artifact Mapping pane, click **Add**.

   The New Artifact Mapping dialog box opens.
3. In the New Artifact Mapping dialog box, add the parameters you want.

   For parameter descriptions, see Registry Mapping: New Artifact Mapping , on page 55.
4. Click **Finish** to add the mapping.

Adding a Registry Mapping for a Property

You can map properties to registry entity keyed references.

To add a property mapping:

1. Open the Artifact Editor and select the **Registry Mapping** tab.
2. In the Property Mapping pane, click **Add**.

   The New Property Mapping dialog box opens.
3. In the New Property Mapping dialog box, add the parameters you want.

   For parameter descriptions, see Registry Mapping: New Property Mapping , on page 55.
4. Click **Finish** to add the mapping.

Example: Adding the Department Property to Services

In this example, you add a new taxonomic property, department, to the service artifact.

To follow this example, you must first do the following:

- In Customization Editor, create a new extension dependent on the core extension, as described in Creating an Extension Project , on page 19
- In Taxonomy Editor, create a new department taxonomy and deploy it to Cloud Assessment, as described in the "Example: Creating and Publishing a Department Taxonomy" section of the *Micro Focus Cloud Assessment Taxonomy Editor Guide*.

To add the department property to services:

1. Open theService editor and select the **Properties** tab.
2. In the Properties segment, click **New**.
3. Select **Taxonomy Property** and click **Next**.
4. Input `Department` as the **Display Name**.
5. For the **Taxonomy**, click **Browse** and import the **Departments** taxonomy.
6. Press **Ctrl+S** to save your changes to the business service artifact type.
7. Deploy your extension, as described in Deploying Extensions , on page 33
8. Start your installation of Cloud Assessment

Add the property to the artifact in the user interface. For details, see "UI Customization" in the *Micro Focus Cloud Assessment Administration Guide*.

Chapter 5: Manipulating Properties

Customization Editor enables you to create, modify, and delete properties and property groups in your extension project.

Caution: Cloud Assessment separates the SDM into two models, public and system. Customization Editor shows properties and property groups used by system artifacts, but prevents you from modifying them.

For more details about properties and property groups, see Properties , on page 14 and Property Groups , on page 15.

This chapter describes the following procedures:

- Creating a Property , below
- Modifying a Property , on the next page
- Creating a Property Group , on the next page
- Modifying a Property Group , on the next page

In addition, Manipulating Artifact Types , on page 23 includes the following procedures related to properties:

- Modifying the Properties of an Artifact Type , on page 24
- Mapping an Artifact Type to a Registry , on page 25

Creating a Property

You can create properties individually and then add them to artifact types later.

To create a property:

1. Do one of the following:
   - From the menu, select **File > New > Property**.
   - In the Extension Explorer, open the context menu for the Property Descriptors branch, select **New Property**, and then select the property type.
   - In the Extension Explorer, open the context menu for a property type branch and select **New *Type* Property** to create a property of that type.

   The New Property dialog box opens.
2. In the New Property dialog box, add the property parameters you want.

   For parameter descriptions of each property type, see the following:
   - New Property: Primitive , on page 52
   - New Property: Relationship , on page 53
   - New Property: Taxonomy , on page 53

   For localname naming conventions, see Localname Naming Rules , on page 58.
3. Click **Finish** to create the property.

Modifying a Property

Customization Editor enables you to modify properties.

To edit a property:

1. Open the Property Editor.
2. In the Property Editor, make any changes you want.

   For a description of the Property Editor, see Property Editor , on page 43.
3. Press **Ctrl+S** to save your changes.

Creating a Property Group

Many artifact types share sets of the same properties. It is useful to create groups of properties and add these to artifact types instead of adding each property individually.

To create a property group:

1. Do one of the following:
   - From the menu, select **File > New > Property Group.**
   - In the Extension Explorer, open the context menu for the Property Groups branch, and select **New Property Group**.
   - Open the Artifact Editor and select the Properties tab. In the Property Groups pane, click **New** to create a new property group as a set of attributes for an artifact type.

   The New Property Group dialog box opens.
2. In the New Property Group dialog box, add the parameters you want.

   For parameter descriptions, see New Property Group , on page 54.
3. Click **Finish** to create the property group.

Modifying a Property Group

Customization Editor enables you to modify property groups.

To edit a property group:

1. Open the property group editor.
2. In the Property Group Editor, make any changes you want.

   For a description of the Property Group Editor, see Property Group Editor , on page 45.
3. Press **Ctrl+S** to save your changes.

Chapter 6: Creating and Using Components

Customization Editor enables you to create custom components, for use in the customizable Micro Focus Cloud Assessment user interface.

To create and use components:

1. Create a new extension project, selecting **Develop JSPs**, and setting the appropriate application server settings.

   For details, see as described in “Creating an Extension Project”.
2. Create a component.

   For details, see “Creating a Component”.
3. Create a task to use your component.

   For details, see “Creating a Task”.
4. Develop the Java and JSP that the component uses.

   For details, see “Developing a Component”.
5. Deploy the code extension to Micro Focus Cloud Assessment.

   For details, see *Deploying Extensions , on page 33*.
6. Perform the appropriate UI customization to use your component in Micro Focus Cloud Assessment.

   For details, see "UI Customization" in the *Micro Focus Cloud Assessment Administration Guide*.

Creating a Component

Components are functional elements that you can call using a number of different elements in the Micro Focus Cloud Assessment UI.

To create a component:

1. Do one of the following:
   - In the Extension Explorer, open the context menu for the Components branch and select **New Component**.
   - In the Components Editor, click **Add**.

   The New Component dialog box opens.
2. In the New Component dialog box, add the parameters you want.

   For parameter definitions, see “New Component”.
3. Click **Finish** to create the component.

Creating a Task

Tasks are top level components accessible via their URIs. The addition of a URI allows you to access the component in the Micro Focus Cloud Assessment UI, and to make more sophisticated multi-layered components.

To create a task:

1. Do one of the following:
   - In the Extension Explorer, open the context menu for the Tasks branch and select **New Task**.
   - In the Tasks editor, click **Add**.

   The New Task dialog box opens.
2. In the New Task dialog box, add the parameters you want.

   For parameter descriptions, see “New Task”.
3. Click **Finish** to create the task.

Developing a Component

When you create a component, as described in Creating a Component , on the previous page, the templates for the Java class and JSP page are created automatically.

To view this code, switch to the Java or Debug perspective, as shown in “Debug Perspective”.

Debug Perspective

The project contains two source folders containing the Java and JSP files, respectively.

To open an edit view, double-click the source file you want to edit. In the edit view, you can write a custom component.

Chapter 7: Modifying Taxonomies

Customization Editor controls which taxonomies are available in the extension project. You can create and modify taxonomies from your extension project.

Creating and modifying taxonomies uses the Taxonomy Editor functionality.

For details, see the *Micro Focus Cloud Assessment Taxonomy Editor Guide*.

To control taxonomies in your extension project:

1. In the Extension Explorer, double-click the Taxonomies branch to open the Taxonomies editor.
2. To modify the available taxonomies in your extension project, do one of the following:
   - Open the taxonomy from the extension project, and edit the parameters as required.

     The modified taxonomy is then indicated by a **>** next to the taxonomy.
   - To import taxonomies from Micro Focus Cloud Assessment and add them to the extension, click **Import**. Select multiple taxonomies by holding **Ctrl**.

     You can also import taxonomies in the Server Explorer view. For more details, see Server Explorer , on page 13.
   - To update taxonomies in your extension to newer versions from Micro Focus Cloud Assessment, click **Update**. Select multiple taxonomies by holding **Ctrl**.

     Alternatively, in the Extension Explorer, expand the branches in the Taxonomy branch, select the taxonomy (use **Ctrl** to select multiple taxonomies), open the context menu, and select **Update Taxonomy**.

     The selected taxonomies are added as separate items for modification under the Taxonomy branch.
   - To remove a taxonomy from the extension, select the taxonomy and click **Remove**. Select multiple taxonomies by holding **Ctrl**.

     To enable the import or update of taxonomies from Micro Focus Cloud Assessment, you must specify the correct server URL during configuration.

     For details, see Creating an Extension Project , on page 19.

You can change the taxonomy in a taxonomy based property descriptor which is used in the current extension project.

To change the taxonomy in a taxonomy based property descriptor:

1. In the tree menu of Extension Explorer, expand **SDM Details > Taxonomy Property Descriptors** and double-click the descriptor you need to open its Editor in the Overview tab.
2. In the **Taxonomy Name** field, click **Browse**.
3. Select the taxonomy you want, and click **Select**.

   The new taxonomy overrides the previous taxonomy in the property descriptor.

   You cannot change the taxonomy in a taxonomy based property descriptor if the extension project is in production mode.

Chapter 8: Deploying Extensions

Deploying an extension to Cloud Assessment is a three-part process:

1. Exporting the Extension Project , below
2. Applying Extensions , below
3. Redeploying the EAR File , on page 36
4. Deploying Components to Cloud Assessment , on page 36
5. Deploying Extensions Remotely, on page 37

Alternatively, if you are developing components in Customization Editor, you can directly deploy an extension from Customization Editor.

Exporting the Extension Project

Customization Editor displays the entire configuration of your extension plus other extensions it depends on. However, your extension consists only of any modifications and additions that you have made. Only these changes are stored when you save your project as an extension JAR file, and only these changes are deployed to Cloud Assessment.

To create your extension package:

1. In the Extension Explorer or Project Explorer, open the context menu of the extension name, and select **Micro Focus Cloud Assessment > Build Extension**.

   The Export Extension dialog box opens.
2. Choose a save location and file name, and then click **Save**.

   By default, the Extension Folder set during configuration is selected.

   For configuration details, see Creating an Extension Project , on page 19

   If the extension already exists, Customization Editor prompts you to confirm that you want to overwrite it.

Applying Extensions

You can extend Cloud Assessment 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 Cloud Assessment 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, Cloud Assessment does not create default ACLs for them. Set default ACLs for the new artifact types in Cloud Assessment. using the functionality described in "How to Manage Default Access Rights" in the *Administration Guide*.

- **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 the next page

  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 Cloud Assessment 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.cloudassessment.platform.rdbms.design.decomposition.naming.impl.
  BlizzardNameProviderImpl.getUniqueLimitedLengthName(
      BlizzardNameProviderImpl.java:432)
[java] at com.cloudassessment.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 `CloudAssessment_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 or you need to preserve backward compatibility, 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 Cloud Assessment.

To apply extensions to Cloud Assessment in a single step:

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

   `CloudAssessment_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 `CloudAssessment_HOME`
2. Stop the server.
3. Start the Setup Tool by executing the following command:

   CloudAssessment_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.
>
> `CloudAssessment_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. as described in the "Enabling Full Text Search" section of the *Micro Focus Cloud Assessment Installation and Deployment Guide*.

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:

   `CloudAssessment_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:

   CloudAssessment_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 `CloudAssessment_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:

   CloudAssessment_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:

   CloudAssessment_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.

Deploying Components to Cloud Assessment

If you are creating components in Customization Editor, it is not convenient to continually build and apply extensions to Cloud Assessment. Customization Editor enables you to deploy your extension directly to Cloud Assessment.

Only Cloud Assessment deployed to a JBoss application server is supported by this release.

To directly deploy an extension from Customization Editor:

1. Stop the application server.
2. Switch to the Debug perspective in Customization Editor.
3. From the main menu, select **Run > External Tools > Open External Tools Dialog**.

   The External Tools dialog box opens.

4. Select **Ant Build > Customization Editor – Apply Extension**.
5. Click **Run** to apply the extension.

The Console view displays the output of the deployment process.

Deploying Extensions Remotely

In addition to manual deployment, you can deploy an extension remotely from Workbench to Cloud Assessment server.

To do so, follow the steps below:

1. Open the extension project.
2. In the Extension Explorer or Project Explorer, open the context menu of the extension name , and select **Micro Focus Cloud Assessment > Apply To Server**.

   You can also apply the extension to other servers. Right-click the extension project name in the Extension Explorer or Project Explorer to open the context menu and select **Micro Focus Cloud Assessment > Apply To Other Server**.
3. Follow the subsequent screens to deploy the extension to Cloud Assessment server.

> **NOTE:**
> Remote deployment requires administrative rights. Thus, you are prompted to provide administrative credentials.

Chapter 9: Views

Each Customization Editor view in the main and bottom-right section of the editor is described in the following sections:

- Artifact Editor , below. Manage your SOA artifacts and customize their properties, appearance, and registry mapping.
- Messages View , on page 41. View the action log as you customize your extension project.
- Project Editor , on page 41. Manage your extension project.
- Property Editor , on page 43. Manage your SOA properties and which perspectives can see and edit them.
- Property Group Editor , on page 45. Organize your properties into groups.
- Search View , on page 46. View the results of usage and entity searches.
- Tasks Editor , on page 46. Manage tasks in Micro Focus Cloud Assessment.
- Taxonomies Editor , on page 47. Customize the taxonomies available in Micro Focus Cloud Assessment.

Artifact Editor

Artifacts are the basic building blocks of SOA and represent all types of entity. This editor enables you to modify the parameters, and properties of an artifact type within Micro Focus Cloud Assessment. Each artifact type and package has an editor with the artifact name as the title.

Each editor contains the following tabs described in the following sections:

- Artifact Editor: Overview Tab , below

  The main attributes of the artifact type.
- Artifact Editor: Properties Tab , on the next page

  The properties of the artifact type.
- Artifact Editor: Registry Mapping Tab , on page 40

  The mapping of the artifact to registry entities.

Artifact Editor: Overview Tab

The **Overview** tab displays the general attributes of the artifact and allows you to modify some of them.

Business Service Editor: Overview Tab

The Overview tab contains the following segments:

- **Artifact General Information**. The following parameters related to artifacts shown in this pane. They are described in the table below:

Parameter	Definition
URI	The identifier for the artifact descriptor in the configuration.
Display Name	The name of the artifact as it appears in the Cloud Assessment UI.
Local Name	The name of the artifact as it is stored in the extension.
Collection Display Name	The plural version of the name as it appears in the Cloud Assessment UI.
Artifact Icon	Displays the icon used for the artifact in the UI with an option to change it.
Package	The parent artifact type that this artifact type belongs to.
Extends Type	The artifact type that this artifact type inherits the properties of.
Description	The description of the artifact type as it appears in the Cloud Assessment UI.
Deprecated	A check box indicating whether the artifact is currently active in the extension.
Revisionless	Indicates whether the artifact creates a new revision when it updates.
Abstract	A check box indicating whether the artifact is an artifact package which does not have actual instances in the repository.
Data Attachment	Indicates the type of data content that may be attached to the artifact.

- **Properties**

  A summary of the different properties that the artifact has. Each of the links opens the **Properties** tab described in Artifact Editor: Properties Tab , below.

Artifact Editor: Properties Tab

The **Properties** tab displays all the properties of the artifact and enables you to add and remove them:

Business Service Editor: Properties Tab

This tab contains the following panes:

- **Properties**

  This is the list of individual properties of the artifact. On the right are the following buttons:

  - **New** opens the **New Property** dialog described in Creating a Property , on page 28.
  - **Add** adds a property to the artifact type from the list of available property descriptors, set its cardinality, and its location on the **View Artifact** page.
  - **Deprecate** deactivates the property in the artifact type.
  - **Undeprecate** reactivates the property in the artifact type.
  - **Remove** removes the selected property from the artifact type.

- **Property Groups**

  This is the list of the property groups of the artifact. On the right are the following buttons:

  - **New** opens the **New Property Group** dialog. For details, see Creating a Property Group , on page 29.
  - **Add** adds a property group to the artifact type from the list of available property groups.
  - **Remove** removes the selected property group from the artifact type.

- **Inherited Groups and Properties**

  If the artifact is based on another artifact then this segment displays the inherited artifact and its properties and groups.

The following property parameters are displayed in these panes:

Parameter	Definition
Name	The name of the property as it appears in the Cloud Assessment UI.
Cardinality	The occurrence of the property in an artifact with options: • **Optional** The property is not required to be populated. • **Required** The property must be populated. • **Multiple** The cardinality is determined by the MinOccurs/MaxOccurs defined in the Property Editor: Advanced Tab. For details, see Property Editor: Advanced Tab , on page 44.
Extension	Which extension this property is part of.

Artifact Editor: Registry Mapping Tab

The **Registry Mapping** tab displays any mappings between the artifact and entities in registries and allows you to create, edit, and remove them:

Business Service: Registry Mapping Tab

It is split into the following panes:

- **Artifact Mapping**

  This is the list of registry entities that represent the artifact in registries. On the right are the following buttons:

  - **Add** adds a registry mapping, as described in Mapping an Artifact Type to a Registry , on page 25
  - **Edit** edits the mapping, as described in Mapping an Artifact Type to a Registry , on page 25
  - **Remove** removes the mapping from the artifact.

  The following registry mapping parameters are displayed in this pane:

Parameter	Definition
Registry Name	The registry that the artifact type is mapped to.
TModel Key	The taxonomy key used to categorize the UDDI entity in the registry.
Key Name	The name used to categorize the UDDI entity in the registry.
Key Value	The value used to categorize the UDDI entity in the registry.
Extension	Which extension this mapping is part of.

- **Property Mappings**

  This is the list of the properties of the artifact and if they are mapped to a registry. On the right are the following buttons:

  - **Add** adds a new registry mapping for the selected property, as described inMapping an Artifact Type to a Registry , on page 25.
  - **Edit** edits a property mapping, as described in Mapping an Artifact Type to a Registry , on page 25
  - **Remove** removes a mapping from the selected property.

  The following registry mapping parameters are displayed in this pane:

Parameter	Definition
Property Name	The name of the property.
Registry Name	The registry that the artifact type property is mapped to.
TModel Key	The taxonomy key used to categorize the UDDI entity in the registry.
Key Name	The name used to categorize the UDDI entity in the registry.
Extension	Which extension this property is part of.

Messages View

The **Messages** view tracks the changes that you make to extension entities and displays any warnings and problems that may occur as a result of those actions:

Messages View

Double-clicking an item in the tree opens the relevant editor for that object.

Project Editor

The project editor allows you to configure your extension project. It contains three tabs described in the following sections:

Project Editor: Overview Tab

The **Overview** tab enables you to view and amend the basic parameters of your extension project:

Project Editor: Overview Tab

The **Overview** tab contains the following collapsible panes:

- **Project details** displays parameters for the extension project:

Parameter	Definition
Project name	The name of the extension project.
Project type	The project is an extension project.
Project location	The workspace folder that contains the extension project.
Last modified	The last time the project was changed.

- **Extension details** enables you to configure some of the extension project parameters:

Parameter	Definition
Name	The display name of the extension.
Version	The version number of the extension project.
Description	A description of the extension project.
URI	The identifier for the extension in the configuration (not editable).
Namespace	The prefix used for the URI when you create a new artifact type or property.

Project Editor: Environment Tab

The **Environment** tab displays the parameters of the Cloud Assessment server that the Customization Editor is configured for:

Project Editor: Environment Tab

The **Environment** tab contains the following parameters:

Parameter	Definition
Platform Home	Your Cloud Assessment installation folder.

Parameter	Definition
Extension Folder	The location of the extension folder in your Cloud Assessment installation.
Server URL	The URL used to access Cloud Assessment.
Deploy JSPs	Indicates if component and JSP development is configured for your extension project.
JBoss Deploy Directory	Deployment directory for your JBoss application server.
JBoss JNDI Port	JNDI port configured in your JBoss application server.

Project Editor: Dependencies Tab

The **Dependencies** tab displays general information about your extension project and any dependencies that is has:

Project Editor:Dependencies Tab

The **Dependencies** tab contains the following panes:

- **Extension dependencies** displays a tree of extensions that the extension project is dependent on.
- **Project and extension general information** displays parameters of the extension project:

Parameter	Definition
Name	The name of the extension.
Version	The version number of the extension project.
Description	A description of the extension project.
URI	The identifier for the extension project in the configuration (not editable).
Buildtime	The creation date and time of the extension.

Property Editor

Properties are attributes of artifacts. The property editor allows you to modify the properties in your extension project. Each property has an editor with the property name as the title containing the tabs described in the following sections:

- Property Editor: Overview Tab , on the next page

  The main attributes of the property.
- Property Editor: Advanced Tab , on the next page

  The advanced attributes of the property.

Property Editor: Overview Tab

The **Overview** tab displays the general attributes of the artifact and enables you to modify some of them:

Description Editor: Overview Tab

This tab contains the following panes:

- **General**

  The following property parameters are displayed in this segment:

Parameter	Definition
Display Name	The name of the property as it appears in the Cloud Assessment UI.
Local Name	The name of the property as it is stored in the extension.
URI	The identifier for the property descriptor in the configuration.
Description	The description of the property as it appears in the Cloud Assessment UI.
Collection Display Name	The plural version of the name as it appears in the Cloud Assessment UI.
Deprecated	A check box indicating whether the property is currently active in the extension.

- **Property Type**, **Relationship**, or **Taxonomy**

  There are three types of property and this segment is specific to each:

  - **Property Type**

    The property type for primitive properties.

  - **Relationship**

    This pane displays the source and target artifacts that this relationship links and some parameters of the inverse relationship. On the right are two sets of two buttons for altering the source and target artifacts:

    - **Add** selects an artifact in the extension to source or target.
    - **Remove** removes the relationship from a source or target artifact.

  - **Taxonomy**

    The taxonomy that contains the available options for this property with **Browse** to select a new taxonomy from the extension project.

Property Editor: Advanced Tab

The **Advanced** tab displays the advanced attributes of the property and allows you to modify them:

Description Editor: Advanced Tab

This tab contains the following panes:

Multiple Cardinality:

Parameter	Definition
MinOccurs	If a property has multiple cardinality this parameter is the minimum occurrences of the property in an artifact.
MaxOccurs	If a property has multiple cardinality this parameter is the maximum occurrences of the property in an artifact. Use `unbounded` if there is no limit.

Caution: Properties that inherit `urn:com:systinet:soa:model:propertyTypes:text`, such as **Name**, cannot have multiple instances. If you need a text property with multiple cardinality, use one that inherits `urn:com:systinet:soa:model:propertyTypes:plainText`.

Note: Cardinality for incoming relationship properties cannot be changed.

- **Default Values:**

Parameter	Definition
Default Value	An XML extract defining the default value.
Multiple Default Value	An XML extract defining default values in the case of multiple cardinality.

- **Database Sizes**

  Displays optional database sizing for property elements with **Add**, **Edit**, and **Remove** functionality.

Property Group Editor

Properties can be organized into groups. The property group editor allows you to add and remove properties from a property group. Each property group has an editor with the property group name as the title.

System Properties Editor

The editor contains the following collapsible segments:

- **General** enables you to change the **Display Name** and view the **URI** of the property group.
- **Properties** enables you to manage the property group.

  On the right are three buttons:

  - **New** creates a new property, as described in Creating a Property Group , on page 29.
  - **Add** adds a property to the group from the list of available properties.
  - **Remove** removes the selected property from this property group.

  The following property parameters are displayed and described in the table below:

Parameter	Definition
Name	The name of the property.
Cardinality	The occurrence of the property in an artifact with options: ◦ **Optional** The property is not required to be populated. ◦ **Required** The property must be populated. ◦ **Multiple** The property can occur multiple times with different values.
Extension	The extension this property is part of.

Search View

The **Search** view displays the results of a search or find usage query:

Search View

The results are shown as a tree of artifact types, properties, and property groups containing the requested item.

Double-click an artifact type, property, or group to open the relevant editor.

Tasks Editor

Tasks are top level Cloud Assessment UI components accessible via their URIs. The tasks editor allows you to create, edit, and remove tasks from your extension project.

Tasks Editor

On the right are the following buttons:

- **New** opens the **New Task** dialog box, as described in Creating a Task , on page 30.
- **Edit** opens the **Edit Task** dialog box with the same parameters described in Creating a Task , on page 30
- **Remove** deletes the selected task from your extension project.

The following parameters relate to tasks:

Parameter	Definition
URI	The identifier for the task.
Component	The component the task uses.
Caption	A name for the task.
Extension	Which extension this task is part of.

Taxonomies Editor

Taxonomies are category groups that allow you to organize your services. The taxonomies editor allows the import and removal of taxonomies from your extension project.

Taxonomies Editor

On the right are the following buttons:

- **Import** imports taxonomies from the active Cloud Assessment server.
  The referenced Cloud Assessment server must be running during import.
- **Update** refreshes the taxonomy list with any changes from the Cloud Assessment server.
- **Remove** deletes the selected taxonomy from the extension project.

The following parameters relate to taxonomies:

Parameter	Definition
Name	The name of the taxonomy as it is stored in the extension.
TModel Key	The taxonomy key identifier.
Extension	Which extension this taxonomy is part of.

Appendix A: Dialog Boxes

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

- New Artifact , below: Create a new artifact type or package.
- New Component , on the next page: Create a new component.
- New Extension Project , on the next page: Create an extension project.
- New Property , on page 52: Create a new property.
- New Property Group , on page 54: Create a new property group.
- New Task , on page 54: Create a new task.
- Registry Mapping , on page 55: Add registry mapping.
- Search , on page 56: Search your extension project.

New Artifact

The New Artifact Type and New Artifact Package dialogs are identical and consist of the following ordered stages:

1. New Artifact: Create , below
2. New Artifact: Database Settings , on the next page

New Artifact: Create

Enter general parameters of the new artifact type.

Parameter	Definition
Display Name	The name of the artifact as it appears in the Cloud Assessment UI.
Local Name	The name of the artifact as it is stored in the extension.
URI	The identifier of the artifact descriptor in the configuration.
Collection Display Name	The plural name of the artifact as it appears in the Cloud Assessment UI.
Package	Click **Browse** to select a parent artifact package to which the artifact belongs. The default is Cloud Assessment if the new artifact is not created from within an existing artifact package.
Extends	If you select **Extends**, the new artifact inherits any future changes made to the chosen parent artifact.

Parameter	Definition
	Click **Browse** to select an artifact type to inherit the properties from
Description	The description of the artifact type as it appears in the Cloud Assessment UI.
Data Attachment	If the artifact type normally has attached data content, select the content type from the drop-down list.
Revisionless	Specify the artifact to be revisionless. These type of artifacts update without creating a new revision.

New Artifact: Database Settings

Specify database settings for the new artifact type.

Parameter	Definition
Collection name	The name of collection where the artifact instances are stored
Database table name	The name of the database table where instances of this artifact are stored

Note: You cannot change these parameters if the new artifact extends an artifact type that already defines them.

New Component

Enter general parameters for the new component.

Parameter	Definition
Name	The name of the component as it is stored in the extension.
Page	The JSP used by the component.
Class name	The Java class used by the component.
Component parameters	Use **Add** and **Remove** to select parameters to use with the component.

New Extension Project

The New Extension Project dialog consists of the following stages depending on the options you select:

1. New Extension Project: Specify Cloud Assessment Server Installation , on the next page

2. New Extension Project: New Server , on the next page
3. New Project: Select Working Extensions , on the next page
4. New Project: Create a New Extension , on the next page
5. New Project: Create Dependencies , on page 52

New Extension Project: Specify Cloud Assessment Server Installation

Specify configuration details for an Cloud Assessment server.

Parameter	Definition
Base URL	EM base URL. For example: *http://localhost:8080/cloudassessment*.
Username / Password	Admin credentials to connect to Micro Focus Cloud Assessment.
Platform Home	Use **Browse** to select the Cloud Assessment platform installation folder. If Workbench is installed on a different machine other than the Cloud Assessment server, simply select an empty folder.
Extension Folder	Use **Browse** to select the extension folder in your Cloud Assessment installation (populated by default based on the **Platform Home** input. If Workbench is installed on a different machine other than the Cloud Assessment server, copy the core extension file from Cloud Assessment installation folder (usually in `CloudAssessment_HOME/extensions/`) to this folder.
Production Mode	Select this check-box to create the project in production mode (selected by default). This disables customizations that would require the deletion of server data during the application of the extension to Cloud Assessment.
Project Type	Select from the following options: • **model** for changes to the SDM model. • **code** for custom code components and UI customizations. • **mixed** for both types of changes (not recommended).
JBoss Deploy Directory	Use **Browse** to select the deployment directory for your application server (usually `JBOSS_HOME\standalone\deployments`)
JBoss JNDI Port	Input the JNDI Port for your application server.

Only JBoss is supported for the development of components and tasks in this release.

New Extension Project: New Server

Specify parameters for the new server.

Parameter	Definition
Name	The name you want to use for the new server.
URL	The endpoint URL of the server you want to use.
Username and Password	Your login credentials for the specified server.
Save password	Select this check-box to store your login credentials.
Validate connection	Select this check-box to validate connection to the server. Otherwise, you can validate connection the next time you log in.

New Project: Select Working Extensions

Choose how to create your working extensions.

Selection	Action
Create a new extension from scratch	Click **Next**.
Edit an existing extension	Do one of the following: • Select from the available extensions and click **Next**. • Click **Add extension** to browse for and select a different extension, and click **Next**. You cannot edit the core extension
Create a new extension from an existing one	Do one of the following: • Select from the available extensions and click **Next**. You cannot use the core extensions. • Click **Add extension** to browse for and select a different extension, and click **Next**.

New Project: Create a New Extension

Enter general parameters for the new extension.

Parameter	Definition
Name	The name of your extension project
Namespace	The prefix used for the URI when creating a new artifact type or property
Description	A description of your extension project
Version	The extension version number
URI	The unique identifier of the extension

New Project: Create Dependencies

Select extensions to declare dependencies.

Tip: Your changes are stored in your extension. You can change the labels and descriptions of elements from dependent extensions but you cannot delete them or make any other changes. If you want to delete an element from a dependent extension then deprecate it.

New Property

The New Property dialog contains parameters according to the property type:

- New Property: Primitive , below
- New Property: Relationship , on the next page
- New Property: Taxonomy , on the next page

For details about property types, see Properties , on page 14.

New Property: Primitive

Enter general parameters for the new primitive property.

Parameter	Definition
Display Name	The name of the property as it appears in the Cloud Assessment UI
Local Name	The name of the property as it is stored in the extension
URI	The identifier for property in the configuration
Collection Display Name	The plural name of the property as it appears in the Cloud Assessment UI
Description	The description of the property as it appears in the Cloud Assessment UI

Parameter	Definition
Property Type	Use **Browse** to select a property from the available primitive property types. For details, see Properties , on page 14.

New Property: Relationship

Enter general parameters for the new relationship property.

Parameter	Definition
Display Name	The name of the property as it appears in the Cloud Assessment UI
Local Name	The name of the property as it is stored in the extension
URI	The identifier for the property in the configuration
Collection Display Name	The plural name of the property as it appears in the Cloud Assessment UI
Description	The description of the property as it appears in the Cloud Assessment UI
Relation Type	Select a type from the drop-down list
From Entity	Use **Browse** to select the source artifact type or property group of the relationship
To Entity	Use **Browse** to select the target artifact type or property group of the relationship
Inverse Display Name	The name of the inverse relationship property as it appears in the Cloud Assessment UI
Inverse Local Name	The name of the inverse relationship property as it is stored in the extension
Inverse URI	The identifier for the inverse property descriptor in the configuration
Inverse Collection Display Name	The plural name of the inverse relationship property as it appears in the Cloud Assessment UI
Inverse Relationship Description	The description of the inverse relationship property as it appears in the Cloud Assessment UI

New Property: Taxonomy

Enter general parameters for the new taxonomy property.

Parameter	Definition
Display Name	The name of the property as it appears in the Cloud Assessment UI
Local Name	The name of the property as it is stored in the extension
URI	The identifier for the property in the configuration
Collection Display Name	The plural name of the property as it appears in the Cloud Assessment UI
Description	The description of the property as it appears in the Cloud Assessment UI
Taxonomy	Use **Browse** to select a taxonomy from the available taxonomies with an option to import taxonomies available in Cloud Assessment that are not in your extension.

New Property Group

Enter general parameters for the new property group.

Parameter	Definition
Display Name	The name of the property group as it appears in the Cloud Assessment UI
URI	The identifier for the property group descriptor in the configuration
Properties	Use **Add** and **Remove** to select the properties in the group

New Task

Enter general parameters for the new task.

Parameter	Definition
Uri	The identifier for the task
Component	Use **Browse** to select the component to associate with the task
Caption	A visible name for the task.
Task parameters	Use **Add** and **Remove** to select parameters to use with the task

New Taxonomy

Enter general parameters for the new taxonomy.

Parameter	Definition
Taxonomy Name	The name of the new taxonomy as it will appear in the Cloud Assessment UI.
Taxonomy ID	The system identifier of the new taxonomy.
Filename	The name of the taxonomy as it appears in the repository.

Registry Mapping

- Registry Mapping: New Artifact Mapping , below
- Registry Mapping: New Property Mapping , below

Registry Mapping: New Artifact Mapping

Enter parameters for the new registry mapping of the artifact.

Parameter	Definition
Registry	Use **Select** to select from the available registries
T-ModelKey	Use **Add** to select from the available taxonomies or input one
T-ModelKey version 2	If you are mapping to a UDDI version 2 registry input a taxonomy key
Key Name	The name used to categorize the UDDI entity in the registry
Key Value	The value used to categorize the tModel in the registry
Display Name	The name of the mapping as it appears in the Cloud Assessment UI
Cache content	If selected, the content of documents referenced from the UDDI entity are cached in Cloud Assessment
Direction	Select the direction of the mapping from the drop-down list

Registry Mapping: New Property Mapping

Enter parameters for the new registry mapping of the property.

Parameter	Definition
Property	Use **Select** to select from the available properties
Direction	Select the direction of the mapping from the drop-down list
Registry	Use **Select** to select from the available registries
T-ModelKey	Use **Add** to select from the available taxonomies or input one
T-ModelKey version 2	If you are mapping to a UDDI version 2 registry input a taxonomy key
Key Name	The name used to categorize the UDDI entity in the registry

Search

Enter parameters to search your extension project.

Parameter	Definition
Containing text	The parameter to search for
Case sensitive	Check the box to make the search case sensitive
Regular expression	Enables more sophisticated search parameters (for example, to find everything with more than one word). This is an advanced topic beyond the scope of this guide.
Search For	Select the SDM entities to search
Search In	Select the entity attributes to search
Scope	Select the extension to search

Share Project

Define parameters for the CVS repository.

Parameter	Definition
Host	The name of the host server.
Repository path	The location of the host server.

Parameter	Definition
User and Password	Your login credentials for the host server.
Connection type	The communication protocol for the CVS host server.

Appendix B: Localname Naming Rules

The naming strategy used to generate the names of database tables and columns can only process a specific subset of XML identifiers (element and attribute names). This is because the existing database engines have limits for the length of tablename/columnname identifiers. XML identifiers are generated from the SDM configuration in a straightforward way. This section omits the XML layer for simplicity and summarizes the rules at the SDM level which is more user-friendly.

When creating an artifact type or property, for the localname, do the following:

- Use Latin characters where possible (A-Z, a-z)
- Use short identifiers where possible to improve the readabililty of the DB schema. For example, `stSchtronXslt` is a better localname than `searchAndTransformSchematronXsltUrlLink`.
- You can safely use underscores in localnames.

  Do not use numbers in localnames where possible. They should not be used in artifact localnames at all and to avoid confusion, do not use numbers in property localnames when the property is in multiple cardinality.

  Using numbers in localnames increases the chances that extension application fails.

  There are no restrictions on property group localnames as they are not represented in the database schema.

  It is difficult to generate separate validation rules for properties and artifacts because the generated DB identifiers are often influenced by a combination of both.