

HP Universal CMDB

for the Windows and Solaris operating systems

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HP Universal CMDB–Data Dependency and Mapping Inventory (DDMi) Integration Guide

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Data Dependency and Mapping Inventory Integration with HP Universal CMDB

This document includes the main concepts, tasks, and reference information for integration of Data Dependency and Mapping Inventory (DDMi) with HP Universal CMDB (UCMDB).

This chapter includes:

Concepts

- ▶ Overview on page 2
- ▶ EDDBAdapter Database Adapter on page 2

Tasks

- ▶ Replicate DDMi Data to UCMDB on page 3
- ▶ Update the Integration Data Model in UCMDB on page 6

Reference

- ▶ ED DB Adapter Configuration Files on page 8
- ▶ **Troubleshooting and Limitations** on page 9

Overview

This document describes how to use an adapter to integrate DDMi with UCMDB. Integration occurs by replicating devices, topology, and hierarchy from DDMi into the UCMDB database (CMDB). This enables change management and impact analysis across all business services mapped in UCMDB from a storage point of view.

According to UCMDB reconciliation rules, if a CI is mapped to another CI in the CMDB, it is updated during reconciliation; otherwise, it is added to the CMDB.

Supported Versions

DDMi integration has been developed and tested on HP Universal CMDB version 7.5.2 or later with DDMi version 2.20 or later.

EDDBAdapter Database Adapter

The **EDDBAdapter (ED DB Adapter)** database adapter is based on the Generic DB Adapter. This adapter supports both full and differential replication of all source CIs that are defined in the **smIntegration** package. For details, see “Deploy the smIntegration Package” on page 3.

The ED DB Adapter supports the following DDMi features:

- ▶ Identifying changes that have occurred in DDMi, to update the replicated CI database.
- ▶ Implementing **Remove** in DDMi. When a CI is removed in DDMi, it is not physically deleted from the database, but its status is changed to indicate that the CI is no longer active. The ED DB Adapter interprets this status as an instruction to remove the CI when needed.

For query details, see “ED DB Adapter Configuration Files” on page 8.

Replicate DDMi Data to UCMDB

This task describes how to install and use the ED DB Adapter, and includes the following steps:

- “Deploy the smIntegration Package” on page 3
- “Change Root CITs in the CI Type Selector” on page 3
- “Define the Source Adapter” on page 4
- “Define the Target Adapter” on page 5
- “Define the Replication Job” on page 5
- “Run the Replication Job” on page 5

1 Deploy the smIntegration Package

The **smIntegration.zip** package is located on the file system in:
<HP Universal CMDB root directory>\UCMDB\UCMDBServer\root\lib\
integration_packages.

You deploy this package to enable the ED DB Adapter, as well as the classes and TQL queries needed to run the replication.

2 Change Root CITs in the CI Type Selector

The CITs added when you deploy the **smIntegration** package are not automatically visible under the IT Universe node of the CI Type Selector. To view these CI Types in the tree, and to be able to edit or create new TQL queries with the proper links, do the following:

- a** Navigate to **Settings > Infrastructure Settings Manager**.
- b** Select **Settings** and then select **UCMDB common**.
- c** Change **Link Root** to **link**.
- d** Change **Object Root** to **data**.
- e** Log out of UCMDB and then log in again.

3 Define the Source Adapter

Define the ED DB Adapter as the source adapter for the DDMi data store.

a Navigate to **Settings > Federated CMDB**.



b Click the **New Data Store** button to open the New Data Store Dialog Box. For details, see “New Data Store Wizard” in *Integrations*.

c On the **Properties** tab, enter the following information:

Name	Recommended Value	Description
Adapter	EDDBAdapter	The name of the adapter that will be used to retrieve the external data from the DDMi database.
Name	ed	The name of the data store. You must use the name ed if you are integrating DDMi with HP Service Manager.
Host	<user defined>	The name of the DDMi server
Port	8108	The port through which you access the DDMi database.
User	<user defined>	The user name needed to access the DDMi database.
Password	<user defined>	The password needed to access the DDMi database.
URL	dbtype=mysql;dbname=aggregate	Use this field to define a specific URL to connect to DDMi database.

d On the Supported Queries tab, make sure you select the following TQL queries:

- hostData
- hostRelationsData
- networkData1
- networkData2
- networkRelationsData
- printerData

For additional details on defining adapters, see “New Data Store Wizard” in *Integrations*.

4 Define the Target Adapter

Define the CmdbRmiAdapter as the target adapter for the DDMi data store. For details on defining adapters, see “New Data Store Wizard” in *Integrations*.

5 Define the Replication Job

Define a replication job that uses the source adapter you defined in step 3 and the target adapter you defined in step 4. For details, see “Replication Jobs Tab” in *Integrations*.

6 Run the Replication Job

Activate the replication job in one of the following ways:



- To immediately run a full replication, click the **Ad Hoc Full Replication** button. In a full replication, all appropriate data in the source is brought to the target, without taking the last run of the replication job into consideration.



- To immediately run a differential replication, click the **Ad Hoc Diff Replication** button. In a differential replication, the previous replication time stamp is sent to DDMi, and DDMi returns changes from that time stamp to the present. These changes are then entered into the UCMDB database.
- To schedule a differential replication to run at a later time or periodically, define a scheduled task. For details, see “Define Tasks that Are Activated on a Periodic Basis” in *Model Management*.

Update the Integration Data Model in UCMDB

You can extend out-of-the-box CIs for DDMi integration in one of the following ways:

To add an attribute to an existing CI type:

- 1** In the file system, navigate to: `<HP Universal CMDB root directory>\UCMDB\UCMDBServer\j2f\fcMDB\CodeBase\EDDBAdapter\META-INF\orm.xml`.
- 2** Locate the `generic_db_adapter.[CI type]` that was changed, and add the new attribute.

For details on adding attributes, see “Add/Edit Attribute Dialog Box” in *Model Management*.

- 3** Reload the adapter by performing one of the following actions:
 - Navigate to: `http://[uCMDB server]:8080/jmx-console/HtmlAdaptor?action=inspectMBean&name=Topaz%3AService%3DFCmdb+Config+Services`.
 - Select `loadOrReloadCodeBaseForAdapterId`. Set the customer ID to 1 and the adapter ID to `EDDBAdapter`.

or

- Click the **Reload** button.

- 4** Ensure that the TQL queries that include this CIT have the new attribute in their layouts.
 - a** In the Query Manager, right-click the node where you want to include the attribute.
 - b** Select **Node/Relationship Properties**.
 - c** Click **Advanced layout settings** and select the new attribute.

For details about selecting attributes, see “Layout Settings Dialog Box” in *Model Management*. For limitations on creating this TQL query, see “Troubleshooting and Limitations” on page 9.



To add a new CI Type to the Generic DB Adapter:

- 1** In UCMDB, create the CI Type that you want to add to the adapter, if it does not already exist. For details, see “Create a CI Type” in *Model Management*.
- 2** In the file system navigate to: <HP Universal CMDB root directory>\UCMDB\UCMDBServer\j2f\FCMDB\CodeBase\EDDBAdapter\META-INF\orm.xml.
- 3** Map the new CI type by adding a new entity called **generic_db_adapter.[CI type]**.
- 4** In the **orm.xml** file, ensure that the new CI type has the following mappings:
 - the **data_note** attribute is mapped to the **NMID_StatusInAppliance** column (this attribute is used for checking the CI’s status).
 - the **root_updatetime** and **root_createtime** attributes are mapped to the **Device_UpdatedDt** and **Device_FirstFoundDt** columns.

For details, see “The orm.xml File” in *Integrations*.

- 5** Reload the adapter by performing one of the following actions:
 - Navigate to: **http://[uCMDB server]:8080/jmx-console/HtmlAdaptor?action=inspectMBean&name=Topaz%3AService%3DFCmdb+Config+Services**.
 - Select **loadOrReloadCodeBaseForAdapterId**. Set the customer ID to **1** and the adapter ID to **EDDBAdapter**.

or

 - Click the **Reload** button.
- 6** Create queries to support the new CITs that you have added. Make sure that all mapped attributes have been selected in the Advanced Layout settings:
 - a** In the Query Manager, right-click the node where you want to include the attribute.
 - b** Select **Node/Relationship Properties**.
 - c** Click **Advanced layout settings** and select the new attribute.



For details about selecting attributes, see “Layout Settings Dialog Box” in *Model Management*. For limitations on creating this TQL query, see “Troubleshooting and Limitations” on page 9.

- 7 In UCMDDB, navigate to **Settings > Federated CMDB**.
- 8 Edit the DDMi data store to support the updated TQL queries.
- 9 Edit the replication job that you created in step 5 on page 5 to include the new TQL query.

ED DB Adapter Configuration Files

The adapter includes the following configuration files:

- ▶ **orm.xml**. The OR mapping file in which you map between CMDB classes and database tables.
- ▶ **discriminator.properties**. Maps each supported CI type (also used as a discriminator value in **orm.xml**) to a list of possible corresponding values of the discriminator column, **DeviceCategory_ID**.
- ▶ **replication_config.txt**. Contains a comma-separated list of non-root CIs and relations types that have a **Remove** status condition in the DDMi database. This status condition indicates that the device has been marked for deletion.
- ▶ **fixed_values.txt**. Includes a fixed value for the attribute **ip_domain** in the class IP (**DefaultDomain**).

For details on adapter configuration, see “The Generic Database Adapter” in *Integrations*.

Troubleshooting and Limitations

- A query should contain one CI that is labeled Root, or one or more relations that are labeled Root.

The root node is the main CI that is synchronized; the other nodes are the contained CIs of the main CI. For example, when synchronizing hosts, the host node is labeled as root and the host resources are not root.

- The TQL graph must not have cycles.
- A query that is used to synchronize relations should have the cardinality 1...* and an OR condition between the relations.
- The adapter does not support compound relations.

